Source: **T1**

Title: **CRs to TS 34.121 v.5.5.0 for approval**

Agenda item: **5.1.3**

Document for: **Approval**

This document contains the CRs to TS 34.121 v.5.5.0. These CRs have been agreed by T1 and are put forward to TSG T for approval.

Doc-2nd-Level	*CR*	*Rev*	*Phase*	*Subject*	*Cat*	*Version-Current*	*Version-New*
T1-041507	431	-	Rel-5	Introduction of Test Tolerances to Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later), test 8.6.1.2A	F	5.5.0	5.6.0
T1-041523	432	-	Rel-5	Addition of UMTS-850 Band V to chapter 4.	F	5.5.0	5.6.0
T1-041524	433	-	Rel-5	Addition of UMTS-850 Band V to chapter 5	F	5.5.0	5.6.0
T1-041567	434	-	Rel-5	Correction of the FDD/FDD Soft Handover test parameters	F	5.5.0	5.6.0
T1-041577	435	-	Rel-5	Corrections to TC 8.7.3C UE transmitted power	F	5.5.0	5.6.0
T1-041579	436	-	Rel-5	Addition of test tolerances to TC 8.3.4	F	5.5.0	5.6.0
T1-041648	437	-	Rel-5	New clause for reference conditions	F	5.5.0	5.6.0
T1-041650	438	-	Rel-5	Alignment of HSDPA OCNS with TS 25.101	F	5.5.0	5.6.0
T1-041653	439	-	Rel-5	Correction to Handover to GSM TC 8.3.4	F	5.5.0	5.6.0
T1-041661	440	-	Rel-5	Correction to test procedure in 7.12	F	5.5.0	5.6.0
T1-041662	441	-	Rel-5	Correction to 8.7.6.1 UE Rx-Tx time difference type 1	F	5.5.0	5.6.0
T1-041667	442	-	Rel-5	Corrections to RRM test cases 8.6.1.2 Event riggered reportingÖ	F	5.5.0	5.6.0
T1-041684	443	-	Rel-5	Update of references to GSM core specifications	F	5.5.0	5.6.0
T1-041749	444	-	Rel-5	Corrections to HSDPA test 9.4 (HS-SCCH detection)	F	5.5.0	5.6.0
T1-041790	445	-	Rel-5	Clarification of HS-PDSCH and HS-SCCH signal structure	F	5.5.0	5.6.0
T1-041810	446	-	Rel-5	CR to 34.121 Rel 5: Editorial corrections to test 8.7.3	D	5.5.0	5.6.0
T1-041813	447	-	Rel-5	Corrections to BTFD test case	F	5.5.0	5.6.0
T1-041818	448		Rel-5	Corrections to RRM test cases 8.3.2.1 and 8.3.2.2 Correction to the test procedure of FDD/FDD Hard Handover	F	5.5.0	5.6.0

				test cases			
T1-041822	449	-	Rel-5	Corrections to TC 8.6.4.1	F	5.5.0	5.6.0
T1-041824	450	-	Rel-5	Correction to pathloss indicator	F	5.5.0	5.6.0
T1-041830	451	-	Rel-5	Corrections to RRM test case 8.5.1 UE Transmit Timing	F	5.5.0	5.6.0
T1-041831	452	-	Rel-5	Corrections and additions to Release 5 RRM test case 8.6.2.2	F	5.5.0	5.6.0
T1-041832	453	-	Rel-5	Measurement Channel for BLER measurement in 8.3.1 FDD/FDD Soft Handover.	F	5.5.0	5.6.0
T1-041834	454	-	Rel-5	Correction to SFN-SFN observed time difference type 1 measurement test case	F	5.5.0	5.6.0
T1-041838	455	-	Rel-5	Corrections to HSDPA test 6.3A (max input power)	F	5.5.0	5.6.0
T1-041841	456	-	R99	CM configuration in FDD inter frequency measurements in TC 8.6.2.1	F	5.5.0	5.6.0
T1-041843	457	-	Rel-5	Addition of the scheduling information for Cell Re-Selection test cases	F	5.5.0	5.6.0
T1-041844	458	-	Rel-5	Correction to 8.3.1 UE FDD/FDD Soft Handover	F	5.5.0	5.6.0
T1-041845	459	-	Rel-5	Correction to 8.7.1.1 CPICH RSCP Intra frequency measurements accuracy	F	5.5.0	5.6.0
T1-041852	460	-	Rel-5	Corrections to HSDPA test 9.3 (CQI reporting)	F	5.5.0	5.6.0
T1-041858	461	-	Rel-5	Correction to measurement configurations in section 7	F	5.5.0	5.6.0
T1-041859	462	-	Rel-5	Change of notes position in TS34.121 Annex E.3	F	5.5.0	5.6.0
T1-041860	463	-	Rel-5	BLER testing for UEs with asymmetrical UL/DL data rates	F	5.5.0	5.6.0
T1-041861	464	-	Rel-5	Invalid MAC header for downlink dummy DCCH	F	5.5.0	5.6.0
T1-041865	465	-	Rel-5	Addition of test tolerances and corrections for 8.6.2.1 Correct reporting of neighbours in AWGN propagation condition (34.121)	F	5.5.0	5.6.0
T1-041866	466	-	Rel-5	Correction to Correct reporting of neighbours in fading progagation condition test case	F	5.5.0	5.6.0
T1-041867	467	-	Rel-5	Correction to Event triggered reporting of two detectable neighbours in AWGN propagation condition test cases	F	5.5.0	5.6.0
T1-041868	468	-	Rel-5	S-CCPCH configuration in 8.3.5 Cell Re-selection in CELL_FACH.	F	5.5.0	5.6.0
T1-041869	469	-	Rel-5	Corrections to TC 8.2.3.1 and 8.2.3.2	F	5.5.0	5.6.0
T1-041870	470	-	Rel-5	Correction to MEASUREMENT CONTROL Message for 8.6.2.1: Correct reporting of neighbours in AWGN propagation condition and 8.3.2.2: FDD/FDD Hard Handover to inter-frequency cell test cases	F	5.5.0	5.6.0
T1-041872	471	-	Rel-5	Corrections to HSDPA test 9.2 (Demod of HS-DSCH)	F	5.5.0	5.6.0
T1-041873	472	-	Rel-5	Addition of UMTS-850 Band V to chapter 6	F	5.5.0	5.6.0
T1-041877	473	-	Rel-5	Correction of time to receive system information in RRM test cases	F	5.5.0	5.6.0
T1-041878	474	-	Rel-5	CR to 34.121: Changing the BLER target for the DCCH in test 7.8	D	5.5.0	5.6.0
T1-041881	475	-	Rel-5	Corrections to Information elements for	F	5.5.0	5.6.0

				Monitored Cells in Annex I.			
T1-041882	476	-	Rel-5	Introduction of UMTS-850 MHz band V	F	5.5.0	5.6.0

3GPP TSG-T1 Meeting #25
Malta, 1.-5. November, 2004

Tdoc ⌘T1-041523

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**432**	⌘**rev**	**-**	⌘	Current version:	**5.5.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Addition of UMTS-850 Band V to chapter 4.		
Source:	⌘	Nokia		
Work item code:	⌘	TEI	***Date:*** ⌘	16/10/2004
Category:	⌘	F	***Release:*** ⌘	R5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Channel numbers and frequency arrangement information for Band V (UMTS 850) is missing in 34.121
Summary of change:	⌘	This CR will introduce necessary general parameters (Channel numbers, frequencies etc) to chapter 4 for UMTS-850 band. This CR also does some editorial changes to align 25.101 and 34.121.
Consequences if not approved:	⌘	34.121 tests cannot be performed in Band V.

Clauses affected:	⌘	4.3, 4.4.3, 4.4.4				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR is to be trated as release independent.				

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Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version,

look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

4.3 TXñRX frequency separation

a) UTRA/FDD is designed to operate with the following TX-RX frequency separation.

Operating Band	TX-RX frequency separation
I	190 MHz
II	80 MHz
III	95 MHz
V	45 MHz
VI	45 MHz~~.~~

b) UTRA/FDD can support both fixed and variable transmit to receive frequency separation.

c) The use of other transmit to receive frequency separations in existing or other frequency bands shall not be precluded.

4.4 Channel arrangement

4.4.1 Channel spacing

The nominal channel spacing is 5 MHz, but this can be adjusted to optimise performance in a particular deployment scenario.

4.4.2 Channel raster

The channel raster is 200 kHz, ~~which~~ for all bands ~~except Band II and Band VI~~ which means that the centre frequency must be an integer multiple of 200 kHz. ~~In Band II, 12 additional centre frequencies are specified according to the table in 4.1a and the centre frequencies for these channels are shifted 100 kHz relative to the normal raster. In Band VI , additional centre frequencies are specified according to Table 4.1b and the centre frequencies for these channels are shifted 100 kHz relative to the normal raster.~~ In addition a number of additional centre frequencies are specified according to table 4.1a, which means that the centre frequencies for these channels are shifted 100 kHz relative to the general raster.

4.4.3 Channel number

The carrier frequency is designated by the UTRA Absolute Radio Frequency Channel Number (UARFCN). The values of the UARFCN are as follows.

Table 4.1: UARFCN definition (general)

UPLINK (UL) UE transmit, Node B receive		DOWNLINK (DL) UE receive, Node B transmit	
UARFCN	Carrier frequency [MHz] (F_{UL}) (Note 1)	UARFCN	Carrier frequency [MHz] (F_{DL}) (Note 2)
$N_u = 5 * F_{UL}$	0.0 MHz $\leq F_{UL} \leq$ 3276.6 MHz	$N_d = 5 * F_{DL}$	0.0 MHz $\leq F_{DL} \leq$ 3276.6 MHz
Note 1: F_{UL} is the uplink frequency in MHz Note 2: F_{DL} is the downlink frequency in MHz			

Table 4.1a: UARFCN definition (additional channels)

Band	UPLINK (UL) UE transmit, Node B receive		DOWNLINK (DL) UE receive, Node B transmit	
	UARFCN	Carrier frequency [MHz] (F_{UL})	UARFCN	Carrier frequency [MHz] (F_{DL})
I	-	-	-	-
II	$N_u = 5 * (F_{UL}$ ñ 1850.1 MHz)	1852.5, 1857.5, 1862.5, 1867.5, 1872.5, 1877.5, 1882.5, 1887.5, 1892.5, 1897.5, 1902.5, 1907.5	$N_d = 5 * (F_{DL}$ ñ 1850.1 MHz)	1932.5, 1937.5, 1942.5, 1947.5, 1952.5, 1957.5, 1962.5, 1967.5, 1972.5, 1977.5, 1982.5, 1987.5
III	-	-	-	-
V	$N_u = 5 * (F_{UL}$ ñ 670.1 MHz)	826.5, 827.5, 831.5, 832.5, 837.5, 842.5	$N_d = 5 * (F_{DL}$ ñ 670.1 MHz)	871.5, 872.5, 876.5, 877.5, 882.5, 887.5
VI	$N_u = 5 * (F_{UL}$ ñ 670.1 MHz)	832.5, 837.5	$N_d = 5 * (F_{DL}$ ñ 670.1 MHz)	877.5, 882.5

~~Uplink~~	~~$N_u = 5 * F_{uplink}$~~	~~0,0 MHz $\leq F_{uplink} \leq$ 3 276,6 MHz where F_{uplink} is the uplink frequency in MHz~~
~~Downlink~~	~~NdN$_d$ = 5 * $F_{downlink}$~~	~~0,0 MHz $\leq F_{downlink} \leq$ 3 276,6 MHz where $F_{downlink}$ is the downlink frequency in MHz~~

~~**Table 4.1a: UARFCN definition (Band II additional channels)**~~

	~~UARFCN~~	~~Carrier frequency [MHz]~~
~~Uplink~~	~~Nd = 5 * (F_{uplink} ñ 1850.1 MHz)~~	~~F_{uplink} = 1852.5, 1857.5, 1862.5, 1867.5, 1872.5, 1877.5, 1882.5, 1887.5, 1892.5, 1897.5, 1902.5, 1907.5~~
~~Downlink~~	~~N_u = 5 * ($F_{downlink}$ ñ 1850.1 MHz)~~	~~$F_{downlink}$ = 1932.5, 1937.5, 1942.5, 1947.5, 1952.5, 1957.5, 1962.5, 1967.5, 1972.5, 1977.5, 1982.5, 1987.5~~

~~**Table 4.1b: UARFCN definition (Band VI additional channels)**~~

	~~UARFCN~~	~~Carrier frequency [MHz]~~
~~Uplink~~	~~N_u = 5 * (F_{uplink} ñ 670.1 MHz)~~	~~F_{uplink} = 832.5, 837.5~~
~~Downlink~~	~~Nd = 5 * ($F_{downlink}$ ñ 670.1 MHz)~~	~~$F_{downlink}$ = 877.5, 882.5~~

4.4.4 UARFCN

The following UARFCN range shall be be supported for each paired band.

Table 4.2: UTRA Absolute Radio Frequency Channel Number

Operating Band	Uplink UE transmit, Node B receive	Downlink UE receive, Node B transmit
I	9 612 to 9 888	10 562 to 10 838
II	9 262 to 9 538 and 12, 37, 62, 87, 112, 137, 162, 187, 212, 237, 262, 287	9 662 to 9 938 and 412, 437, 462, 487, 512, 537, 562, 587, 612, 637, 662, 687
III	8562 to 8913	9037 to 9388
V	4132 to 4233 and 782, 787, 807, 812, 837, 862	4357 to 4458 and 1007, 1012, 1032, 1037, 1062, 1087
VI	4162 to 4188 and 812, 837	4387 to 4413 and 1037, 1062

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Malta, 1.-5. November, 2004

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CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**433**	⌘ **rev**	**-**	⌘	Current version:	**5.5.0**	⌘

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Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Addition of UMTS-850 Band V to chapter 5		
Source:	⌘	Nokia		
Work item code:	⌘	TEI	***Date:*** ⌘	16/10/2004
Category:	⌘	F *Use one of the following categories:* ***F** (correction)* ***A** (corresponds to a correction in an earlier release)* ***B** (addition of feature),* ***C** (functional modification of feature)* ***D** (editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	***Release:*** ⌘	R5 *Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Band V (UMTS 850) is missing in 34.121 chapter 5.
Summary of change:	⌘	This CR will introduce UMTS-850 band to chapter 5 (Transmitter characteristics).
Consequences if not approved:	⌘	34.121 chapter 5 tests cannot be performed in Band V.

Clauses affected:	⌘	5.2, 5.9 and 5.11				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR is to be treated as release independent.				

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.2 Maximum Output Power

5.2.1 Definition and applicability

The nominal maximum output power and its tolerance are defined according to the Power Class of the UE.

The maximum output power is a measure of the maximum power the UE can transmit (i.e. the actual power as would be measured assuming no measurement error) in a bandwidth of at least (1+ α) times the chip rate of the radio access mode. The period of measurement shall be at least one timeslot.

The requirements and this test apply to all types of UTRA for the FDD UE.

5.2.2 Minimum Requirements

The UE maximum output power shall be within the nominal value and tolerance specified in table 5.2.1 even for the multi-code transmission mode.

Table 5.2.1: Nominal Maximum Output Power

Operating Band	Power Class 1		Power Class 2		Power Class 3		Power Class 4	
	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)
Band I	+33	+1/-3	+27	+1/-3	+24	+1/-3	+21	+2/-2
Band II	-	-	-	-	+24	+1/-3	+21	+2/-2
Band III	-	-	-	-	+24	+1/-3	+21	+2/-2
Band V	-	-	-	-	+24	+1/-3	+21	+2/-2
Band VI	-	-	-	-	+24	+1/-3	+21	+2/-2

The normative reference for this requirement is TS 25.101 [23] clause 6.2.1.

5.2.3 Test purpose

To verify that the error of the UE maximum output power does not exceed the range prescribed by the nominal maximum output power and tolerance in table 5.2.1.

An excess maximum output power has the possibility to interfere to other channels or other systems. A small maximum output power decreases the coverage area.

5.2.4 Method of test

5.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: low range, mid range, high range; see clause G.2.4.

1) Connect the SS to the UE antenna connector as shown in figure A.1.

2) A call is set up according to the Generic call setup procedure.

3) Enter the UE into loopback test mode and start the loopback test.

See TS 34.108 [3] and TS 34.109 [4] for details regarding generic call setup procedure and loopback test.

5.2.4.2 Procedure

1) Set and send continuously Up power control commands to the UE.

2) Measure the mean power of the UE in a bandwidth of at least (1+ α) times the chip rate of the radio access mode. The mean power shall be averaged over at least one timeslot.

5.2.5 Test requirements

The maximum output power, derived in step 2), shall not exceed the range prescribed by the nominal maximum output power and tolerance in table 5.2.2.

Table 5.2.2: Nominal Maximum Output Power

Operating Band	Power Class 1		Power Class 2		Power Class 3		Power Class 4	
	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)
Band I	+33	+1,7/-3,7	+27	+1,7/-3,7	+24	+1,7/-3,7	+21	+2,7/-2,7
Band II	-	-	-	-	+24	+1,7/-3,7	+21	+2,7/-2,7
Band III	-	-	-	-	+24	+1,7/-3,7	+21	+2,7/-2,7
Band V	-	-	-	-	+24	+1,7/-3,7	+21	+2,7/-2,7
Band VI	-	-	-	-	+24	+1,7/-3,7	+21	+2,7/-2,7

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

NEXT MODIFIED SECTION

5.9 Spectrum emission mask

5.9.1 Definition and applicability

The spectrum emission mask of the UE applies to frequencies, which are between 2,5 MHz and 12,5 MHz away from the UE centre carrier frequency. The out of channel emission is specified relative to the RRC filtered mean power of the UE carrier.

The requirements and this test apply to all types of UTRA for the FDD UE.

5.9.2 Minimum Requirements

The power of any UE emission shall not exceed the levels specified in table 5.9.1.

Table 5.9.1: Spectrum Emission Mask Requirement

Δf in MHz (note 1)	Minimum requirement Band I, II, III, V, VI	Additional requirements Band II and Band V	Measurement bandwidth
2,5 to 3.5	$\left\{-35-15\cdot\left(\frac{\Delta f}{MHz}-2.5\right)\right\}dBc$	-15 dBm	30 kHz (note 2)
3,5 to 7,5	$\left\{-35-1\cdot\left(\frac{\Delta f}{MHz}-3.5\right)\right\}dBc$	-13 dBm	1 MHz (note 3)
7,5 to 8,5	$\left\{-39-10\cdot\left(\frac{\Delta f}{MHz}-7.5\right)\right\}dBc$	-13 dBm	1 MHz (note 3)
8,5 to 12,5	–49 dBc	-13 dBm	1 MHz (note 3)
NOTE 1: Δf is the separation between the carrier frequency and the centre of the measuring filter. NOTE 2: The first and last measurement position with a 30 kHz filter is at Δf equals to 2,515 MHz and 3,485 MHz. NOTE 3: The first and last measurement position with a 1 MHz filter is at Δf equals to 4 MHz and 12 MHz. As a general rule, the resolution bandwidth of the measuring equipment should be equal to the measurement bandwidth. To improve measurement accuracy, sensitivity and efficiency, the resolution bandwidth can be different from the measurement bandwidth. When the resolution bandwidth is smaller than the measurement bandwidth, the result should be integrated over the measurement bandwidth in order to obtain the equivalent noise bandwidth of the measurement bandwidth.			
The lower limit shall be ñ50 dBm/3,84 MHz or which ever is higher.			

The normative reference for this requirement is TS 25.101 [23] clause 6.6.2.1.1.

5.9.3 Test purpose

To verify that the power of UE emission does not exceed the prescribed limits shown in table 5.9.1.

Excess emission increases the interference to other channels or to other systems.

5.9.4 Method of test

5.9.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: low range, mid range, high range; see clause G.2.4.

1) Connect the SS to the UE antenna connector as shown in figure A.1.

2) A call is set up according to the Generic call setup procedure.

3) Enter the UE into loopback test mode and start the loopback test.

See TS 34.108 [3] and TS 34.109 [4] for details regarding generic call setup procedure and loopback test.

5.9.4.2 Procedure

1) Set and send continuously Up power control commands to the UE until the UE output power shall be maximum level.

2) Measure the power of the transmitted signal with a measurement filter of bandwidths according to table 5.9.2. Measurements with an offset from the carrier centre frequency between 2,515 MHz and 3,485 MHz shall use a 30 kHz measurement filter. Measurements with an offset from the carrier centre frequency between 4 MHz and 12 MHz shall use 1 MHz measurement bandwidth and the result may be calculated by integrating multiple 50 kHz or narrower filter measurements. The characteristic of the filter shall be approximately Gaussian (typical spectrum analyzer filter). The centre frequency of the filter shall be stepped in contiguous steps according to table 5.9.2. The measured power shall be recorded for each step.

3) Measure the RRC filtered mean power centered on the assigned channel frequency.

4) Calculate the ratio of the power 2) with respect to 3) in dBc.

5.9.5 Test requirements

The result of clause 5.9.4.2 step 4) shall fulfil the requirements of table 5.9.2.

Table 5.9.2: Spectrum Emission Mask Requirement

Δf in MHz (note 1)	Minimum requirement Band I, II, III, V, VI	Additional requirements Band II and Band V	Measurement bandwidth
2,5 to 3,5	$\left\{-33.5-15\cdot\left(\frac{\Delta f}{MHz}-2.5\right)\right\}dB$	-15 dBm	30 kHz (note 2)
3,5 to 7,5	$\left\{-33.5-1\cdot\left(\frac{\Delta f}{MHz}-3.5\right)\right\}dB$	-13 dBm	1 MHz (note 3)
7,5 to 8,5	$\left\{-37.5-10\cdot\left(\frac{\Delta f}{MHz}-7.5\right)\right\}dB$	-13 dBm	1 MHz (note 3)
8,5 to 12,5	–47,5 dBc	-13 dBm	1 MHz (note 3)
NOTE 1: Δf is the separation between the carrier frequency and the centre of the measuring filter. NOTE 2: The first and last measurement position with a 30 kHz filter is at Δf equals to 2,515 MHz and 3,485 MHz. NOTE 3: The first and last measurement position with a 1 MHz filter is at Δf equals to 4 MHz and 12 MHz. As a general rule, the resolution bandwidth of the measuring equipment should be equal to the measurement bandwidth. To improve measurement accuracy, sensitivity and efficiency, the resolution bandwidth can be different from the measurement bandwidth. When the resolution bandwidth is smaller than the measurement bandwidth, the result should be integrated over the measurement bandwidth in order to obtain the equivalent noise bandwidth of the measurement bandwidth.			
The lower limit shall be ñ48,5 dBm/3,84 MHz or which ever is higher.			

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

NEXT MODIFIED SECTION

5.11 Spurious Emissions

5.11.1 Definition and applicability

Spurious emissions are emissions which are caused by unwanted transmitter effects such as harmonics emission, parasitic emission, intermodulation products and frequency conversion products, but exclude out of band emissions.

The frequency boundary and the detailed transitions of the limits between the requirement for out band emissions and spectrum emissions are based on ITU-R Recommendations SM.329.

The requirements and this test apply to all types of UTRA for the FDD UE.

5.11.2 Minimum Requirements

These requirements are only applicable for frequencies, which are greater than 12.5 MHz away from the UE centre carrier frequency.

Table 5.11.1a: General spurious emissions requirements

Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
9 kHz ≤ f < 150 kHz	1 kHz	–36 dBm
150 kHz ≤ f < 30 MHz	10 kHz	–36 dBm
30 MHz ≤ f < 1 000 MHz	100 kHz	–36 dBm
1 GHz ≤ f < 12,75 GHz	1 MHz	–30 dBm

Table 5.11.1b: Additional spurious emissions requirements

Operating Band	Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
I	925 MHz ≤ f ≤ 935 MHz	100 kHz	-67 dBm (see note)
	935 MHz < f ≤ 960 MHz	100 kHz	-79 dBm (see note)
	1805 MHz ≤ f ≤ 1880 MHz	100 kHz	-71 dBm (see note)
	1893.5 MHz <f<1919.6 MHz	300 kHz	-41 dBm
II	-	-	-
III	925 MHz ≤ f ≤935 MHz	100 kHz	-67 dBm (see note)
	935 MHz < f ≤ 960 MHz	100 kHz	-79 dBm (see note)
	2110 MHz ≤ f ≤ 2170 MHz	3.84 MHz	-60 dBm
V	869 MHz ≤ f ≤ 894 MHz	3.84 MHz	-60 dBm
	1930 MHz ≤ f ≤ 1990 MHz	3.84 MHz	-60 dBm
	2110 MHz ≤ f ≤ 2155 MHz	3.84 MHz	-60 dBm
VI	875 MHz □ f □ 885 MHz	3.84 MHz	-60 dBm
	1893.5 MHz ≤ f≤ 1919.6 MHz	300 kHz	-41 dBm
	2110 MHz □ f □ 2170 MHz	3.84 MHz	-60 dBm
NOTE: The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, up to five measurements with a level up to the applicable requirements defined in table 5.11.1a are permitted for each UARFCN used in the measurement			

The normative reference for this requirement is TS 25.101 [23] clause 6.6.3.1.

5.11.3 Test purpose

To verify that the UE spurious emissions do not exceed described value shown in table 5.11.1a and table 5.11.1b.

Excess spurious emissions increase the interference to other systems.

5.11.4 Method of test

5.11.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: low range, mid range, high range; see clause G.2.4.

1) Connect the SS to the UE antenna connector as shown in figure A.8.
2) A call is set up according to the Generic call setup procedure.
3) Enter the UE into loopback test mode and start the loopback test.

See TS 34.108 [3] and TS 34.109 [4] for details regarding generic call setup procedure and loopback test.

5.11.4.2 Procedure

1) Set and send continuously Up power control commands to the UE until the UE output power shall be maximum level.
2) Sweep the spectrum analyzer (or equivalent equipment) over a frequency range and measure the average power of spurious emission.

5.11.5 Test requirements

The measured average power of spurious emission, derived in step 2), shall not exceed the described value in tables 5.11.2a and 5.11.2b.

These requirements are only applicable for frequencies, which are greater than 12,5 MHz away from the UE centre carrier frequency.

Table 5.11.2a: General spurious emissions test requirements

Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
9 kHz ≤ f < 150 kHz	1 kHz	–36 dBm
150 kHz ≤ f < 30 MHz	10 kHz	–36 dBm
30 MHz ≤ f < 1 000 MHz	100 kHz	–36 dBm
1 GHz ≤ f < 12,75 GHz	1 MHz	–30 dBm

Table 5.11.2b: Additional spurious emissions test requirements

Operating Band	Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
I	925 MHz ≤ f ≤ 935 MHz	100 kHz	-67 dBm (see note)
	935 MHz < f ≤ 960 MHz	100 kHz	-79 dBm (see note)
	1805 MHz ≤ f ≤ 1880 MHz	100 kHz	-71 dBm (see note)
	1893.5 MHz <f<1919.6 MHz	300 kHz	-41 dBm
II	-	-	-
III	925 MHz ≤ f ≤935 MHz	100 kHz	-67 dBm (see note)
	935 MHz < f ≤ 960 MHz	100 kHz	-79 dBm (see note)
	2110 MHz ≤ f ≤ 2170 MHz	3.84 MHz	-60 dBm
V	869 MHz ≤ f ≤ 894 MHz	3.84 MHz	-60 dBm
	1930 MHz ≤ f ≤ 1990 MHz	3.84 MHz	-60 dBm
	2110 MHz ≤ f ≤ 2155 MHz	3.84 MHz	-60 dBm
VI	875 MHz ≤ f ≤ 885 MHz	3.84 MHz	-60 dBm
	1893.5 MHz ≤ f≤ 1919.6 MHz	300 kHz	-41 dBm
	2110 MHz ≤ f ≤ 2170 MHz	3.84 MHz	-60 dBm
NOTE: The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, up to five measurements with a level up to the applicable requirements defined in table 5.11.1a are permitted for each UARFCN used in the measurement			

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T WG1 Meeting #25 **Tdoc ⌘T1-041577**
St Paulís Bay, Malta, November 1st - 5th, 2004

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	435	⌘ **rev**	**-**	⌘ Current version:	**5.5.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects:	UICC apps⌘ [ ]	ME [X]	Radio Access Network [ ]	Core Network [ ]

Title:	⌘	Corrections to TC 8.7.3C UE transmitted power		
Source:	⌘	Nokia		
Work item code:	⌘	TEI	***Date:*** ⌘	2004-10-21
Category:	⌘	**F**	***Release:*** ⌘	REL-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	There have been faulty test case implementations due to unclear test requirements in TC 8.7.3C (UE Transmitted power). Therefore T1 requested RAN4 to clarify the original core requirements and test purpose of TC 8.7.3C. RAN4 provided clarification in their LS to T1 (R4-040559). The purpose of this CR is to make current test requirement in-line with RAN4 original thinking which is that test requirements for UE transmitted power are given as a function of reported values.
Summary of change:	⌘	- An editorís note were added to Section 8.7.3C.2 to say that minimum requirements have to be revised after RAN4 has changed their specification. - Test requirements given in Table 8.7.3C.5 were modified according to R4-040559. The note above the table was deleted as being incorrect and a new Note 1 were added below the table to highlight that even a good UE may report more than 11 values and a faulty UE may report any power value but then it does not fulfill the requirements given for mean power in table or then it will not pass some other test of TS 34.121 e.g. TC 5.2 (Maximum Output Power). - An editorís note were added to section 8.7.3C.5 to say that the given test requirements may have to be revised after RAN4 has changed their specification.
Consequences if not approved:	⌘	Test remains to be ambiguous. There is a risk that SS vendors have faulty test case implementations. This may cause that a good UE is not passing a test case.

Clauses affected:	⌘	Section 8.7.3C			
		Y	N		
Other specs	⌘		X	Other core specifications	⌘

Affected:		X	Test specifications	
		X	O&M Specifications	
Other comments:	⌘	This CR is applicable for UEís supporting Rel-99 or later.		

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Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.7.3C UE transmitted power

8.7.3C.1 Definition and applicability

The UE transmitted power absolute accuracy is defined as difference between the UE reported value and the UE transmitted power measured by test system. The reference point for the UE transmitted power shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.3C.2 Minimum requirements

The measurement period in CELL_DCH state is 1 slot.

Table 8.7.3C.2.1 UE transmitted power absolute accuracy

Parameter	Unit	Accuracy [dB]	
		PUEMAX 24dBm	PUEMAX 21dBm
UE transmitted power=PUEMAX	dBm	+1/-3	±2
UE transmitted power=PUEMAX-1	dBm	+1.5/-3.5	±2.5
UE transmitted power=PUEMAX-2	dBm	+2/-4	±3
UE transmitted power=PUEMAX-3	dBm	+2.5/-4.5	±3.5
PUEMAX-10≤UE transmitted power<PUEMAX-3	dBm	+3/-5	±4

NOTE 1: User equipment maximum output power, PUEMAX, is the maximum output power level without tolerance defined for the power class of the UE in TS 25.101 [1] section 6.2.1.

NOTE 2: UE transmitted power is the reported value.

For each empty slot created by compressed mode, no value shall be reported by the UE L1 for those slots.

The normative reference for this requirement is TS 25.133 [2] clause 9.1.6.

Editorís note: It is expected that RAN WG4 will clarify the minimum requirements in near future as explained in R4-040559 and hence this section needs to be revised in future versions of this specification.

8.7.3C.3 Test purpose

The purpose of this test is to verify that for any reported value of UE Transmitted Power in the range PUEMAX to PUEMAX-10 that the actual UE mean power lies within the range specified in clause 8.7.3C.2.

8.7.3C.4 Method of test

8.7.3C.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect SS to the UE antenna connector as shown in figure A.1.

The test parameters are given in Table 8.7.3C.4.1 and 8.7.3C.4.2 below. In the measurement control information it shall be indicated to the UE that periodic reporting of the UE transmitted power measurement shall be used.

Table 8.7.3C.4.1: General test parameters for UE transmitted power

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in clause C.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	

Table 8.7.3C.4.2: Cell Specific parameters for UE transmitted power

Parameter	Unit	Cell 1
CPICH_Ec/Ior	dB	-10
PCCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DPCH_Ec/Ior	dB	Note1
OCNS_Ec/Ior	dB	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.		

8.7.3C.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters are set up according to table 8.7.3C.4.1 and 8.7.3C.4.2. Set the UE power and Maximum allowed UL TX power to the maximum power for the UE power class.

2) SS shall send continuously during the entire test Up power control commands to the UE.

3) SS shall transmit the MEASUREMENT CONTROL message as defined in the specific message contents below.

4) Decode the UE Transmitted power reported by the UE in the next available MEASUREMENT REPORT message.

5) Measure the mean power of the UE over a period of one timeslot.

6) Steps 4 and 5 shall be repeated 1000 times.

7) Decrease the Maximum allowed UL TX power by 1 dB. The SS shall transmit the PHYSICAL CHANNEL RECONFIGURATION message, as defined in the specific message contents below.

8) SS shall wait for the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE.

9) Repeat from step 4) until the Maximum allowed UL TX Power reaches PUEMAX-10.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -CHOICE Measurement type -UE Internal measurement quantity -Measurement quantity -Filter coefficient -UE Internal reporting quantity -UE Transmitted power -CHOICE mode -UE Rx-Tx time difference -CHOICE report criteria -Amount of reporting -Reporting interval -Measurement Reporting Mode -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -AdditionalMeasurementList	 5 SETUP UE Internal measurement UE Transmitted power 0 TRUE FDD FALSE Periodical reporting criteria Infinity 250 AM RLC Periodical reporting Not Present
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message:

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on PIXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	5
Measured Results	
- CHOICE Measurement	UE Internal measured results
- Choice mode	FDD
- UE Transmitted power	Checked that this IE is present
- UE Rx-Tx report entries	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

PHYSICAL CHANNEL RECONFIGURATION message:

Information Element	Value/Remark
Message Type	
UE Information Elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number -Integrity protection mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. Not Present Not Present Not Present Not Present Not Present CELL_DCH Not Present
CN Information Elements -CN Information info	 Not Present
UTRAN mobility information elements -URA identity	 Not Present
RB information elements -Downlink counter synchronisation info	 Not Present
PhyCH information elements -Frequency info	 Not Present
Uplink radio resources -Maximum allowed UL TX power	 At the first time this value is set to PUEMAX-1. After the second time this value is decreased with 1 dB from previous value.
Downlink radio resources -CHOICE mode -Downlink PDSCH information -Downlink information common for all radio links -Downlink information per radio link list	 FDD Not Present Not Present Not Present

8.7.3C.5 Test requirements

Compare each of the UE transmitted power reports against the following mean power measurement. At least 90% of the mean power measurements for any one value of reported UE transmitted power shall be within the range specified in table 8.7.3C.5.

~~NOTE It is not expected or required that the distribution of UE transmitted power reports is even for the 11 possible reported values.~~

Table 8.7.3C.5 UE transmitted power test requirements

~~Parameter~~	~~Unit~~	~~Mean Power range [dB]~~	
		~~PUEMAX 24dBm~~	~~PUEMAX 21dBm~~
~~UE transmitted power=PUEMAX~~	~~dBm~~	~~+1.7/-3.7~~	~~±2.7~~
~~UE transmitted power=PUEMAX-1~~	~~dBm~~	~~+2.2/-4.2~~	~~±3.2~~
~~UE transmitted power=PUEMAX-2~~	~~dBm~~	~~+2.7/-4.7~~	~~±3.7~~
~~UE transmitted power=PUEMAX-3~~	~~dBm~~	~~+3.2/-5.2~~	~~±4.2~~
~~UE transmitted power=PUEMAX-4~~	~~dBm~~	~~+3.7/-5.7~~	~~±4.7~~
~~UE transmitted power=PUEMAX-5~~	~~dBm~~	~~+3.7/-5.7~~	~~±4.7~~
~~UE transmitted power=PUEMAX-6~~	~~dBm~~	~~+3.7/-5.7~~	~~±4.7~~
~~UE transmitted power=PUEMAX-7~~	~~dBm~~	~~+3.7/-5.7~~	~~±4.7~~
~~UE transmitted power=PUEMAX-8~~	~~dBm~~	~~+3.7/-5.7~~	~~±4.7~~
~~UE transmitted power=PUEMAX-9~~	~~dBm~~	~~+3.7/-5.7~~	~~±4.7~~
~~UE transmitted power=PUEMAX-10~~	~~dBm~~	~~+3.7/-5.7~~	~~±4.7~~

UE reported value	SS measured mean power (X) range [dBm]	
	PUEMAX 24dBm	PUEMAX 21dBm
UE_TX_POWER_104	33-3.7 ≤ X < 34+1.7	33-2.7 ≤ X < 34+2.7
UE_TX_POWER_103	32-3.7 ≤ X < 33+1.7	32-2.7 ≤ X < 33+2.7
•	•	•
•	•	•
•	•	•
UE_TX_POWER_097	26-3.7 ≤ X < 27+1.7	•
UE_TX_POWER_096	25-3.7 ≤ X < 26+1.7	•
UE_TX_POWER_095	24-3.7 ≤ X < 25+1.7	•
UE_TX_POWER_094	23-4.2 ≤ X < 24+2.2	23-2.7 ≤ X < 24+2.7
UE_TX_POWER_093	22-4.7 ≤ X < 23+2.7	22-2.7 ≤ X < 23+2.7
UE_TX_POWER_092	21-5.2 ≤ X < 22+3.2	21-2.7 ≤ X < 22+2.7
UE_TX_POWER_091	20-5.7 ≤ X < 21+3.7	20-3.2 ≤ X < 21+3.2
UE_TX_POWER_090	19-5.7 ≤ X < 20+3.7	19-3.7 ≤ X < 20+3.7
UE_TX_POWER_089	18-5.7 ≤ X < 19+3.7	18-4.2 ≤ X < 19+4.2
UE_TX_POWER_088	•	17-4.7 ≤ X < 18+4.7
UE_TX_POWER_087	•	16-4.7 ≤ X < 17+4.7
UE_TX_POWER_086	•	15-4.7 ≤ X < 15+4.7
•	•	•
•	•	•
•	•	•
UE_TX_POWER_022	-49-5.7 ≤ X < -48+3.7	-49-4.7 ≤ X < -48+4.7
UE_TX_POWER_021	-50-5.7 ≤ X < -49+3.7	-50-4.7 ≤ X < -49+4.7

NOTE 1: Although test requirements are given for all UE reported values, a good UE will likely report values between PUEMAX and PUEMAX - 10 dB. However, even a good UE may report also wider range of values due to errors in TPC command reception and allowed range specified for UE transmit power setting accuracy when Maximum Allowed UL TX Power has been signaled. On the other hand, a faulty UE may report any power value but then it does not fulfill the Table 8.7.3C.5 requirements for mean power or then it will not pass some other tests e.g. TC 5.2 of this specification.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

Editorís note: The table 8.7.3C.5 is made based on current understanding of RAN WG4 LS to T1 (R4-040559). The Table 8.7.3C.5 may need to be revised after RAN WG4 has clarified the core requirements and test case in TS 25.133.

3GPP TSG-T WG1 Meeting #25
St Paulís Bay, Malta, November 1st - 5th, 2004

Tdoc ⌘T1-041579

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	436	⌘ rev	-	⌘	Current version:	5.5.0	⌘

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Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Addition of test tolerances to TC 8.3.4		
Source:	⌘	Nokia		
Work item code:	⌘	TEI	***Date:*** ⌘	2004-10-21
Category:	⌘	**F**	***Release:*** ⌘	REL-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Maximum test system uncertainties, test tolerances and derivation of test requirements have not been defined for TC 8.3.4 (Inter-system Handover from UTRAN to GSM) in Annex F. Test tolerances have not been taken into account in section 8.3.4. TC 8.3.4 contains some minor editorial mistakes that should be corrected.
Summary of change:	⌘	Maximum test system uncertainties have been added into Table F.1.5 Test tolerances have been added into table F.2.4 Derivation of test requirements have been added into table F.4.4 A new table showing cell specific test parameters for GSM cell including the test tolerances has been created (Table 8.3.4.6). This table is now also refered in test procedure. Other minor corrections: Remove extra point from initial conditions; Correct the reference to compressed mode pattern applied to GSM carrier RSSI measurement in Table 8.3.4.3; Replace ìtranstionî with ìtransitionî in step 7 of procedure in section 8.3.4.4.2
Consequences if not approved:	⌘	Test tolerances are not taken into account in test requirements so good UE may fail the test.

Clauses affected:	⌘	Section 8.3.4, Annex F.1.5, Annex F.2.4, Annex F.4.4, Annex I			
		Y	N		
Other specs	⌘		X	Other core specifications	⌘

Affected:		**X**	Test specifications	
		X	O&M Specifications	
Other comments:	⌘	This CR is applicable for UEís supporting Rel-99 or later.		

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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.4 Inter-system Handover from UTRAN FDD to GSM

8.3.4.1 Definition and applicability

The UTRAN to GSM cell handover delay is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission on the channel of the new RAT.

The requirements and this test apply to the combined FDD and GSM UE.

8.3.4.2 Minimum requirement

The hard handover delay shall be less than indicated in Table 8.3.4.1. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95 %.

The hard handover delay as listed in table 8.3.4.1 equals the RRC procedure delay plus the interruption time listed in table 8.3.4.2.

Table 8.3.4.1: FDD/GSM handover - handover delay

UE synchronisation status	handover delay [ms]
The UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	90
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	190

Table 8.3.4.2: FDD/GSM handover - interruption time

Synchronisation status	Interruption time [ms]
The UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	40
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	140

The normative reference for this requirement is TS 25.133 [2] clauses 5.4.2 and A.5.4.

8.3.4.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.4.4 Method of test

8.3.4.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

[Editor's Note: Annex G.2 must be specified also for GSM; for instance as a reference to TS 51.010-1 clause A1.2]

The test parameters are given in table 8.3.4.3, 8.3.4.4 and 8.3.4.5 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used.. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

The UTRAN shall send a HANDOVER FROM UTRAN COMMAND with activation time "now". In the GSM Handover command contained in that message, the IE starting time shall not be included. The RRC HANDOVER FROM UTRAN COMMAND message shall be sent to the UE. The start of T3 is defined as the end of the last TTI, containing the HO command.

The requirements are also applicable for a UE not requiring compressed mode, in which case no compressed mode pattern should be sent for the parameters specified in table 8.3.4.3.

Table 8.3.4.3: General test parameters for Correct reporting of GSM neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 34.121 clause C.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns - GSM carrier RSSI measurement - GSM Initial BSIC identification - GSM BSIC re-confirmation		 DL Compressed mode reference pattern 2 in Set 2 Pattern 2 Pattern 2	Only applicable for UE requiring compressed mode patterns As specified in ~~TS 34.121 [1]~~ clause C.5, table C.5.2 As specified in clause TS 25.133 [2] 8.1.2.5.2.1 table 8.7. As specified in clause TS 25.133 [2] 8.1.2.5.2.2 table 8.8.
Active cell		Cell 1	
Inter-RAT measurement quantity		GSM Carrier RSSI	
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for event 3B and 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	NOTE: See Annex I for cell information . The information is sent before the compressed mode patterns starts.
N Identify abort		66	Taken from TS 25.133 [2] 8.1.2.5.2.1 table 8.7.
T Reconfirm abort		5.5	Taken from TS 25.133 [2] 8.1.2.5.2.2 table 8.8.
T1	s	20	
T2	s	5	
T3	s	5	

Table 8.3.4.4: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)
		T1, T2, T3
CPICH_Ec/Ior	dB	-10
PCCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DCH_Ec/Ior	dB	Note 1
OCNS_Ec/Ior	dB	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.		

Table 8.3.4.5: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2, T3
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-85	-75

8.3.4.4.2 Procedure

1) The RF parameters for cell 1 are set up according to T1 in Table 8.3.4.4.

2) The UE is switched on

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 and compressed mode parameters are configured as in the table 8.3.4.3. The compressed mode shall remain inactive.

4) The RF parameters for cell 2 are set up according to T1 in Table 8.3.4.6 and the SS configures a traffic channel

5) The start of T1 is TTI aligned

6) The SS shall transmit a MEASUREMENT CONTROL message to cell 1

7) At the T1-T2 transition, the SS shall switch the power of cell 2 as in Table 8.3.4.6

8) The UE shall transmit a MEASUREMENT REPORT message triggered by event 3C

9) The SS shall transmit a HANDOVER FROM UTRAN COMMAND message with activation time "now" and indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. The start of T3 is defined as the end of the last TTI, containing the HO command.

10) UE shall transmit a burst on the traffic channel of cell 2 implying that it has switched to the GSM cell. The UE sends a HANDOVER ACCESS message. If the UE transmits access bursts on the new DCCH of the target cell less than 90 ms from the beginning of time period T3, then the number of successful tests is increased by one.

[Editor's note: TS 34.108, 7.3.4 shall specify the messages HANDOVER ACCESS, PHYSICAL INFORMATION, SABM, UA and HANDOVER COMPLETE]

11) At the end of T3 the UE is switched off. Any timing information of cell 2 is deleted in the UE.

12) Repeat step 1-11 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (step 5):

Information Element/Group name	**Value/Remark**
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
-Measurement quantity for UTRAN quality estimate (10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH Ec/N0
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Required
-Inter-RAT reporting quantity (10.3.7.32)	
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT
-Maximum number of reported cells	2
-CHOICE report criteria	Inter-RAT measurement reporting criteria
-Inter-RAT measurement reporting criteria (10.3.7.30)	
-Parameters required for each event	1
-Inter-RAT event identity (10.3.7.24)	Event 3C
-Threshold own system	Not Present
-W	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT
-Maximum number of reported cells	2
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Active (for all three patterns specified in table 8.3.4.3)

HANDOVER FROM UTRAN COMMAND message (step 8):

Information Element	Value/remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number -Activation time	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. "now"
RB information elements -RAB information list -RAB Info	 1 Not present
Other information elements -CHOICE System type -Frequency Band -GSM message -Single GSM message -GSM message List	 GSM GSM/DCS 1800 Band [TBD] GSM HANDOVER COMMAND formatted as BIT STRING(1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of TS 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 3

MEASUREMENT REPORT message for Inter-RAT test cases

This message is common for all inter RAT-frequency test cases in clause 8.7 and is described in Annex I.

8.3.4.5 Test requirements

Table 8.3.4.6: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 2), test requirements

Parameter	Unit	Cell 2 (GSM)	
		T1	T2, T3
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-85	-74

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95 %.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

F.1.5 Requirements for support of RRM

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

<table>
<tr><th>Clause</th><th>Maximum Test System Uncertainty</th><th>Derivation of Test System Uncertainty</th></tr>
<tr><td>8.2 Idle Mode Tasks</td><td></td><td></td></tr>
<tr><td>8.2.2 Cell Re-Selection</td><td></td><td></td></tr>
<tr><td rowspan="2">8.2.2.1 Scenario 1: Single carrier case</td><td>During T1 and T2:
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{oc} ±1.0 dB

During T1:
I_{or} (2) ±0.7 dB

I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB

During T2:
I_{or} (1) ±0.7 dB

I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB</td><td></td></tr>
<tr><td colspan="2">Assumptions:
a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2.
b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other.
c) The relative uncertainties for Ior(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
e) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
f) The absolute uncertainty of Ior(2) at T1 and the relative uncertainty of Ior(1, 3, 4, 5, 6), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(1) at T2 and the relative uncertainty of Ior(2, 3, 4, 5, 6), are uncorrelated to each other.
An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].</td></tr>
</table>

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2.2.2 Scenario 2: Multi carrier case	Channel 1 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (1) ±1.0 dB Channel 1 during T1: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 1 during T2: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 2 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (2) ±1.0 dB Channel 2 during T1: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB Channel 2 during T2: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
	Assumptions: a) to e): Same as for the one-frequency test 8.2.2.1. f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(2) and the relative uncertainty of Ior(5, 6), are uncorrelated to each other. g) The absolute uncertainties for Ior(1) and Ior(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). h) The absolute uncertainties for Ioc(1) and Ioc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2.3 UTRAN to GSM Cell Re-Selection		
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc/RXLEV based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB.
8.2.3.2 Scenario 2: Only UTRA level changed	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.3.1
8.2.4 FDD/TDD cell re-selection	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.3 UTRAN Connected Mode Mobility		
8.3.1 FDD/FDD Soft Handover	During T1 and T2/T3/T4/T5/T6: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB Relative delay of paths received from cell 2 with respect to cell 1: ±0.5 chips During T1: Already covered above During T2/T3/T4/T5/T6: I_{or} (2) relative to I_{or} (1) ±0.3 dB	

<table>
<tr><th>Clause</th><th>Maximum Test System Uncertainty</th><th>Derivation of Test System Uncertainty</th></tr>
<tr><td></td><td colspan="2">Assumptions:
a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2.

b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other.

c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).

d) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).

e) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2), are uncorrelated to each other.

An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].</td></tr>
<tr><td>8.3.2 FDD/FDD Hard Handover</td><td></td><td></td></tr>
<tr><td rowspan="2">8.3.2.1 Handover to intra-frequency cell</td><td>During T1 and T2 / T3:
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{or} (1) ±0.7 dB
I_{oc} ±1.0 dB

During T1:
Already covered above

During T2 / T3:
I_{or} (2) relative to I_{or} (1) ±0.3 dB</td><td></td></tr>
<tr><td colspan="2">Assumptions:
a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2.

b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other.

c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).

d) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).

e) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2), are uncorrelated to each other.

An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].</td></tr>
</table>

<table>
<tr><th>Clause</th><th>Maximum Test System Uncertainty</th><th>Derivation of Test System Uncertainty</th></tr>
<tr><td rowspan="2">8.3.2.2 Handover to inter-frequency cell</td><td>Channel 1 during T1 and T2 / T3:
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{or} (1) ±0.7 dB
I_{oc} (1) ±1.0 dB

Channel 2 during T1 and T2 / T3:
I_{oc} (2) ±1.0 dB

Channel 2 during T1:
Already covered above

Channel 2 during T2 / T3:
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{or} (2) ±0.7 dB</td><td></td></tr>
<tr><td colspan="2">Assumptions:
a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2.
b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other.
c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
d) The uncertainty for Ioc(n) and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
e) The absolute uncertainties for Ior(1) and Ior(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
f) The absolute uncertainties for Ioc(1) and Ioc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].</td></tr>
<tr><td>8.3.3 FDD/TDD Handover</td><td>TBD</td><td></td></tr>
</table>

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.4 Inter-system Handover from UTRAN FDD to GSM	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB ~~TBD~~	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc/RXLEV based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB.
8.3.5 Cell Re-selection in CELL_FACH		
8.3.5.1 One frequency present in the neighbour list	During T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} ±1.0 dB During T1: I_{or} (2) ±0.7 dB I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB During T2: I_{or} (1) ±0.7 dB I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) The relative uncertainties for Ior(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). f) The absolute uncertainty of Ior(2) at T1 and the relative uncertainty of Ior(1, 3, 4, 5, 6), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(1) at T2 and the relative uncertainty of Ior(2, 3, 4, 5, 6), are uncorrelated to each other. An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5.2 Two frequencies present in the neighbour list	Channel 1 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (1) ±1.0 dB Channel 1 during T1: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 1 during T2: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 2 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (2) ±1.0 dB Channel 2 during T1: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB Channel 2 during T2: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
	Assumptions: a) to e): Same as for the one-frequency test 8.3.5.1. f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(2) and the relative uncertainty of Ior(5, 6), are uncorrelated to each other. g) The absolute uncertainties for Ior(1) and Ior(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). h) The absolute uncertainties for Ioc(1) and Ioc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5.3 Cell Re-selection to GSM	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc/RXLEV based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB.
8.3.6 Cell Re-selection in CELL_PCH		
8.3.6.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.3.7 Cell Re-selection in URA_PCH		
8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control		
8.4.1 RRC Re-establishment delay	Settings. $\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the CPICH_Ec/Ior ratio. The absolute error of the AWGN is specified as 1.0 dB

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.4.2 Random Access	Settings. $\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{AICH\_E_c}{I_{or}}$ ±0.1 dB Measurements: Power difference. ± 1dB Maximum Power: same as 5.5.2	0.1 dB uncertainty in AICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the AICH_Ec/Ior ratio. The absolute error of the AWGN is specified as 1.0 dB Power difference: Assume symmetric meas error ±1.0 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error. Maximum Power: Assume asymmetric meas error -1.0 dB / 0.7 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error, and +0.7 dB for upper limit
8.4.3 Transport format combination selection in UE	$\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in DPCH_Ec ratio
8.5 Timing and Signalling Characteristics		
8.5.1 UE Transmit Timing	I_{or} ±1.0 dB I_{or1}/I_{or2} ±0.3 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in DPCH_Ec ratio 0.3 dB uncertainty in Ior1/Ior2 based on power meter measurement after the combiner The absolute error of the Ior is specified as 1.0 dB.
8.6 UE Measurements Procedures		
8.6.1 FDD intra frequency measurements		
8.6.1.1 Event triggered reporting in AWGN propagation conditions (R99)	During T1/T4 and T2/T3: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB During T1/T4 only: Already covered above During T2/T3 only: I_{or} (2) relative to I_{or} (1) ±0.3 dB	

<table>
<tr><th>Clause</th><th>Maximum Test System Uncertainty</th><th>Derivation of Test System Uncertainty</th></tr>
<tr><td>8.6.1.1 A Event triggered reporting in AWGN propagation conditions (Rel-4 and later)</td><td><u>During T1/T3 and T2:</u>
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{or} (1) ±0.7 dB
I_{oc} ±1.0 dB

<u>During T1/T3 only:</u>
Already covered above

<u>During T2 only:</u>
I_{or} (2) relative to I_{or} (1) ±0.3 dB</td><td></td></tr>
<tr><td>8.6.1.1 and 8.6.1.1A</td><td colspan="2">Assumptions:
a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2.
b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other.
c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
d) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
e) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2), are uncorrelated to each other.
An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].</td></tr>
<tr><td rowspan="2">8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)</td><td><u>During T0 to T6:</u>
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{or} (1) ±0.7 dB
I_{oc} ±1.0 dB

<u>During T1/T2, T3 and T6:</u>
I_{or} (3) relative to I_{or} (1) ±0.3 dB

<u>During T3, T4/T5 and T6:</u>
I_{or} (2) relative to I_{or} (1) ±0.3 dB</td><td></td></tr>
<tr><td colspan="2">Assumptions:
a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [4], with a coverage factor of k=2.
b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other.
c) The relative uncertainties for Ior(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
e) The uncertainty for Ioc and Ior(1) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2, 3), are uncorrelated to each other.</td></tr>
<tr><td>8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)</td><td colspan="2">TBD</td></tr>
<tr><td>8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition</td><td>TBD</td><td></td></tr>
</table>

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD	
8.6.2 FDD inter frequency measurements		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD	
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD	
8.6.3 TDD measurements		
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD	
8.6.4 GSM Measurement	TBD	
8.7 Measurements Performance Requirements		
8.7.1 CPICH RSCP		
8.7.1.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.1
8.7.1.2 Inter frequency measurement accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.7.2 CPICH Ec/Io		
8.7.2.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.1
8.7.2.2 Inter frequency measurement accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.7.3 UTRA Carrier RSSI	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc1/Ioc2 based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.3A GSM Carrier RSSI	TBD	
8.7.3C UE Transmitted power	Mean power measurement ±0,7 dB	Downlink parameters are unimportant.
8.7.4 SFN-CFN observed time difference		

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.7.4.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Actual SFN-CFN observed time difference: ±0.5 chips	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.4.2 Inter frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Actual SFN-CFN observed time difference: ±0.5 chips	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.5.1 SFN-SFN observed time difference type 1	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Actual SFN-SFN observed time difference type 1: ±0.5 chips	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.6 UE Rx-Tx time difference	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Rx-Tx Timing Accuracy ±0.5 chip	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB.
8.7.8 P-CCPCH RSCP	TBD	

F.2.4 Requirements for support of RRM

Table F.2.4: Test Tolerances for Radio Resource Management Tests

Clause	Test Tolerance
8.2 Idle Mode Tasks	
8.2.2 Cell Re-Selection	
8.2.2.1 Scenario 1: Single carrier case	During T1 and T2: +0.60 dB for all Cell 1 and 2 Ec/Ior ratios -0.50 dB for all Cell 3, 4 ,5, 6 Ec/Ior ratios +0.03 dB for Ior(3, 4, 5, 6) During T1: -0.27 dB for Ior(1) +0.13 dB for Ior(2) During T2: +0.13 dB for Ior(1) -0.27 dB for Ior(2)
8.2.2.2 Scenario 2: Multi carrier case	Channel 1 during T1 and T2: +0.70 dB for all Cell 1 Ec/Ior ratios -0.80 dB for all Cell 3 and 4 Ec/Ior ratios Channel 1 during T1: -0.01 dB for Ior(1) -0.01 dB for Ior(3, 4) No change for Ioc(1) Channel 1 during T2: +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.80 dB for Ioc(1) Channel 2 during T1 and T2: +0.70 dB for all Cell 2 Ec/Ior ratios -0.80 dB for all Cell 5 and 6 Ec/Ior ratios Channel 2 during T1: +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.80 dB for Ioc(2) Channel 2 during T2: -0.01 dB for Ior(2) -0.01 dB for Ior(5, 6) No change for Ioc(2)
8.2.3 UTRAN to GSM Cell Re-Selection	
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.2.3.2 Scenario 2: Only UTRA level changed	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.2.4 FDD/TDD cell re-selection	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc1/Ioc2
8.3 UTRAN Connected Mode Mobility	

Clause	Test Tolerance
8.3.1 FDD/FDD Soft Handover	During T1 and T2/T3/T4/T5/T6: +0.70 dB for all Cell 1 Ec/Ior ratios Relative delay: {ñ147.5 Ö +147.5} chips During T1: Already covered above During T2/T3/T4/T5/T6: +0.70 dB for all Cell 2 Ec/Ior ratios
8.3.2 FDD/FDD Hard Handover	
8.3.2.1 Handover to intra-frequency cell	During T1 and T2 / T3: +0.70 dB for all Cell 1 Ec/Ior ratios During T1: Already covered above During T2 / T3: +0.70 dB for all Cell 2 Ec/Ior ratios
8.3.2.2 Handover to inter-frequency cell	Channel 1 during T1 and T2 / T3: +0.80 dB for all Cell 1 Ec/Ior ratios Channel 2 during T1: Not applicable Channel 2 during T2 / T3: +0.80 dB for all Cell 2 Ec/Ior ratios
8.3.3 FDD/TDD Handover	TBD
8.3.4 Inter-system Handover form UTRAN FDD to GSM	~~TBD~~During T2 and T3: + 1 dB for RXLEV
8.3.5 Cell Re-selection in CELL_FACH	
8.3.5.1 One frequency present in the neighbour list	During T1 and T2: +0.60 dB for all Cell 1 and 2 Ec/Ior ratios -0.50 dB for all Cell 3, 4 ,5, 6 Ec/Ior ratios +0.03 dB for Ior(3, 4, 5, 6) During T1: -0.27 dB for Ior(1) +0.13 dB for Ior(2) During T2: +0.13 dB for Ior(1) -0.27 dB for Ior(2)

Clause	Test Tolerance
8.3.5.2 Two frequencies present in the neighbour list	Channel 1 during T1 and T2: +0.60 dB for all Cell 1 Ec/Ior ratios -0.70 dB for all Cell 3 and 4 Ec/Ior ratios Channel 1 during T1: +0.05 dB for Ior(1) +0.05 dB for Ior(3, 4) No change for Ioc(1) Channel 1 during T2: +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.60 dB for Ioc(1) Channel 2 during T1 and T2: +0.60 dB for all Cell 2 Ec/Ior ratios -0.70 dB for all Cell 5 and 6 Ec/Ior ratios Channel 2 during T1: +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.60 dB for Ioc(2) Channel 2 during T2: +0.05 dB for Ior(2) +0.05 dB for Ior(5, 6) No change for Ioc(2)
8.3.5.3 Cell Re-selection to GSM	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.3.6 Cell Re-selection in CELL_PCH	
8.3.6.1 One frequency present in the neighbour list	Same as 8.2.2.1
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2
8.3.7 Cell Re-selection in URA_PCH	
8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2
8.4 RRC Connection Control	
8.4.1 RRC Re-establishment delay	0 dB for $\hat{I}_{or}/I_{oc}$ 0 dB for any_Ec/Ior Zero TT is applied, as level settings are not critical with respect to the outcome of the test.
8.4.2 Random Access	Settings: 0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for AICH_Ec/Ior Measurements: Power difference: ± 1dB Maximum Power: -1dB / +0.7dB
8.4.3 Transport format combination selection in UE	0 dB for DPCH_Ec/Ior
8.5 Timing and Signalling Characteristics	
8.5.1 UE Transmit Timing	TBD
8.6 UE Measurements Procedures	
8.6.1 FDD intra frequency measurements	

Clause	Test Tolerance
8.6.1.1 Event triggered reporting in AWGN propagation conditions (R99)	During T1/T4 and T2/T3: +0.70 dB for all Cell 1 Ec/Ior ratios During T1/T4 only: Already covered above During T2/T3 only: +0.70 dB for all Cell 2 Ec/Ior ratios
8.6.1.1 A Event triggered reporting in AWGN propagation conditions (Rel-4 and later)	During T1/T3 and T2: +0.70 dB for all Cell 1 Ec/Ior ratios During T1/T3 only: Already covered above During T2 only: +0.70 dB for all Cell 2 Ec/Ior ratios
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)	During T0 to T6: +0.70 dB for all Cell 1 Ec/Ior ratios +0.70 dB for all Cell 2 Ec/Ior ratios +0.70 dB for all Cell 3 Ec/Ior ratiosTBD
8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)	TBD
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD
8.6.2 FDD inter frequency measurements	
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD
8.6.3 TDD measurements	
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD
8.7 Measurements Performance Requirements	TBD
8.7.1 CPICH RSCP	
8.7.1.1 Intra frequency measurements accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 1.0 dB for Ioc
8.7.1.2 Inter frequency measurement accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc1/Ioc2 1.0 dB for Ioc
8.7.2 CPICH Ec/Io	
8.7.2.1 Intra frequency measurements accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.7.2.2 Inter frequency measurement accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.7.3 UTRA Carrier RSSI	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc
8.7.3A GSM Carrier RSSI	TBD
8.7.3B Transport channel BLER	TBD
8.7.3C UE Transmitted power	0.7 dB for mean power measurement by test system

Clause	Test Tolerance
8.7.4 SFN-CFN observed time difference	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc ±0.5 chips for the actual SFN-CFN observed time difference
8.7.5.1 SFN-SFN observed time difference type 1	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc ±0.5 chips for the actual SFN-SFN observed time difference type 1
8.7.6 UE Rx-Tx time difference	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc 0.5 chip for Rx-Tx Timing Accuracy
8.7.7 Observed time difference to GSM cell	TBD
8.7.8 P-CCPCH RSCP	TBD

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2 Idle Mode Tasks			
8.2.2 Cell Re-Selection			
8.2.2.1 Scenario 1: Single carrier case	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 and T2: Cells 1 and 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Cells 3, 4, 5, 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Ior(3, 4, 5, 6) = -69.73 dBm	During T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for Ior(3, 4, 5, 6)	During T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ior(3, 4, 5, 6) + TT
	During T1: Ior(1) = -62.73 dBm Ior(2) = -59.73 dBm	During T1: -0.27 dB for Ior(1) +0.13 dB for Ior(2)	During T1: Ior(1) + TT Ior(2) + TT
	During T2: Ior(1) = -59.73 dBm Ior(2) = -62.73 dBm	During T2: +0.13 dB for Ior(1) -0.27 dB for Ior(2)	During T2: Ior(1) + TT Ior(2) + TT
8.2.2.2 Scenario 2: Multi carrier case	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	Channel 1 during T1 and T2: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Cells 3 and 4: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	Channel 1 during T1 and T2: +0.70 dB +0.70 dB +0.70 dB +0.70 dB -0.80 dB -0.80 dB -0.80 dB -0.80 dB	Channel 1 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 1 during T1: Ior(1) = -73.39 dBm Ior(3, 4) = -77.39 dBm Ioc(1) = -70.00 dBm	Channel 1 during T1: -0.01 dB for Ior(1) -0.01 dB for Ior(3,4) 0.00 dB for Ioc(1)	Channel 1 during T1: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	<u>Channel 1 during T2:</u> Ior(1) = -67.75 dBm Ior(3, 4) = -74.75 dBm Ioc(1) = -70.00 dBm	<u>Channel 1 during T2:</u> +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.80 dB for Ioc(1)	<u>Channel 1 during T2:</u> Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT
	<u>Channel 2 during T1 and T2:</u> Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Cells 5 and 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	<u>Channel 2 during T1 and T2:</u> +0.70 dB +0.70 dB +0.70 dB +0.70 dB -0.80 dB -0.80 dB -0.80 dB -0.80 dB	<u>Channel 2 during T1 and T2:</u> Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	<u>Channel 2 during T1:</u> Ior(2) = -67.75 dBm Ior(5, 6) = -74.75 dBm Ioc(2) = -70.00 dBm	<u>Channel 2 during T1:</u> +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.80 dB for Ioc(2)	<u>Channel 2 during T1:</u> Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
	<u>Channel 2 during T2:</u> Ior(2) = -73.39 dBm Ior(5, 6) = -77.39 dBm Ioc(2) = -70.00 dBm	<u>Channel 2 during T2:</u> -0.01 dB for Ior(2) -0.01 dB for Ior(5,6) 0.00 dB for Ioc(2)	<u>Channel 2 during T2:</u> Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
8.2.3 UTRAN to GSM Cell Re-Selection			
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 0 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = - 5 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ - TT Ior/Ioc = -5.3 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2.3.2 Scenario 2: Only UTRA level changed	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 20 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 20.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = -9 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ - TT Ior/Ioc = -9.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -10.1 dB:
8.2.4 FDD/TDD cell re-selection	TBD		
8.3 UTRAN Connected Mode Mobility	TBD		
8.3.1 FDD/FDD Soft Handover	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	<u>During T1 and T2/T3/T4/T5/T6:</u> Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Relative delay of paths received from cell 2 with respect to cell 1 = {-148 Ö 148} chips	<u>During T1 and T2/T3/T4/T5/T6:</u> +0.70 dB +0.70 dB +0.70 dB +0.70 dB 0.5 chips	<u>During T1 and T2/T3/T4/T5/T6:</u> Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT {-148+TT Ö 148-TT} chips
	<u>During T1:</u> Already covered above	<u>During T1:</u> Covered above	<u>During T1:</u> Already covered above
	<u>During T2/T3/T4/T5/T6:</u> Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	<u>During T2/T3/T4/T5/T6:</u> +0.70 dB +0.70 dB +0.70 dB +0.70 dB	<u>During T2/T3/T4/T5/T6:</u> Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.3.2 FDD/FDD Hard Handover			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.2.1 Handover to intra-frequency cell	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 and T2 / T3: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1 / T2 / T3: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T1 and T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	During T1: Already covered above	During T1: Covered above	During T1: Already covered above
	During T2 / T3: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T2 / T3: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.3.2.2 Handover to inter-frequency cell	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	Channel 1 during T1 and T2 / T3: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	Channel 1 during T1 and T2 / T3: +0.80 dB +0.80 dB +0.80 dB +0.80 dB	Channel 1 during T1 and T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 2 during T1: Not applicable	Channel 2 during T1: Not applicable	Channel 2 during T1: Not applicable
	Channel 2 during T2 / T3: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	Channel 2 during T2 / T3: +0.80 dB +0.80 dB +0.80 dB +0.80 dB	Channel 2 during T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.3.3 FDD/TDD Handover	TBD		
8.3.4 Inter-system Handover form UTRAN FDD to GSM	During T2 and T3 RXLEV=-75 dBm ~~TBD~~	During T2 and T3: + 1 dB for RXLEV	During T2 and T3 RXLEV + TT Only RXLEV during T2 and T3 is a critical parameter. UE measurement accuracy for GSM Carrier RSSI is ±4 dB in this test. During T2 and T3 : measured GSM Carrier RSSI ± uncertainty of RXLEV setting shall be above ñ80 dBm (Threshold for GSM). => TT=+1 dB for RXLEV
8.3.5 Cell Re-selection in CELL_FACH			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.5.1 One frequency present in the neighbour list	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 and T2: Cells 1 and 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 3, 4, 5, 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Ior(3, 4, 5, 6) = -69.73 dBm	During T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for Ior(3, 4, 5, 6)	During T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ior(3, 4, 5, 6) + TT
	During T1: Ior(1) = -62.73 dBm Ior(2) = -59.73 dBm	During T1: -0.27 dB for Ior(1) +0.13 dB for Ior(2)	During T1: Ior(1) + TT Ior(2) + TT
	During T2: Ior(1) = -59.73 dBm Ior(2) = -62.73 dBm	During T2: +0.13 dB for Ior(1) -0.27 dB for Ior(2)	During T2: Ior(1) + TT Ior(2) + TT
8.3.5.2 Two frequencies present in the neighbour list	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	Channel 1 during T1 and T2: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 3 and 4: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB	Channel 1 during T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Channel 1 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 1 during T1: Ior(1) = -71.85 dBm Ior(3, 4) = -76.85 dBm Ioc(1) = -70.00 dBm	Channel 1 during T1: +0.05 dB for Ior(1) +0.05 dB for Ior(3,4) 0.00 dB for Ioc(1)	Channel 1 during T1: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 1 during T2: Ior(1) = -67.75 dBm Ior(3, 4) = -74.75 dBm Ioc(1) = -70.00 dBm	Channel 1 during T2: +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.60 dB for Ioc(1)	Channel 1 during T2: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT
	Channel 2 during T1 and T2: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 5 and 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB	Channel 2 during T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Channel 2 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 2 during T1: Ior(2) = -67.75 dBm Ior(5, 6) = -74.75 dBm Ioc(2) = -70.00 dBm	Channel 2 during T1: +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.60 dB for Ioc(2)	Channel 2 during T1: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
	Channel 2 during T2: Ior(2) = -71.85 dBm Ior(5, 6) = -76.85 dBm Ioc(2) = -70.00 dBm	Channel 2 during T2: +0.05 dB for Ior(2) +0.05 dB for Ior(5,6) 0.00 dB for Ioc(2)	Channel 2 during T2: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
8.3.5.3 Cell Re-selection to GSM	During T1: $\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 0 dB Ioc/RXLEV = 20	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	$\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB: Ioc/RXLEV = 20.3

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	During T2: $\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = - 5 dB Ioc/RXLEV = 5	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	$\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ - TT Ior/Ioc = -5.3 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB: Ioc/RXLEV = 4.7
8.3.6 Cell Re-selection in CELL_PCH			
8.3.6.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 10.27 dB Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ior/Ioc = 10.57 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 2.2 dB Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = 2.5 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.3.7 Cell Re-selection in URA_PCH			
8.3.7.1 One frequency present in the	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
neighbour list			
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control			
8.4.1 RRC Re-establishment delay	TBD		
8.4.1.1 Test 1	Cell 1, T1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB DCH_Ec/Ior = -17 dB Ior/Ioc = 2.39 dB Cell 1, T2: Ior/Ioc = -infinity Cell 2, T1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Ior/Ioc = 4.39 dB Cell 2, T2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Ior/Ioc = 0.02 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc	Level settings in either direction are not critical with respect to the outcome of the test.
8.4.1.2 Test 2	Cell 1, T1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB DCH_Ec/Ior = -17 dB Ior/Ioc = -3.35 dB Cell 1, T2: Ior/Ioc = -infinity Cell 2, T1: Ior/Ioc = -infinity Cell 2, T2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Ior/Ioc = 0.02 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc	Level settings in either direction are not critical with respect to the outcome of the test.
8.4.2 Random Access	RACH power difference nominal 3dB ± 2dB UE setting uncertainty	Measurement TT:Power difference ± 1dBMaximum Power-1dB / +0.7dB	Test parameter settings unchanged.Power measurement:Upper limit +TT Lower limit -TT
8.4.3 Transport format combination selection in UE	DL Power control is ON so DPCH_Ec/Ior depends on TPC commands sent by UE	0 dB for DPCH_Ec/Ior	No test requirements for DPCH_Ec/Ior

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.5 Timing and Signalling Characteristics	TBD		
8.5.1 UE Transmit Timing	TBD		
8.6 UE Measurements Procedures			
8.6.1 FDD intra frequency measurements			
8.6.1.1 Event triggered reporting in AWGN propagation conditions (R99)	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 to T4: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1 to T4: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T1 to T4: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	During T1/T4 only : Already covered above	During T1/T4 only: Covered above	During T1/T4 only: Already covered above
	During T2/T3 only: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T2/T3 only: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T2/T3 only: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.1 A Event triggered reporting in AWGN propagation conditions (Rel-4 and later)	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 / T2 / T3: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1 / T2 / T3: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T1 / T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	During T1/T3 only : Already covered above	During T1/T3 only: Covered above	During T1/T3 only: Already covered above
	During T2 only: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T2 only: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T2 only: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
propagation condition (R99)	During T0 to T6: Cell 1, Cell 2 and Cell 3: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T0 to T6: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T0 to T6: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)	TBD	TBD	TBD
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD		
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD		
8.6.2 FDD inter frequency measurements	TBD		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD		
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD		
8.6.3 TDD measurements	TBD		
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD		
8.7 Measurements Performance Requirements	TBD		
8.7.1 CPICH RSCP			
8.7.1.1 Intra frequency measurements accuracy	see table 8.7.1.1.1.1 andtable 8.7.1.1.1.2	±1 dB for Ioc±0.3 dB for Ior/Ioc±0.1dB forÖ .._Ec/Ior	Any TT applied to the nominal setting shall fulfil:Test 1 (absolute and relative): Io shall not go below -69dBm Test 2(absolute and relative): Io shall not go above -50 dBmTest 3 (absolute and relative): Io shall not go below -94 dBm Ior/Ioc + TTTT on top of UE measurement accuracy:Absolute±1.0 dB for Ioc±0.3 dB for Ior/Ioc ±0.1dB for CPICH_Ec/Ior ∑ 1.4dBRelative±0.3 dB for Ior/Ioc (cell1)±0.3 dB for Ior/Ioc (cell2)±0.1dB for CPICH_Ec/Ior (cell1)±0.1dB for CPICH_Ec/Ior (cell2)∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.1.2 Inter frequency measurement accuracy	See table 8.7.1.2.1.1 andtable 8.7.1.2.1.2	±1 dB for Ioc±0.3 dB for Ioc1/Ioc2±0.3 dB for Ior/Ioc±0.1dB for Ö .._Ec/Ior	Any TT applied to the nominal setting shall fulfil:Test 1: Io shall not go above -50 dBmTest 2: Io shall not go below -94 dBmIor/Ioc + TTTT on top of UE measurement accuracy:±0.3 dB for Ioc1/Ioc2±0.3 dB for Ior/Ioc (cell1)±0.3 dB for Ior/Ioc (cell2)±0.1dB for CPICH_Ec/Ior (cell1)±0.1dB for CPICH_Ec/Ior (cell2)∑ 1.1 dB
8.7.2 CPICH Ec/Io			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2.1 Intra frequency measurements accuracy	table 8.7.2.1.1.1 and table 8.7.2.1.1.2	±1 dB for Ioc ±0.3 dB for Ior/Ioc ±0.1dB for Ö .._Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1(absolute and relative): Io shall not go above -50 dBm Test 2 (absolute and relative): Io shall not go below -87dBm Test 3 (absolute and relative): Io shall not go below -94 dBm CPICH Ec/Io shall stay in the UE accuracy ranges Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute ±0.3 dB for Ior/Ioc ±0.1dB for CPICH_Ec/Ior ∑ 0.4dB Relative Ioc1=Ioc2 ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2.2 Inter frequency measurement accuracy	table 8.7.2.2.2.1 and table 8.7.2.2.2.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Ior/Ioc ±0.1dB for Ö .._Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1: Io shall not go above -50 dBm Test 2: Io shall not go below -87 dBm Test 3: Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Ioc1=Ioc2. ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8 dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.3 UTRA Carrier RSSI	Table 8.7.3.1.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Îor/Ioc	Any TT applied to the nominal setting shall fulfil: Test 1 (absolute): Io shall not go above -50 dBm Test 2 (absolute): Io shall not go below -69 dBm Test 3 (absolute and relative): Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute tests: Test 1: Max TT= Io_{max} ñ $Io_{nominal}$ $Io_{nominal}$ = -51.15 dBm Io_{max} = Ioc_{max} +Ior_{max} = (-53.5 dBm + 1dB) + (-52.5 dBm ñ 1.45 dB + 0.3 dB) = -50.0 dBm => Max TT = 1.15 dB Min TT = Io_{min} - Io Io_{min} = Ioc_{min} + Ior_{min} = (-53.5 dBm ñ1 dB) + (-54.5 dBm ñ 1.45 dB ñ 0.3 dB) = - 52.3 dBm => Min TT = -1.15 dB Test 2: Max TT= Io_{max} ñ $Io_{nominal}$ $Io_{nominal}$ = - 67.9 dBm Io_{max} = Ioc_{max} + Ior_{max} = (-69.27 dBm + 1dB) + (-68.27 dBm ñ 4.4 dB + 0.3 dB) = -66.8 dBm => Max TT = 1.1 dB Min TT = Io_{min} - Io Io_{min} = Ioc_{min} + Ior_{min} = (-69.27 dBm ñ 1 dB) + (-70.27 dBm ñ 4.4 dB ñ 0.3 dB) = -69.0 dBm => Min TT = -1.1 dB Test 3 (Band I): Max TT= Io_{max} ñ $Io_{nominal}$ $Io_{nominal}$ = -93 dBm Io_{max} = Ioc_{max} + Ior_{max} + No = (-93.46 dBm + 1dB) + (-92.46 dBm ñ 9.24 dB +0.3 dB) + -99 dBm = -91.2 => Max TT = 1.8 dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.3A GSM Carrier RSSI	TBD		
8.7.3B Transport channel BLER	TBD		
8.7.3C UE Transmitted power	Accuracy upper limit Accuracy lower limit Depends on PUEMAX see table 8.7.3C.2.1	0.7 dB	Formula: Upper accuracy limit + TT Lower accuracy limit ñ TT Add and subtract TT to all the values in table 8.7.3C.2.1.
8.7.4 SFN-CFN observed time difference	T able 8.7.4.1.2 and Table 8.7.4.2.2	±1.0 dB for Ioc ±0.3 dB for Ior/Ioc ±0.5 chips for the actual SFN-CFN observed time difference	Intra and inter frequency case: Test 1: Io shall not go above -50 dBm Test 2: No restrictions on Io value Test 3: Io shall not go below -94 dBm (Band 1), or below ñ92 dBm (Band II) or below ñ91 dBm (Band III) ŒÊr/Ioc + TT TT on top of UE measurements accuracy: SFN-CFN observed time difference: 1.0 chips + TT
8.7.5.1 SFN-SFN observed time difference type 1	T able 8.7.5.1.2	±1.0 dB for Ioc ±0.3 dB for Ior/Ioc ±0.5 chips for the actual SFN-SFN observed time difference	Test 1: Io shall not go above -50 dBm Test 2: No restrictions on Io value Test 3: Io shall not go below -94 dBm (Band 1), or below ñ92 dBm (Band II) or below ñ91 dBm (Band III) ŒÊr/Ioc + TT TT on top of UE measurements accuracy: SFN-SFN observed time difference: 1.0 chips + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.6 UE Rx-Tx time difference	*Io ñ10.9 dB = Ioc,* Test 1: Io = -94 dBm Test2 : Io = -72dBm Test3 : Io = -50dBm Timing Accuracy ± 1.5 chip	1 dB for Ioc 0.3 dB for Ior/Ioc 0.5 chip for timing accuracy	Test 1: Io = -92.7 dBm, Ioc = -103.6 dBm Formula: $Ioc*(1-TT_{Ioc}+ (Ior/Ioc-TT_{Ior/Ioc})) \geq -94$ Test 2: unchanged (no critical RF parameters) Test 3: Io = -51.3 dBm, Ioc = -62.2 dBm Formula: $Ioc*(1+TT_{Ioc}+ (Ior/Ioc+TT_{Ior/Ioc})) \leq -50$ Timing accuracy ±2.0 chip Formulas: Upper limit +TT Lower limit ñTT
8.7.7 Observed time difference to GSM cell	TBD		
8.7.8 P-CCPCH RSCP	TBD		

3GPP TSG-T1 Meeting #25 **Tdoc ⌘T1-041648**
St Paulís Bay, Malta, 1st ñ 5th November 2004

CR-Form-v7.1

CHANGE REQUEST

⌘	34.121	CR	437	⌘rev	-	⌘	Current version:	5.5.0	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects:	UICC apps⌘		ME	X	Radio Access Network		Core Network

Title:	⌘ New clause for reference conditions		
Source:	⌘ NEC		
Work item code:	⌘ TEI	***Date:*** ⌘	13/10/2004
Category:	⌘ **F**	***Release:*** ⌘	Rel-5
	Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *Ph2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)* *Rel-7 (Release 7)*	

Reason for change: ⌘	Currently it is difficult to find all different places in TS 34.108 and TS 34.121 where messages and system information applicable for specific test cases are specified. TS 34.123-1 contains a clause with information on reference conditions.
Summary of change: ⌘	A clause is added describing where to find the reference conditions including information on how to find applicable messages and system information for test cases.
Consequences if not approved: ⌘	Difficult to find all messages and system information applicable for specific test cases.

Clauses affected: ⌘	new clause 4A added			
	Y	**N**		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	
Other comments: ⌘	Appliable for terminals supporting R99 and later.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

4 Frequency bands and channel arrangement

4.1 General

The information presented in this clause is based on a chip rate of 3,84 Mcps.

NOTE: Other chip rates may be considered in future releases.

4.2 Frequency bands

a) UTRA/FDD is designed to operate in either of the following paired bands:

Operating Band	UL Frequencies UE transmit, Node B receive	DL frequencies UE receive, Node B transmit
I	1920 ñ 1980 MHz	2110 ñ2170 MHz
II	1850 ñ1910 MHz	1930 ñ1990 MHz
III	1710-1785 MHz	1805-1880 MHz
IV	1710-1770MHz	2110- 2170MHz
V	824 - 849MHz	869-894MHz
VI	830- 840 MHz	875-885 MHz

Note: See TS25.307 [26] for Band IV, V and VI. Band VI specifications are developed for use in Japan.

b) Deployment in other frequency bands is not precluded.

4.3 TXñRX frequency separation

a) UTRA/FDD is designed to operate with the following TX-RX frequency separation.

Operating Band	TX-RX frequency separation
I	190 MHz
II	80 MHz
III	95 MHz
VI	45 MHz.

b) UTRA/FDD can support both fixed and variable transmit to receive frequency separation.

c) The use of other transmit to receive frequency separations in existing or other frequency bands shall not be precluded.

4.4 Channel arrangement

4.4.1 Channel spacing

The nominal channel spacing is 5 MHz, but this can be adjusted to optimise performance in a particular deployment scenario.

4.4.2 Channel raster

The channel raster is 200 kHz, which for all bands except Band II and Band VI means that the centre frequency must be an integer multiple of 200 kHz. In Band II, 12 additional centre frequencies are specified according to the table in 4.1a and the centre frequencies for these channels are shifted 100 kHz relative to the normal raster. In Band VI , additional centre frequencies are specified according to Table 4.1b and the centre frequencies for these channels are shifted 100 kHz relative to the normal raster.

4.4.3 Channel number

The carrier frequency is designated by the UTRA Absolute Radio Frequency Channel Number (UARFCN). The values of the UARFCN are as follows.

Table 4.1: UARFCN definition

Uplink	$N_U = 5 * F_{uplink}$	$0{,}0 \text{ MHz} \leq F_{uplink} \leq 3\,276{,}6 \text{ MHz}$ where F_{uplink} is the uplink frequency in MHz
Downlink	$NdN_d = 5 * F_{downlink}$	$0{,}0 \text{ MHz} \leq F_{downlink} \leq 3\,276{,}6 \text{ MHz}$ where $F_{downlink}$ is the downlink frequency in MHz

Table 4.1a: UARFCN definition (Band II additional channels)

	UARFCN	**Carrier frequency [MHz]**
Uplink	$Nd = 5 * (F_{uplink}$ ñ 1850.1 MHz)	F_{uplink} = 1852.5, 1857.5, 1862.5, 1867.5, 1872.5, 1877.5, 1882.5, 1887.5, 1892.5, 1897.5, 1902.5, 1907.5
Downlink	$N_u = 5 * (F_{downlink}$ ñ 1850.1 MHz)	$F_{downlink}$ = 1932.5, 1937.5, 1942.5, 1947.5, 1952.5, 1957.5, 1962.5, 1967.5, 1972.5, 1977.5, 1982.5, 1987.5

Table 4.1b: UARFCN definition (Band VI additional channels)

	UARFCN	Carrier frequency [MHz]
Uplink	$N_u = 5 * (F_{uplink}$ ñ 670.1 MHz)	F_{uplink} = 832.5, 837.5
Downlink	$Nd = 5 * (F_{downlink}$ ñ 670.1 MHz)	$F_{downlink}$ = 877.5, 882.5

4.4.4 UARFCN

The following UARFCN range shall be be supported for each paired band.

Table 4.2: UTRA Absolute Radio Frequency Channel Number

Operating Band	**Uplink UE transmit, Node B receive**	**Downlink UE receive, Node B transmit**
I	9 612 to 9 888	10 562 to 10 838
II	9 262 to 9 538 and 12, 37, 62, 87, 112, 137, 162, 187, 212, 237, 262, 287	9 662 to 9 938 and 412, 437, 462, 487, 512, 537, 562, 587, 612, 637, 662, 687
III	8562 to 8913	9037 to 9388
VI	4162 to 4188 and 812, 837	4387 to 4413 and 1037, 1062

4A Reference Conditions

The reference environment used by all test cases in this document are specified in TS 34.108 [3]. Where a test requires an environment that is different, this will be specified in the test itself.

4A.1 Generic setup procedures

Test procedures for RF test are defined in TS 34.108 [3] clause 7.3. The initial conditions of this clause also refer to the generic setup procedures defined in TS 34.108 [3] clause 7.2.

4A.2 System information

The reference system information used for test cases specified in this document is defined in TS 34.108 [3] clauses 6.1.0a (Default Master Information Block and Scheduling Block messages) and 6.1.0b (Default System Information Block Messages). For the generic setup procedures defined in TS 34.108 [3] clause 7.3 some SIB elements override those specific SIB elements from TS 34.108 [3] clause 6.1.0b. Annex I in the present document overwrites specific elements in the Master Information Block and Scheduling Block messages compared to TS 34.108 [3] clause 6.1.0a and specific SIB elements compared to TS 34.108 [3] clauses 6.1.0b and 7.3. In the test description itself specific SIB elements can be overwritten again. This leads to the following places defining Master Information Block, Scheduling Block messages and System Information Block Messages:

1. TS 34.108 [3] clauses 6.1.0a and 6.1.0b

2. TS 34.108 [3] clause 7.3

3. TS 34.121 Annex I

4. TS 34.121 test case description

When the same Information Element is defined in several places then the place with the higher number according to the above list will override the other definition(s).

4A.3 Message contents

Default message contents for test cases specified in this document are defined in TS 34.108 [3] clause 9. Most default message contents are specified in TS 34.108 [3] clause 9.2.1, but some default message contents originally defined for signalling test cases are re-used for RF testing and specified in TS 34.108 [3] clause 9.1.1. TS 34.108 [3] clause 7.3 contains additional information regarding the default messages. Annex I in the present document overwrites specific message contents for some test cases. In the test description itself specific information elements can be overwritten again. This leads to the following places defining message contents:

1a. TS 34.108 [3] clause 9.1.1 (only if indicated by TS 34.108 [3] clause 7.3 or the test description in TS 34.121)

1b. TS 34.108 [3] clause 9.2.1 (as indicated by TS 34.108 [3] clause 7.3 or the test description in TS 34.121)

2. TS 34.108 [3] clause 7.3

3. TS 34.121 Annex I

4. TS 34.121 test case description

When the same Information Element is defined in several places then the place with the higher number according to the above list will override the other definition(s). Default message contents from TS 34.108 [3] clause 9 will be used either from clause 9.1.1 (1a in the list above) or from clause 9.2.1 (1b in the list above). Some messages are not defined in all places, but all messages have to be defined at least in the test description.

Tdoc ⌘T1-041650

CR-Form-v7.1

CHANGE REQUEST

⌘	34.121	CR	438	⌘ rev	-	⌘	Current version:	5.5.0	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Alignment of HSDPA OCNS with TS 25.101
Source:	⌘	NEC
Work item code:	⌘	TEI
Date:	⌘	08/10/2004
Category:	⌘	F
Release:	⌘	Rel-5

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(addition of feature),*
- ***C*** *(functional modification of feature)*
- ***D*** *(editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
- *Ph2 (GSM Phase 2)*
- *R96 (Release 1996)*
- *R97 (Release 1997)*
- *R98 (Release 1998)*
- *R99 (Release 1999)*
- *Rel-4 (Release 4)*
- *Rel-5 (Release 5)*
- *Rel-6 (Release 6)*
- *Rel-7 (Release 7)*

Reason for change:	⌘	Align the OCNS for HSDPA with TS 25.101.
Summary of change:	⌘	Change the OCNS code allocation for HSDPA from codes 2-7 to 122-127 on SF=128, align the relative level settings and add Note 1 as specified in TS 25.101.
Consequences if not approved:	⌘	OCNS codes will conflict with other downlink codes used in HSDPA testing and would not be aligned with TS 25.101. The relative level settings could be interpreted wrong.

Clauses affected:	⌘	Annex E.5.2, E.6.2			
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Applicable for terminals supporting Rel-5 and HSDPA.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

E.5.2 OCNS Definition

The selected channelization codes and relative power levels for OCNS transmission ~~during~~ for HSDPA performance assessment are defined in Table E.5.5. The selected codes are designed to have a single length-16 parent code.

Table E.5.5: OCNS definition for HSDPA receiver testing

Channelization Code at SF=128	Relative Level setting (dB)	DPCH Data
122	0~~-6~~	The DPCH data for each channelization code shall be uncorrelated with each other and with any wanted signal over the period of any measurement.
123	-2~~8~~	
124	-2~~8~~	
125	-4~~10~~	
126	-1~~7~~	
127	-3~~9~~	

NOTE 1: The relative level setting specified in dB refers only to the relationship between the OCNS channels. The level of the OCNS channels relative to the Ior of the complete signal is a function of the power of the other channels in the signal with the intention that the power of the group of OCNS channels is used to make the total signal add up to 1.

E.6 Downlink Physical Channels Code Allocation (This clause is informative)

E.6.1 Downlink Physical Channels Code Allocation for non-HSDPA test cases

Table E.6.1.1 shows the downlink code allocation for non-HSDPA test cases. The numbers in the code columns indicate the code number with the respective spreading factor (SF). The Note column refers to specifications where the code allocation is defined. Only the system configuration according to TS 34.108 section 6.10b is used for RF testing. The codes used for the WCDMA interferer as defined in Table E.4.1 are not included in the table below because the WCDMA interferer is on another carrier. The S-CCPCH has been moved from code 1 to code 2 (SF=64) in order to resolve the code conflict with OCNS DPCH.

Table E.6.1.1: Downlink Physical Channels Code Allocation for RF testing (non-HSDPA)

Code with SF=256	Code with SF=128	Code with SF=64	Note
0: P-CPICH	0: -	0: -	TS 25.213; TS 34.108: 6.1.4
1: P-CCPCH			TS 25.213
2: PICH	1: -		TS 34.108: 6.1.0b (SIB5)
3: AICH			TS 34.108: 6.1.0b (SIB5)
4: -	2: OCNS DPCH	1: -	OCNS: TS34.121: Table E.3.6
5: -			
6: -	3: -		
7: -			
8: -	4:	2: S-CCPCH	S-CCPCH for RF testing TS 34.108: 7.3 (SIB5)
9: -			
10: -	5:		5: TS 34.108: 6.1.2 (CTCH)
11: -			
12: -	6:	3: -	
13: -			
14: -	7: -		
15: -			
16:	8: -	4: -	
17: -			
18: -	9: -		
19: -			
20: -	10: -	5: -	
21: -			
22: -	11: OCNS DPCH		OCNS: TS 34.121: E.3.6
23: -			
24-31: -	12-15: -	6-7: -	
32: -	16: -	8: -	
33: -			
34: -	17: OCNS DPCH		OCNS: TS 34.121: E.3.6
35: -			
36-43: -	18-21: -	9-10: -	
44: -	22: -	11: -	
45: -			
46: -	23: OCNS DPCH		OCNS: TS 34.121: E.3.6
47: -			
48-59: -	24-29: -	12-14: -	
60: -	30: -	15: -	
61: -			
62: -	31: OCNS DPCH		OCNS: TS 34.121: E.3.6
63: -			
64-75: -	32-37: -	16-18: -	
76: -	38: OCNS DPCH	19: -	OCNS: TS 34.121: E.3.6
77: -			
78: -	39: -		
79: -			
80-91: -	40-45: -	20-22: -	

Code with SF=256	Code with SF=128	Code with SF=64	Note
92: -	46: -	23: -	
93: -			
94: -	47: OCNS DPCH		OCNS: TS 34.121: E.3.6
95: -			
96-107: -	48-53: -	24-26: -	
108: -	54: -	27: -	
109: -			
110: -	55: OCNS DPCH		OCNS: TS 34.121: E.3.6
111: -			
112-123: -	56-61: -	28-30: -	
124: -	62: OCNS DPCH	31: -	OCNS: TS 34.121: E.3.6
125: -			
126: -	63: -		
127: -			
128-135: -	64-67: -	32-33: -	
136: -	68: -	34: -	
137: -			
138: -	69: OCNS DPCH		OCNS: TS 34.121: E.3.6
139: -			
140-155: -	70-77: -	35-38: -	
156: -	78: OCNS DPCH	39: -	OCNS: TS 34.121: E.3.6
157: -			
158: -	79: -		
159: -			
160-167: -	80-83: -	40-41: -	
168: -	84: -	42: -	
169: -			
170: -	85: OCNS DPCH		OCNS: TS 34.121: E.3.6
171: -			
172-187: -	86-93: -	43-46: -	
188: -	94: OCNS DPCH	47: -	OCNS: TS 34.121: E.3.6
189: -			
190: -	95: -		
191: -			
192: DCH SRB	96: DCH 12.2	48: -	TS 34.108: 9.2.1 (DCH SRB and 12.2); DCH 64: SF32-Code24, DCH 144: SF16-Code12, DCH 384: SF8-Code6
193: -			
194: -	97: -		
195: -			
196-223: -	98-111: -	49-55: -	
224: -	112: -	56: -	
225: -			
226: -	113: OCNS DPCH		OCNS: TS 34.121: E.3.6
227: -			
228-235: -	114-117: -	57-58: -	
236: -	118: -	59: -	
237: -			
238: -	119: OCNS DPCH		OCNS: TS 34.121: E.3.6
239: -			
240-59: -	120-123: -	60-61: -	
248: -	124: -	62: -	
249: -			
250: -	125: OCNS DPCH		OCNS: TS 34.121: E.3.6
251: -			
252-255: -	126-127: -	63: -	

E.6.2 Downlink Physical Channels Code Allocation for HSDPA test cases

Tables E.6.2.1 and E.6.2.2 show the downlink code allocation for HSDPA test cases. Table E.6.2.1 shows the complete downlink code tree for spreading factors 16, 32 and 64. Table E.6.2.2 shows details of the downlink code tree for SF=16 code=0 with spreading factors 64, 128 and 256. The numbers in the code columns indicate the code number with the respective spreading factor (SF). The Note column refers to specifications where the code allocation is defined.

Note 1: Performance requirements for test cases using 15 HS-PDSCH codes have not been defined by RAN4 yet. A specific code allocation for test cases using 15 HS-PDSCH codes needs to be aligned with assumptions taken in RAN4.

~~Note 2: The OCNS DPCH codes defined in Table E.5.5 use codes 2-7 (SF128) which collides with HS-SCCH and S-CCPCH. For this reason the OCNS DPCH codes 122-127 (SF128) have been used in the tables below. This needs to be confirmed with RAN4.~~

Table E.6.2.1: HSDPA Downlink Physical Channels Code Allocation for RF testing

Code with SF=64	Code with SF=32	Code with SF=16	Note
0: -	0: -	0: -	P-CPICH, P-CCPCH, PICH, AICH on SF256
1: -			HS-SCCH1 and HS-SCCH2 on SF128
2: S-CCPCH	1: -		S-CCPCH: TS 34.108: 6.1.0b
3: -			HS-SCCH3 and HS-SCCH4 on SF128
4: -	2: -	1: HS-PDSCH	1st HS-PDSCH code
5: -			
6: -	3: -		
7: -			
8: -	4: -	2: HS-PDSCH	2nd HS-PDSCH code
9: -			
10: -	5: -		
11: -			
12: -	6: -	3: HS-PDSCH	3rd HS-PDSCH code
13: -			
14: -	7: -		
15: -			
16: -	8: -	4: HS-PDSCH	4th HS-PDSCH code
17: -			
18: -	9: -		
19: -			
20: -	10: -	5: HS-PDSCH	5th HS-PDSCH code
21: -			
22: -	11: -		
23: -			
24: -	12: -	6: HS-PDSCH	6th HS-PDSCH code
25: -			
26: -	13: -		
27: -			
28: -	14: -	7: HS-PDSCH	7th HS-PDSCH code
29: -			
30: -	15: -		
31: -			
32: -	16: -	8: HS-PDSCH	8th HS-PDSCH code
33: -			
34: -	17: -		
35: -			
36: -	18: -	9: HS-PDSCH	9th HS-PDSCH code
37: -			
38: -	19: -		
39: -			
40: -	20: -	10: HS-PDSCH	10th HS-PDSCH code
41: -			
42: -	21: -		
43: -			
44: -	22: -	11: -	
45: -			
46: -	23: -		
47: -			
48: -	24: -	12: -	A-DPCH on code 192 (SF256) is the

Code with SF=64	Code with SF=32	Code with SF=16	Note
49: -			associated dedicated channel and contains the SRB from call setup (TS 34.108: 9.2.1)
50: -	25: -		
51: -			
52: -	26: -	13: -	
53: -			
54: -	27: -		
55: -			
56: -	28: -	14: -	
57: -			
58: -	29: -		
59: -			
60: -	30: -	15: -	OCNS DP~~D~~CH on codes 122-127 (SF128)
61: -			
62: -	31: -		
63: -			

Table E.6.2.2: HSDPA Downlink Physical Channels Code Allocation for SF=16 code=0

Code with SF=256	Code with SF=128	Code with SF=64	Note
0: P-CPICH	0: -	0: -	TS 25.213; 34.108: 6.1.4; 34.121: E.4.2
1: P-CCPCH			TS 25.213; 34.121: E.4.2
2: PICH	1: -		TS 34.108: 6.1.0b (SIB5)
3: AICH			TS 34.108: 6.1.0b (SIB5)
4: -	2: HS-SCCH1	1: -	TS 34.108: 9.2.1 RB Setup message
5: -			
6: -	3: HS-SCCH2		TS 34.108: 9.2.1 RB Setup message
7: -			
8: -	4: -	2: S-CCPCH	S-CCPCH: TS 34.108: 6.1.0b (SIB5)
9: -			
10: -	5: -		
11: -			
12: -	6: HS-SCCH3	3: -	TS 34.108: 9.2.1 RB Setup message
13: -			
14: -	7: HS-SCCH4		TS 34.108: 9.2.1 RB Setup message
15: -			

3GPP TSG-T1 Meeting #25
St Paulís Bay, Malta, 1st ñ 5th November 2004

Tdoc ⌘T1-041653

CR-Form-v7.1

CHANGE REQUEST

⌘	**34.121**	**CR**	439	⌘ **rev**	**-**	⌘	Current version:	**5.5.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction to Handover to GSM TC 8.3.4
Source:	⌘	NEC
Work item code:	⌘	TEI
Date:	⌘	21/10/2004
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
Ph2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)
Rel-7 (Release 7)

Reason for change:	⌘	Misleading editorís notes, incorrect Handover from UTRAN command and Handover Command (GSM) in TC 8.3.4.
Summary of change:	⌘	Remove the editorís notes and the TBD. Correction to the Handover from UTRAN command. Correction to the Handover Command (GSM). The CHANNEL MODE IE is changed from GSM AMR to GSM FR because GSM AMR is optional. Addition of GSM frequency information to Annex G.2.4. Editorial corrections.
Consequences if not approved:	⌘	The editorís notes would be misleading. The incorrect Handover from UTRAN command and Handover Command (GSM) could make good UEs fail the test. UEs which do not support GSM AMR might fail the test. Information on GSM frequency missing.

Clauses affected:	⌘	8.3.4, Annex G.2.4			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Applicable for combined FDD and GSM UE.			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.4 Inter-system Handover from UTRAN FDD to GSM

8.3.4.1 Definition and applicability

The UTRAN to GSM cell handover delay is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission on the channel of the new RAT.

The requirements and this test apply to the combined FDD and GSM UE.

8.3.4.2 Minimum requirement

The hard handover delay shall be less than indicated in Table 8.3.4.1. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95 %.

The hard handover delay as listed in table 8.3.4.1 equals the RRC procedure delay plus the interruption time listed in table 8.3.4.2.

Table 8.3.4.1: FDD/GSM handover - handover delay

UE synchronisation status	handover delay [ms]
The UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	90
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	190

Table 8.3.4.2: FDD/GSM handover - interruption time

Synchronisation status	Interruption time [ms]
The UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	40
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	140

The normative reference for this requirement is TS 25.133 [2] clauses 5.4.2 and A.5.4.

8.3.4.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.4.4 Method of test

8.3.4.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

~~[Editor's Note: Annex G.2 must be specified also for GSM; for instance as a reference to TS 51.010-1 clause A1.2]~~

The test parameters are given in table 8.3.4.3, 8.3.4.4 and 8.3.4.5 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used.. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

The UTRAN shall send a HANDOVER FROM UTRAN COMMAND with activation time "now". In the GSM Handover command contained in that message, the IE starting time shall not be included. The RRC HANDOVER FROM UTRAN COMMAND message shall be sent to the UE. The start of T3 is defined as the end of the last TTI, containing the HO command.

The requirements are also applicable for a UE not requiring compressed mode, in which case no compressed mode pattern should be sent for the parameters specified in table 8.3.4.3.

Table 8.3.4.3: General test parameters for Correct reporting of GSM neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 34.121 clause C.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns - GSM carrier RSSI measurement - GSM Initial BSIC identification - GSM BSIC re-confirmation		 DL Compressed mode reference pattern 2 in Set 2 Pattern 2 Pattern 2	Only applicable for UE requiring compressed mode patterns As specified in TS 34.121 [1] clause C.5, table C.5.2 As specified in clause TS 25.133 [2] 8.1.2.5.2.1 table 8.7. As specified in clause TS 25.133 [2] 8.1.2.5.2.2 table 8.8.
Active cell		Cell 1	
Inter-RAT measurement quantity		GSM Carrier RSSI	
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for event 3B and 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	NOTE: See Annex I for cell information . The information is sent before the compressed mode patterns starts.
N Identify abort		66	Taken from TS 25.133 [2] 8.1.2.5.2.1 table 8.7.
T Reconfirm abort		5.5	Taken from TS 25.133 [2] 8.1.2.5.2.2 table 8.8.
T1	s	20	
T2	s	5	
T3	s	5	

Table 8.3.4.4: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)
		T1, T2, T3
CPICH_Ec/Ior	dB	-10
PCCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DCH_Ec/Ior	dB	Note 1
OCNS_Ec/Ior	dB	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3. 84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or} .		

Table 8.3.4.5: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2, T3
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-85	-75

8.3.4.4.2 Procedure

1) The RF parameters for cell 1 are set up according to T1.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 and compressed mode parameters are configured as in the table 8.3.4.3. The compressed mode shall remain inactive.
4) The RF parameters for cell 2 are set up according to T1 and the SS configures a traffic channel.
5) The start of T1 is TTI aligned.
6) The SS shall transmit a MEASUREMENT CONTROL message ~~to~~ on cell 1.
7) At the T1-T2 transition, the SS shall switch the power of cell 2.
8) The UE shall transmit a MEASUREMENT REPORT message triggered by event 3C.
9) The SS shall transmit a HANDOVER FROM UTRAN COMMAND message with activation time "now" and indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. The start of T3 is defined as the end of the last TTI, containing the HANDOVER command.
10) The UE shall transmit a burst on the traffic channel of cell 2 implying that it has switched to the GSM cell. The UE sends a HANDOVER ACCESS message. If the UE transmits access bursts on the new DCCH of the target cell less than 90 ms from the beginning of time period T3, then the number of successful tests is increased by one.

~~[Editor's note: TS 34.108, 7.3.4 shall specify the messages HANDOVER ACCESS, PHYSICAL INFORMATION, SABM, UA and HANDOVER COMPLETE]~~

11) At the end of T3 the UE is switched off. Any timing information of cell 2 is deleted in the UE.
12) Repeat step 1-11 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (step ~~5~~6):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
-Measurement quantity for UTRAN quality estimate (10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH Ec/N0
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Required
-Inter-RAT reporting quantity (10.3.7.32)	
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT
-Maximum number of reported cells	2
-CHOICE report criteria	Inter-RAT measurement reporting criteria
-Inter-RAT measurement reporting criteria (10.3.7.30)	
-Parameters required for each event	1
-Inter-RAT event identity (10.3.7.24)	Event 3C
-Threshold own system	Not Present
-W	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT
-Maximum number of reported cells	2
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Active (for all three patterns specified in table 8.3.4.3)

HANDOVER FROM UTRAN COMMAND message (step ~~8~~9):

Information Element	Value/remark
Message Type (10.2.15)	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number -Activation time	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. ~~"~~now~~"~~
RB information elements -RAB information list -RAB Info	 1 ~~Not present~~
- RAB identity	0000 0001B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	CS domain
- NAS Synchronization Indicator	Not present
- Re-establishment timer	Use T315
Other information elements -CHOICE System type -Frequency Band -CHOICE GSM message ~~-Single GSM message~~ -Single GSM message~~List~~	 GSM Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"~~GSM/DCS 1800 Band~~ Single GSM message ~~[TBD]~~ GSM HANDOVER COMMAND formatted and coded according to GSM specifications as BIT STRING (1..512). The first/ *leftmost/ most significant* bit of the bit string contains bit 8 of the first octet of the GSM message. ~~GSM HANDOVER COMMAND formatted as BIT STRING(1..512).~~ The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

~~Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of TS 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 3~~

Information Element (GSM)	Value/remark	Version
Protocol Discriminator	RR Management.	
Skip Indicator Message Type Cell Description - Network Colour Code - Base station Colour Code - BCCH Carrier Number	0000 00101011 1 5 1	
Channel Description 2 - Channel Type and TDMA offset - Timeslot Number	 TCH/F + ACCHs Chosen arbitrarily by the test house, but not Zero.	
- Training Sequence Code	Chosen arbitrarily by the test house.	
- Hopping	Single RF channel.	
- ARFCN	1	
Handover Reference		
- Handover Reference Value Power Command and ACCESS Type - ATC - EPC_mode - FPC - EPC_FPC - Power level Synchronization Indication Channel Mode All other information elements	Chosen arbitrarily by the test house. 0 0 0 0 Chosen arbitrarily by the test house. Not present. speech full rate or half rate version 1 Not present.	 REL-5 R99 and REL-4 only REL-5

MEASUREMENT REPORT message for Inter-RAT test cases

This message is common for all inter RAT-frequency test cases ~~in clause 8.7~~ and is described in Annex I.

8.3.4.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95 %.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

Annex G (normative): Environmental conditions

G.1 General

This normative annex specifies the environmental requirements of the UE. Within these limits the requirements of the present documents shall be fulfilled.

G.2 Environmental requirements

The requirements in this clause apply to all types of UE(s)

G.2.1 Temperature

The UE shall fulfil all the requirements in the full temperature range of:

Table G.2.1.1

+15°C to + 35°C	for normal conditions (with relative humidity of 25 % to 75 %)
–10°C to + 55°C	for extreme conditions (see IEC publications 68-2-1 and 68-2-2)

Outside this temperature range the UE, if powered on, shall not make ineffective use of the radio frequency spectrum. In no case shall the UE exceed the transmitted levels as defined in TS 25.101 [1] for extreme operation.

Some tests in the present document are performed also in extreme temperature conditions. These test conditions are denoted as TL (temperature low, -10*C) and TH (temperature high, +55*C).

G.2.2 Voltage

The UE shall fulfil all the requirements in the full voltage range, i.e. the voltage range between the extreme voltages.

The manufacturer shall declare the lower and higher extreme voltages and the approximate shutdown voltage. For the equipment that can be operated from one or more of the power sources listed below, the lower extreme voltage shall not be higher, and the higher extreme voltage shall not be lower than that specified below.

Table G.2.2.1

Power source	Lower extreme voltage	Higher extreme voltage	Normal conditions voltage
AC mains	0.9 * nominal	1.1 * nominal	nominal
Regulated lead acid battery	0.9 * nominal	1.3 * nominal	1.1 * nominal
Non regulated batteries: - LeclanchÈ / lithium - Mercury/nickel & cadmium	 0.85 * nominal 0.90 * nominal	 Nominal Nominal	 Nominal Nominal

Outside this voltage range the UE if powered on, shall not make ineffective use of the radio frequency spectrum. In no case shall the UE exceed the transmitted levels as defined in TS 25.101 [1] for extreme operation. In particular, the UE shall inhibit all RF transmissions when the power supply voltage is below the manufacturer declared shutdown voltage.

Some tests in the present document are performed also in extreme voltage conditions. These test conditions are denoted as VL (lower extreme voltage) and VH (higher extreme voltage).

G.2.3 Vibration

The UE shall fulfil all the requirements when vibrated at the following frequency/amplitudes:

Table G.2.3.1

Frequency	ASD (Acceleration Spectral Density) random vibration
5 Hz to 20 Hz	0.96 m^2/s^3
20 Hz to 500 Hz	0.96 m^2/s^3 at 20 Hz, thereafter ñ3 dB / Octave

Outside the specified frequency range the UE, if powered on, shall not make ineffective use of the radio frequency spectrum. In no case shall the UE exceed the transmitted levels as defined in TS 25.101 [1] for extreme operation.

G.2.4 Specified frequency range

The manufacturer shall declare, which of the frequency bands defined in clause 4.2 is supported by the UE.

Some tests in the present document are performed also in low, mid and high range of the operating frequency band of the UE. The UARFCN's to be used for low, mid and high range are defined in TS 34.108 [3] clause 5.1.1.

For GSM frequency bands see TS 51.010-1 [25].

Note: Currently all GSM related test cases use ARFCN 1 and 2 (see cell 9 and 10 in TS 34.108 [3]) which are in the GSM 900 band.

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	440	⌘ **rev**	**-**	⌘	Current version:	**5.5.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction to test procedure in 7.12
Source:	⌘	Anritsu
Work item code:	⌘	
Date:	⌘	1/11/2004
Category:	⌘	**F**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	1) In the test procedure, it is not very clearly stated how to calculate Pfa. 2) The preamble cycles are not able to configure simply and efficiently.
Summary of change:	⌘	1) UEs check non received AI with retransmission of preamble, but SS can not confirm the last preamble with the corresponding retransmited preamble. So, the statemet is added to the test procedure 5) as ìPfa will not be calculated with the first preamble of every cycleî. 2) The preamble cycles are specified in reasonable numbers.
Consequences if not approved:	⌘	1) Pfa may be calculated with RACH procedure related to SS paging response, and the test purpose of AI detection performance may be misinterpreted. 2) Any test equipment could not simply configure the preamble cycles.

Clauses affected:	⌘	7.12			
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This CR applies for Rel-4 and later releases.			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.12 Detection of Acquisition Indicator (AI)

7.12.1 Definition and applicability

The receiver characteristics of Acquisition Indicator (AI) are determined by the probability of false alarm Pfa and probability of correct detection Pd. Pfa is defined as a conditional probability of detection of AI signature given that a AI signature was not transmitted. Pd is defined as a conditional probability of correct detection of AI signature given that the AI signature is transmitted.

The requirements and this test apply to all types of UTRA for the FDD UE for Release 4 and later releases.

7.12.2 Minimum requirements

For the parameters specified in table 7.12.1 the Pfa and 1-Pd shall not exceed the specified values in table 7.12.2. Power of downlink channels other than AICH is as defined in Table E.3.3 of Annex E.

Table 7.12.1: Parameters for AI detection

Parameter	Unit	Test 1
Phase reference	-	P-CPICH
I_{oc}	dBm/3.84 MHz	-60
Number of other transmitted AI signatures on AICH	-	0
$\hat{I}_{or}/I_{oc}$	dB	-1
AICH_Ec/Ior	dB	-22.0
AICH Power Offset	dB	-12.0
Propagation condition	-	Static

Note that AICH_Ec/Ior can not be set. Its value is calculated from other parameters and it is given for information only. (AICH_Ec/Ior = AICH Power Offset + CPICH_Ec/Ior)

Table 7.12.2: Test requirements for AI detection

Test Number	Pfa	1-Pd
1	0.01	0.01

The reference for this requirement is TS 25.101 [1] clause 8.13.1.

7.12.3 Test purpose

To verify that average probability of false detection of AI (Pfa) and average probability of missed AI (1-Pd) do not exceed specified values.

7.12.4 Method of test

7.12.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS and AWGN noise source to the UE antenna connector as shown in figure A.9.

2) Set the test parameters for test 1 as specified in tables 7.12.1 and 7.12.4. Power of downlink channels other than AICH are as defined in Table E.3.3 of Annex E.

Table 7.12.3 UE parameters for AI test

Parameter	Unit	Set 1	Set 2
Maximum number of preamble ramping cycles(Mmax)		~~3~~2	2
Maximum number of preambles in one preamble cycle (preamble retrans max)		32	12
Back-off time (Tb01)	ms #TTI	N/A 10	N/A 10
Power ramp step when no acquisition indicator is received (power offset p0)	dB	1	3

Table 7.12.4 SS parameters for AI test

Parameter	Unit	Value
Primary CPICH DL TX power	dBm	-8
UL interference	dBm	-92
SIR in open loop power control (Constant value)	dB	-10

See reference TS25.331 [8] clause 8.5.7 Open loop power control to calculate Pinitial. See also reference TS25.214 [5] subclause 6 step 6.3.

7.12.4.2 Procedure

1) The UE is switched on.

2) The SS and the UE shall perform location registration procedure as specified in TS34.108 [3] clause 7.2.2. UE parameters are set as defined in table 7.12.3 Set 1.

3) SS activates continuous paging and sends the Paging type 1 message with used paging identity being a UTRAN identity and including the UE's assigned U-RNTI

4) UE starts transmitting RACH preambles at level P=Pinitial.

5) SS does not send AI. If UE sends a new preamble a success for calculating Pfa is recorded. This step is repeated until UE stops sending preambles. SS does not calculate Pfa for the first preamble of every preamble cycles.

6) UE stops sending preambles. If number of sent preambles in the preamble cycle < preamble_retrans_max a failure for calculating Pfa is recorded and test continues from step 3. If number of preamble cycles M $\neq$ Mmax, a new preamble cycle is initiated and test continues from step 4. If number of preamble cycles M = Mmax then test continues from step 3.

7) Repeat steps 5-6 according to Annex F.6.2 table 6.2.8.

8) UE parameters are set as defined in table 7.12.3 Set 2.

9) SS activates continuous paging and sends the Paging type 1 message with used paging identity being a UTRAN identity and including the UE's assigned U-RNTI.

10) UE starts transmitting RACH preambles.

11) SS responds with AI signature containing NACK in AICH.

12) If UE stops sending preambles success for calculating Pd is recorded. If UE does not stop sending preambles, a failure for calculating Pd is recorded.

13) Repeat steps 11-12 according to Annex F.6.2 table 6.2.8.

3GPP TSG-T1 Meeting #25 **Tdoc ⌘T1-041662**
Malta, 1st November ñ 5th November

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	441	⌘rev	-	⌘	Current version:	5.5.0	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction to 8.7.6.1 UE Rx-Tx time difference type 1
Source:	⌘	Anritsu
Work item code:	⌘	***Date:*** ⌘ 1/11/2004
Category:	⌘	**F** ***Release:*** ⌘ Rel-5

Use one of the following categories:
F (correction)
A (corresponds to a correction in an earlier release)
B (addition of feature),
C (functional modification of feature)
D (editorial modification)
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	For the Internal Measurement, ìIntra Frequency Measured Resultsî cannot be configured in Measurement Control message.
Summary of change:	⌘	Remove ìIntra Frequency Measured Resultsî in Measurement Report message.
Consequences if not approved:	⌘	UE will not be tested properly.

Clauses affected:	⌘	8.7.6.1			
		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This CR applies for Rel-99 and later releases.			

How to create CRs using this form:
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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.7.6 UE Rx-Tx time difference

8.7.6.1 UE Rx-Tx time difference type 1

8.7.6.1.1 Definition and applicability

The UE Rx-Tx time difference is defined as the time difference between the UE uplink DPCCH/DPDCH frame transmission and the first detected path (in time) of the downlink DPCH frame from the measured radio link. The reference point of the UE Rx-Tx time difference shall be the antenna connector of the UE. This measurement is specified in clause 5.1.10 of TS 25.215.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.6.1.2 Minimum requirements

Table 8.7.6.1.1 UE Rx-Tx time difference type 1 measurement accuracy

Parameter	Unit	Accuracy [chip]	Conditions		
			Io [dBm/3.84MHz]		
			Band I	Band II	Band III
UE RX-TX time difference	chip	± 1.5	-94...-50	-92...-50	-91...-50

The normative reference for this requirement is TS 25.133 [2] clause 9.1.9.1.1 and A.9.1.6.1.2.

8.7.6.1.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of Rx-Tx time difference is within the limit specified in clause 8.7.6.1.2. This measurement is used for call setup purposes to compensate propagation delay of DL and UL.

8.7.6.1.4 Method of test

8.7.6.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect SS to the UE antenna connector as shown in figure A.1

Table 8.7.6.1.2: UE Rx-Tx time difference type 1 intra frequency test parameters

Parameter		Unit	Test 1	Test 2	Test 3
			Cell 1	Cell 1	Cell 1
UTRA RF Channel number			Channel 1	Channel 1	Channel 1
CPICH_Ec/Ior		dB	-10	-10	-10
PCCPCH_Ec/Ior		dB	-12	-12	-12
SCH_Ec/Ior		dB	-12	-12	-12
PICH_Ec/Ior		dB	-15	-15	-15
DPCH_Ec/Ior		dB	-15	-15	-15
OCNS_Ec/Ior		dB	-1.11	-1.11	-1.11
Îor/Ioc		dB	10.5	10.5	10.5
Ioc		dBm/ 3.84 MHz	*Io ñ10.9 dB = Ioc,* Note 1	*Io ñ10.9 dB = Ioc,* Note 1	*Io ñ10.9 dB = Ioc,* Note 1
Io	Band I	dBm/3.84 MHz	-94	-72	-50
	Band II		-92		
	Band III		-91		
Propagation condition		-	AWGN	AWGN	AWGN
NOTE 1: *Ioc* level shall be adjusted according the total signal power spectral density *Io* at receiver input and the geometry factor *Îor/Ioc*.					

8.7.6.1.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters are set up according to table 8.7.6.1.4 for Test 1.

2) SS shall transmit MEASUREMENT CONTROL message.

3) UE shall transmit periodically MEASUREMENT REPORT message.

4) SS shall check "UE Rx-Tx time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual UE Rx-Tx time difference value for each MEASUREMENT REPORT message. The comparison should be repeated 1000 times.

5) The RF parameters are set up according table 8.7.6.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period.

6) SS shall check "UE Rx-Tx time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual UE Rx-Tx time difference value for each MEASUREMENT REPORT message. The comparison should be repeated 1000 times.

7) The RF parameters are set up according table 8.7.6.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period.

8) SS shall check "UE Rx-Tx time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual UE Rx-Tx time difference value for each MEASUREMENT REPORT message. The comparison should be repeated 1000 times.

9) SS shall transmit RRC CONNECTION RELEASE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement (Step 2):

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command - Additional measurements list -Measurement Reporting Mode -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -CHOICE Measurement type -UE Internal measurement quantity -CHOICE mode -Measurement quantity -Filter coefficient -UE Internal reporting quantity -UE Transmitted power -CHOICE mode -UE Rx-Tx time difference -CHOICE report criteria -Amount of reporting -Reporting interval	 5 SETUP Not Present AM RLC Periodical reporting UE Internal measurement FDD UE Rx-Tx time difference 0 FALSE FDD TRUE Periodical reporting criteria Infinity 250
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- CHOICE Measurement	UE Internal measured results
- Choice mode	FDD
- UE Transmitted power	Checked that this IE is absent
- UE Rx-Tx report entries	
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	100
- UE Rx-Tx time difference type 1	Checked that this IE is present
~~- Intra-frequency measured results~~	
~~- Cell measured results~~	
~~- Cell Identity~~	~~Not present~~
~~- Cell synchronisation information~~	~~Checked that this IE is absent~~
~~- Primary CPICH info~~	
~~- Primary scrambling code~~	~~100~~
~~- CPICH Ec/N0~~	~~Checked that this IE is absent~~
~~- CPICH RSCP~~	~~Checked that this IE is present~~
~~- Pathloss~~	~~Checked that this IE is absent~~
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

8.7.6.1.5 Test requirements

Table 8.7.6.1.3 UE Rx-Tx time difference type 1 measurement accuracy

Parameter	Unit	Accuracy [chip]	Conditions		
			Io [dBm/3.84MHz]		
			Band I	Band II	Band III
UE RX-TX time difference	chip	± 2.0	-94...-50	-92...-50	-91...-50

Table 8.7.6.1.4: UE Rx-Tx time difference type 1 intra frequency test parameters

Parameter		Unit	Test 1	Test 2	Test 3
			Cell 1	Cell 1	Cell 1
UTRA RF Channel number			Channel 1	Channel 1	Channel 1
CPICH_Ec/Ior		dB	-10	-10	-10
PCCPCH_Ec/Ior		dB	-12	-12	-12
SCH_Ec/Ior		dB	-12	-12	-12
PICH_Ec/Ior		dB	-15	-15	-15
DPCH_Ec/Ior		dB	-15	-15	-15
OCNS_Ec/Ior		dB	-1.11	-1.11	-1.11
Îor/Ioc		dB	10.5	10.5	10.5
Ioc	Band I	dBm/ 3.84 MHz	-103.6	-82.9	-62.2
	Band II		-101.6		
	Band III		-100.6		
Io	Band I	dBm/3.84 MHz	-92.7	-72	-51.3
	Band II		-90.7		
	Band III		-89.7		
Propagation condition		-	AWGN	AWGN	AWGN
NOTE 1: *Ioc* level shall be adjusted according the total signal power spectral density *Io* at receiver input and the geometry factor *Îor/Ioc*.					

The reported values for UE Rx-Tx time difference accuracy shall meet the requirements in table 8.7.6.1.5.

Table 8.7.6.1.5: UE Tx-Rx time difference type 1 measurement accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Lowest reported value	RX-TX_TIME_(X ñ 2)	RX-TX_TIME_(X ñ 2)	RX-TX_TIME_(X ñ 2)
Highest reported value	RX-TX_TIME_(X + 2)	RX-TX_TIME_(X + 2)	RX-TX_TIME_(X + 2)
RX-TX_TIME_(X) is the reporting value corresponding to UE Rx-Tx time difference measured by system simulator			

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #25
St Paul's Bay, Malta, 1st - 5th November 2004

Tdoc ⌘ T1-041749

CR-Form-v7

CHANGE REQUEST

⌘ **34.121**	**CR** 444	⌘ **rev**	**-**	⌘	Current version:	**5.5.0** ⌘

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Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘ Corrections to HSDPA test 9.4 (HS-SCCH detection)		
Source:	⌘ Agilent Technologies		
Work item code:	⌘ TEI	***Date:*** ⌘	28/10/2004
Category:	⌘ **F**	***Release:*** ⌘	Rel-5
	Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘ Clarification of the text
Summary of change:	⌘ a) Various clarifications t the text to bring it in line with the other HSDPA tests
Consequences if not approved:	⌘ The test conditions will not be correct and the test may fail a good UE.

Clauses affected:	⌘ 9.4				
		Y	**N**		
Other specs Affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

9.4 HS-SCCH Detection Performance

9.4.1 Definition and applicability

The detection performance of the HS-SCCH is determined by the probability of event E_m, which is declared when the UE is signalled on HS-SCCH-1, but DTX is observed in the corresponding HS-DPCCH ACK/NACK field. The probability of event E_m is denoted $P(E_m)$.

The requirements and this test apply to all types of UTRA for FDD UE that support HSDPA.

9.4.2 Minimum requirements

For the parameters specified in Table 9.4.2, for each value of HS-SCCH-1 E_c/I_{or} specified in Table 9.4.3 the measured $P(E_m)$ shall be less than or equal to the corresponding specified value of $P(E_m)$.

Table 9.4.2: Test parameters for HS-SCCH detection

Parameter	Unit	Test 1	Test 2	Test 3
I_{oc}	dBm/3.84 MHz	-60		
Phase reference	-	P-CPICH		
P-CPICH E_c/I_{or} (*)	dB	-10		
HS-SCCH UE Identity ($x_{ue,1}$, $x_{ue,2}$, Ö, $x_{ue,16}$)		HS-SCCH-1: 1010101010101010 (UE under test addressed solely via HS-SCCH-1) HS-SCCH-2: 0001001010101010 HS-SCCH-3: 0001101010101010 HS-SCCH-4: 0001111110101010		
HS-DSCH TF of UE1		TF corresponding to CQI1		
HS-SCCH-1 TTI Transmission Pattern	-	ìÖ XOOXOOXÖ î, where ìXî indicates TTI in which HS-SCCH-1 signals the UE, and ìOî indicates no signalling		

Table 9.4.3: Test requirement for HS-SCCH detection

Test Number	Propagation Conditions	Reference value		
		HS-SCCH-1 E_c/I_{or} (dB)	$\hat{I}_{or}/I_{oc}$ (dB)	$P(E_m)$
1	PA3	-9	0	0.05
2	PA3	-9.9	5	0.01
3	VA30	-10	0	0.01

The reference for this requirement is TS 25.101 [1] clause 9.4.1.

9.4.2.1 Test purpose

To verify that $P(E_m)$ does not exceed ~~a specified~~ the limit in table 9.4.3.

9.4.2.2 Method of test

9.4.2.2.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1. Connect SS, multipath fading simulator and an AWGN noise source to the UE antenna connector as shown in figure A.16.

2. Set the test parameters for test 1-3 as specified in table 9.4.4 and 9.4.5. Setup fading simulators as fading condition, which are described in table D.2.2.1A. ~~Power~~ The configuration of the downlink channels is defined in table E.5.4.

9.4.2.2.2 Procedure

1. The UE is switched on.

2. An RRC connection is set-up according to the generic HSDPA set-up procedure specified in TS 34.108 [3].

3. Count the number of NACK, ACK and statDTX on the UL HS-DPCCH during the test interval and decide pass or fail according to Annex F.6.1 and table F.6.1.8. NACK and ACK are counted as a pass and statDTX is counted as a failure.

9.4.2.3 Test Requirements

~~The parameters and requirements are specified in tableís 9.4.2 and 9.4.3.~~ The probability of event E_m denoted as $P(E_m)$ (test procedure step 3) shall not exceed ~~a~~the specified value in table 9.4.3.

No test tolerance is applied to the test parameters.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

Tdoc ⌘ T1-041810

CR-Form-v7.1

CHANGE REQUEST

⌘	**34.121**	**CR** 446	⌘ **rev**	**-** ⌘	Current version:	**5.5.0** ⌘

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Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	CR to 34.121 Rel 5: Editorial corrections to test 8.7.3	
Source:	⌘	QUALCOMM Inc.	
Work item code:	⌘	TEI	***Date:*** ⌘ 01/11/2004
Category:	⌘	**D**	***Release:*** ⌘ Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *Ph2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)* *Rel-7 (Release 7)*

Reason for change:	⌘	Some of the fields in the MEASUREMENT CONTROL message for Inter frequency measurement are not aligned. The formula in section 8.7.3.2.2 has one of the ì|î symbols in the wrong place.
Summary of change:	⌘	Correctly aligned the fields in the MEASUREMENT CONTROL message for Inter frequency measurement. Changed the position of one of the ì|î symbol in section 8.7.3.2.2.
Consequences if not approved:	⌘	Test case will not be accurate

Clauses affected:	⌘	8.7.3.1, 8.7.3.2				
		Y	**N**			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR is applicable for UEís supporting Rel-99 or later.				

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.7.3 UTRA Carrier RSSI

NOTE: This measurement is for Inter-frequency handover evaluation.

8.7.3.1 Absolute measurement accuracy requirement

8.7.3.1.1 Definition and applicability

The absolute accuracy of UTRA Carrier RSSI is defined as the UTRA Carrier RSSI measured from one frequency compared to the actual UTRA Carrier RSSI power of that same frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.3.1.2 Minimum Requirements

Table 8.7.3.1.1: UTRA Carrier RSSI Inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
UTRA Carrier RSSI	dBm	± 4	± 7	-94...-70	-92...-70	-91...-70
	dBm	± 6	± 9	-70...-50	-70...-50	-70...-50

The normative reference for this requirement is TS 25.133 [2] clause 9.1.3.1.

8.7.3.1.3 Test purpose

The purpose of this test is to verify that the UTRA Carrier RSSI measurement is within the specified limits. This measurement is for inter-frequency handover evaluation.

8.7.3.1.4 Method of test

8.7.3.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, Set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 ñ TTI/10msec))mod 256". UTRA Carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.3.1.2.

Table 8.7.3.1.2: UTRA Carrier RSSI Inter frequency test parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-52.22	-52.22	-70.27	-70.27	-94.46	-94.46
	Band II						-92.46	-92.46
	Band III						-91.46	-91.46
Îor/Ioc		dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/Io, Note 1		dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
Io, Note 1	Band I	dBm/3.84 MHz	-50	-50	-69	-69	-94	-94
	Band II						-92	-92
	Band III						-91	-91
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

8.7.3.1.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.3.1.2.

2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

4) SS shall transmit MEASUREMENT CONTROL message.

5) UE shall transmit periodically MEASUREMENT REPORT messages.

6) SS shall check UTRA carrier RSSI value of Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power of Channel 2 reported by UE is compared to actual UTRA Carrier RSSI value of Channel 2 for each MEASUREMENT REPORT message.

7) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) above is repeated.

8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 2):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
- CHOICE *channel requirement*	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 ñ TTI/10msec))mod 256
-Transmission gap pattern sequence configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	B
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present

-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT CONTROL message for Inter frequency measurement (step 4):

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cell removal -New inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode -Measurement quantity for frequency quality estimate -Inter-frequency reporting quantity -UTRA Carrier RSSI -Frequency quality estimate -Non frequency related cell reporting quantities -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -Inter-frequency set update -CHOICE report criteria -Amount of reporting -Reporting interval	 2 Setup Acknowledged mode RLC Periodical reporting Not Present Inter-frequency measurement Not Present Cell 2 information is included. Not Present Inter-frequency reporting criteria 0 FDD CPICH RSCP TRUE TRUE TRUE TRUE FDD TRUE FALSE FALSE Report cells within monitored set on non-used frequency ~~Report cells within monitored set on non-used frequency~~ 2 Not Present Not Present Periodical reporting criteria Infinity 500 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.3.1.5 Test requirements

The UTRA Carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.3.1.2. The effect of assumed thermal noise and noise generated in the receiver (ñ99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in subclause 8.7.3.1.2 as shown in table 8.7.3.1.3.

Table 8.7.3.1.3: UTRA Carrier RSSI absolute accuracy

Parameter	Unit	Accuracy [dB]					
		Normal condition			Extreme condition		
		Test 1	Test 2	Test 3	Test 1	Test 2	Test 3
UTRA Carrier RSSI	dBm	± 7.15	± 5.1	-5Ö 5.8	± 10.15	± 8.1	-8Ö 8.8

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3.2.

Table 8.7.3.1.4: UTRA Carrier RSSI Inter frequency test parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-53.5	-53.5	-69.27	-69.27	-93.46	-93.46
	Band II						-91.46	-91.46
	Band III						-90.46	-90.46
Êor/Ioc		dB	-1.45	-1.45	-4.4	-4.4	-9.24	-9.24
CPICH Ec/Io, Note 1		dBm	-13.8	-13.8	-15.7	-15.7	-19.7	-19.7
Io, Note 1	Band I	dBm/3.84 MHz	-51.15	-51.15	-67.9	-67.9	-93	-93
	Band II						-91	-91
	Band III						-90	-90
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

The reported values for the UTRA Carrier RSSI absolute measurement shall meet the requirements in table 8.7.3.1.5.

Table 8.7.3.1.5: UTRA Carrier RSSI absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Normal Conditions			
Lowest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_42	UTRA_carrier_RSSI_LEV_27	UTRA_carrier_RSSI_LEV_02
Highest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_57	UTRA_carrier_RSSI_LEV_38	UTRA_carrier_RSSI_LEV_13
Extreme Conditions			
Lowest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_39	UTRA_carrier_RSSI_LEV_24	UTRA_carrier_RSSI_LEV_00
Highest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_60	UTRA_carrier_RSSI_LEV_41	UTRA_carrier_RSSI_LEV_16

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.3.2 Relative measurement accuracy requirement

8.7.3.2.1 Definition and applicability

The relative accuracy requirement is defined as the UTRA Carrier RSSI measured from one frequency compared to the UTRA Carrier RSSI measured from another frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.3.2.2 Minimum Requirements

The accuracy requirements in table 8.7.3.2.1 are valid under the following condition:

$|\text{Channel 1\_Io}|_{\text{dBm/3.84 MHz}} - |\text{Channel 2\_Io}|_{\text{dBm/3.84 MHz}} < 20$ dB.

Table 8.7.3.2.1: UTRA Carrier RSSI Inter frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
UTRA Carrier RSSI	dBm	± 7	± 11	-94...-70	-92...-70	-91...-70

The normative reference for this requirement is TS 25.133 [2] clause 9.1.3.2.

3GPP TSG-T WG1 Meeting #25
St Paulís Bay, Malta, November 1st - 5th, 2004

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CHANGE REQUEST

⌘ **34.121 CR** 447 ⌘**rev** **-** ⌘ Current version: **5.5.0** ⌘

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Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Corrections to BTFD test case		
Source:	⌘	Nokia		
Work item code:	⌘	TEI	***Date:*** ⌘	2004-11-03
Category:	⌘	**F**	***Release:*** ⌘	REL-5

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(addition of feature),*
- ***C*** *(functional modification of feature)*
- ***D*** *(editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change: ⌘ The minimum set of TFCs is not signalled to UE but UE has to configure it by using the rules defined in TS 25.331. Based on TS 25.331 section 8.6.5.2 the minimum set of TFCs consists of the following (valid for BTFD test case):

1> for each TM logical channel that is not part of a set of "synchronous" TM logical channels (see the definition below):

2> a TFC with non-empty TFs for the corresponding transport channel, and empty TFs for all other transport channels, where

3> for non-segmented mode TM-RLC logical channels the non-empty TFs include, for the smallest SDU size that can be received in a single TTI from higher layer:

4> a TF with non-zero number of transport blocks with "Configured RLC Size" equal to the corresponding SDU size. If more than one TFC fulfils this criteria, only the TFC with the lowest number of bits in the TFC is included in the minimum set of TFCs.

Hence the mimimum set of TFC consist of (TF0,TF0), (TF1, TF0) and (TF0, TF1) in BTFD test case. Therefore the minimum set of TFCs for BTFD test case as stated currently in TS 34.121 Annex C.4.1 is wrong.

Summary of change: ⌘ Annec C.4.1. A minimum set of TFCs has been corrected to contain only (TF0,TF0), (TF1,TF0) and (TF0,TF1).

Consequences if not approved: ⌘ TS 34.121 is not in-line with TS 25.331.

Clauses affected: ⌘ Annex C.4.1

		Y	N		
Other specs Affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This CR is applicable for UEís supporting Rel-99 or later.			

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

C.4 Reference measurement channel for BTFD performance requirements

C.4.1 UL reference measurement channel for BTFD performance requirements

The parameters for UL reference measurement channel for BTFD are specified in table C.4.1.1, table C.4.1.2, table C.4.1.3 and table C.4.1.4.

Table C.4.1.1: UL reference measurement channel physical parameters for BTFD

Parameter	Level	Unit
Information bit rate	12.8k, 10.8k, 8.55k, 8.0k, 7.3k, 6.5k, 5.75k, 5.35k, 2.55k	kbps
DPCCH	15	kbps
DPCCH Slot Format #i	0	-
DPCCH/DPDCH power ratio	-5.46 (12.8k - 7.3k) -2.69 (6.5k ñ 2.55k)	dB
TFCI	On	-
Puncturing Limit	100	%

Table C.4.1.2: UL reference measurement channel, transport channel parameters for SRB

Higher Layer	RAB/Signalling RB		SRB
RLC	Logical channel type		DCCH
	RLC mode		UM/AM
	Payload sizes, bit		88/80
	Max data rate, bps		2200/2000
	PDU header, bit		8/16
	TrD PDU header, bit		N/A
MAC	MAC header, bit		4
	MAC multiplexing		Yes
Layer 1	TrCH type		DCH
	Transport Channel Identity		10
	TB sizes, bit		100
	TFS	TF0, bits	0*100
		TF1, bits	1*100
	TTI, ms		40
	Coding type		Convolution Coding
	Coding Rate		1/3
	CRC, bit		12
	Max number of bits/TTI after channel coding		360
	Uplink: Max number of bits/radio frame before rate matching		90
	RM attribute		256

Table C.4.1.3: UL reference measurement channel using RLC-TM for DTCH, transport channel parameters

Higher Layer	RAB/Signalling RB		12.8k /10.8k/8.55k/8.0k/7.3k/6.5k/5.75k/5.35k/2.55k
RLC	Logical channel type		DTCH
	RLC mode		TM
	Payload sizes, bit		256, 216, 171, 160, 146, 130, 115, 107, 51, 12
	Max data rate, bps		12200
	PDU header, bit		N/A
	TrD PDU header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	Transport Channel Identity		1
	TB sizes, bit		256, 216, 171, 160, 146, 130, 115, 107, 51,12
	TFS	TF0 bit	0x256
		TF1 bit	1x256
		TF2 bit	1x216
		TF3 bit	1x171
		TF4 bit	1x160
		TF5 bit	1x146
		TF6 bit	1x130
		TF7 bit	1x115
		TF8 bit	1x107
		TF9 bit	1x51
		TF10 bit	1x12
	TTI, ms		20
	Coding type		CC
	Coding Rate		1/3
	CRC, bit		0
	RM attribute		256

Table C.4.1.4: UL reference measurement channel, TFCS

TFCS size	22
TFCS	(DTCH, DCCH)= (TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF5, TF0), (TF6, TF0), (TF7, TF0), (TF8, TF0), (TF9, TF0), (TF10, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1), (TF5, TF1), (TF6, TF1), (TF7, TF1), (TF8, TF1), (TF9, TF1), (TF10, TF1)

NOTE: The TFCs (TF0, TF0), (TF1, TF0) and (TF0, TF1)~~except for (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1), (TF5, TF1), (TF6, TF1), (TF7, TF1), (TF8, TF1), (TF9, TF1) and (TF10, TF1)~~ are belonging to minimum set of TFCs.

3GPP TSG-T1 Meeting #25
St Paulís Bay, Malta, 1st - 5th November 2004

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CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	448	⌘ rev	-	⌘	Current version:	5.5.0	⌘

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Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction to the test procedure of FDD/FDD Hard Handover test cases		
Source:	⌘	NEC, Rohde & Schwarz		
Work item code:	⌘	TEI	***Date:*** ⌘	02/11/2004
Category:	⌘	**F** *Use one of the following categories:* ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	***Release:*** ⌘	Rel-5 *Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	RAN4 clarified the minimum requirements in TS 25.133 according R4-040561. TS 34.121 needs to be updated to align the test procedure and requirements to core specification TS 25.133. The PSC is not correctly specified for cell 2.
Summary of change:	⌘	Correction of the HHO test cases: 8.3.2.1.4.1: Redefined the start of period T3. Modfied Table 8.3.2.1.1 to allow the handover command to be sent earlier after the UE has reported the necessary event (i.e. T2 is allowed to be shorter than 5 seconds). 8.3.2.1.4.2: Modified test procedure and test requirements to take into account the new definition of T2 and T3. 8.3.2.1.4.2: Changed Triggering condition 1 in Measurement Control message from ìActive set cells and monitored set cellsî to ìActive set cellsî. According to R99 version of TS 25.331 section 10.3.7.39 the UE behaviour is unspecified when using a triggering condition other than "Active set cells" for the intra-frequency event 1b. 8.3.2.1.4.2: Changed Triggering condition 2 in Measurement Control message from ìActive set cells and monitored set cellsî to ìMonitored set cellsî. According to R99 version of TS 25.331 section 10.3.7.39 the UE behaviour is unspecified when using a triggering condition "Active set cells" or "Active set cells and monitored set cells" for the intra-frequency event 1a. The proposed solution resolves the unspecified behaviour of the UE while it doesnít change the purpose/result of test and remains in line with all versions of the core specifications (25.133 and 25.331).

		8.3.2.1.4.2: Changed the PSC to 150 in the PHYSICAL CHANNEL RECONFIGURATION message (step 7). 8.3.2.2.4.1: Redefined the start of period T3. Modfied Table 8.3.2.2.1 to allow the handover command to be sent earlier after the UE has reported the necessary event (i.e. T2 is allowed to be shorter than 10 seconds). 8.3.2.2.4.2: Modified test procedure and test requirements to take into account the new definition of T2 and T3. 8.3.2.2.4.2: Changed the PSC to 250 in the PHYSICAL CHANNEL RECONFIGURATION message (step 7) and in the MEASUREMENT REPORT message for Inter frequency test cases. Editorial corrections.
Consequences if not approved:	⌘	The test cases remain unclear. The test case implementation will not fully comply with TS 25.133 requirements. The test case implementation will be unnecessarily difficult and take longer than necessary to execute. A good UE might fail because unspecified R99 UE behaviour is used in the intra-frequency test case. NOTE: there is no impact on the UE since only the test method is changed. The test might fail because the PSC allocation does not match the SIB11 information as specified in TS 34.108.

Clauses affected:	⌘	8.3.2.1.4.1, 8.3.2.1.4.2, 8.3.2.2.4.1, 8.3.2.2.4.2				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR is applicable for UEís supporting Rel-99 or later.				

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8.3.2 FDD/FDD Hard Handover

8.3.2.1 FDD/FDD Hard Handover to intra-frequency cell

8.3.2.1.1 Definition and applicability

The hard handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCCH.

The requirements and this test apply to the FDD UE.

8.3.2.1.2 Minimum requirement

The interruption time shall be less than 110 ms in CELL_DCH state in the single carrier case. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95 %.

The hard handover delay $D_{handover}$ equals the RRC procedure delay defined in TS 25.331 clause 13.5.2 plus the interruption time stated in TS 25.133 clause 5.2.2.2 as follows:

The interruption time, i.e. the time between the last TTI containing a transport block on the old DPDCH and the time the UE starts transmission of the new uplink DPCCH, is depending on whether the target cell is known for the UE or not.

If intra-frequency hard handover is commanded or inter-frequency hard handover is commanded when the UE does not need compressed mode to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt1}$

$T_{interrupt1}=T_{IU}+40+20*KC+150*OC + 10*F_{max}$ ms

where

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

KC is the number of known target cells in the message, and

OC is the number of target cells that are not known in the message.

F_{max} denotes the maximum number of radio frames within the transmission time intervals of all transport channels that are multiplexed into the same CCTrCH.

Note: The figure 40 ms is the time required for measuring the downlink DPCCH channel as stated in TS 25.214 clause 4.3.1.2.

In the interruption requirement $T_{interrupt1}$ a cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set
- the cell has been measured by the UE during the last 5 seconds and the SFN of the cell has been decoded by the UE.

The normative reference for this requirement is TS 25.133 [2] clauses 5.2.2 and A.5.2.1.

8.3.2.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.2.1.4 Method of test

8.3.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in tables 8.3.2.1.1 to 8.3.2.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used, and that CPICH Ec/Io and SFN-CFN observed timed difference shall be reported together with Event 1A. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a PHYSICAL CHANNEL RECONFIGURATION with activation time "now" with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE during period T2, after the UE has reported event 1A. ~~so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined in TS 25.331 [8].~~ The start of T3 is defined as the end of the last TTI containing the Physical Channel reconfiguration message.

N312 shall have the smallest possible value i.e. only one insync is required.

Table 8.3.2.1.1: General test parameters for Handover to intra-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in clause C.3.1 and C.2.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range		dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting deactivation threshold			0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	5	
T2		s	≤5	
T3		s	5	

Table 8.3.2.1.2: Cell specific test parameters for Handover to intra-frequency cell

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
CPICH_Ec/Ior	dB	-10			-10		
PCCPCH_Ec/Ior	dB	-12			-12		
SCH_Ec/Ior	dB	-12			-12		
PICH_Ec/Ior	dB	-15			-15		
DPCH_Ec/Ior	dB	Note1	Note1	Note3	N/A	N/A	Note1
OCNS_Ec/Ior	dB	Note2	Note2	Note2	-0.941	-0.941	Note2
$\hat{I}_{or}/I_{oc}$	dB	0	6.97		-Infinity	5.97	
$\hat{I}_{or}$ (Note 4)	dBm	-70.00	-63.03		-Infinity	-64.03	
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/Io	dB	-13			-Infinity	-14	
Propagation Condition		AWGN					

Note 1: The DPCH level is controlled by the power control loop
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.
Note 3: The DPCH may not be power controlled by the power control loop.
Note 4: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.2.1.4.2 Procedure

1) The RF parameters are set up according to T1 in table 8.3.2.1.3.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.

4) SS shall transmit a MEASUREMENT CONTROL message on cell 1.

5) 5 seconds after step 4 has completed, the SS shall switch the power settings from T1 to T2 in table 8.3.2.1.3.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1A

7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time set to "now". ~~SS shall transmit the whole message such that it will be available at the UE no later than a period equals to the RRC procedure delay (= 80 ms) prior to the beginning of T3.~~The start of T3 is defined as the end of the last TTI containing the physical channel reconfiguration message.

8) ~~After 5 seconds from the beginning of time period T2, t~~The SS shall switch the power settings from T2 to T3 in table 8.3.2.1.3.

9) ~~UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2.~~ If the UE transmits the UL DPCCH to cell 2 less than 190~~10~~ ms from the beginning of time period T3 then the number of successful tests is increased by one. The UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2.

10) After 5 seconds from the beginning of time period T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

11) Repeat step 1-10 until the confidence level according to annex F.6.2 is achieved

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity (10.3.7.41)	Intra-frequency measurement Not Present 0 FDD CPICH_Ec/N0
-Reporting quantities for active set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE report criteria -Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event	Not Present Not Present Intra-frequency measurement reporting criteria 2
-Intra-frequency event identity -Triggering condition 2 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status (10.3.7.61) -CHOICE reported cell -Maximum number of reported cells -Intra-frequency event identity -Triggering condition 1	Event 1A ~~Active set cells and m~~Monitored set cells 3 dB Not Present 1.0 0 dB Not Present 0 Not Present 0 ms Infinity 0 ms (Note 2) ~~Report cells within active set and/or monitored set cells on used frequency~~ Report cells within active set and/or monitored set cells on used frequency 2 Event 1B Active set cells~~ and monitored set cells~~

Information Element/Group name	Value/Remark
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	Not Present
-Reporting cell status (10.3.7.61)	
~~-Report cells within active set and/or monitored set cells on used frequency~~-CHOICE reported cell	Report cells within active set and/or monitored set cells on used frequency
-Maximum number of reported cells	2
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL. Note 2: Reporting interval = 0 ms means no periodical reporting	

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	"now"
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE mode	FDD
-UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 2
-UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE *channel requirement*	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE mode	FDD
-DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
-CHOICE mode	FDD
-Scrambling code type	Long
-Scrambling code number	0 (0 to 16777215)
-Number of DPDCH	Not Present(1)
-Spreading factor	64
-TFCI existence	TRUE
-Number of FBI bit	Not Present(0)
-Puncturing Limit	1
Downlink radio resources	
-CHOICE *mode*	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-DPC mode	0 (single)
-CHOICE mode	FDD
-Power offset $P_{Pilot-DPDCH}$	0
-DL rate matching restriction information	Not Present
-Spreading factor	128
-Fixed or Flexible Position	Fixed
-TFCI existence	TRUE
-CHOICE SF	128
-Number of bits for Pilot bits(SF=128,256)	8
-CHOICE mode	FDD

Information Element	Value/Remark
-DPCH compressed mode info (10.3.6.33)	Not Present
-TX Diversity mode (10.3.6.86)	None
-SSDT information (10.3.6.77)	Not Present
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
-Primary scrambling code	150~~350~~
-PDSCH with SHO DCH info (10.3.6.47)	Not Present
-PDSCH code mapping (10.3.6.43)	Not Present
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	0 chips
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No change
-TPC combination index	0
- SSDT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Not present
- SFN-SFN observed time difference	Checked that this IE is present
- Cell synchronisation information	
- Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	100
- CPICH Ec/N0	Checked that this IE is present
- CPICH RSCP	Checked that this IE is present
- Cell measured results	
- Cell Identity	Not present
- Cell synchronisation information	
- Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
- CPICH Ec/N0	Checked that this IE is present
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is present

8.3.2.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.2.1.3: Test requirements for Handover to intra-frequency cell

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
CPICH_Ec/Ior	dB	-9.3			-9.3		
PCCPCH_Ec/Ior	dB	-11.3			-11.3		
SCH_Ec/Ior	dB	-11.3			-11.3		
PICH_Ec/Ior	dB	-14.3			-14.3		
DPCH_Ec/Ior	dB	Note1	Note1	Note3	N/A	N/A	Note1
OCNS_Ec/Ior	dB	Note2	Note2	Note2	-1.13	-1.13	Note2
$\hat{I}_{or}/I_{oc}$ (Note 4)	dB	0	7.0		-Infinity	6.0	
$\hat{I}_{or}$	dBm	-70.0	-63.0		-Infinity	-64.0	
I_{oc}	dBm/ 3.84 MHz	-70					
CPICH_Ec/Io (Note 4)	dB	-12.3			-Infinity	-13.3	
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}. Note 3: The DPCH may not be power controlled by the power control loop. Note 4: These parameters are not directly settable, but are derived by calculation from the settable parameters.							

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.2.2 FDD/FDD Hard Handover to inter-frequency cell

8.3.2.2.1 Definition and applicability

The hard handover delay is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCCH.

The requirements and this test apply to the FDD UE.

8.3.2.2.2 Minimum requirement

The interruption time shall be less than 140 ms in CELL_DCH state in the dual carrier case. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95 %.

The hard handover delay $D_{handover}$ equals the RRC procedure delay defined in TS 25.331 clause 13.5.2 plus the interruption time stated in TS 25.133 clause 5.2.2.2 as follows:

If inter-frequency hard handover is commanded and the UE needs compressed mode to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt2}$

$T_{interrupt2} = T_{IU}+40+50*KC+150*OC + 10*F_{max}$ ms

In the interruption requirement $T_{interrupt2}$ a cell is known if:

- the cell has been measured by the UE during the last 5 seconds.

The phase reference is the primary CPICH.

The normative reference for this requirement is TS 25.133 [2] clauses 5.2.2 and A.5.2.2.

8.3.2.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.2.2.4 Method of test

8.3.2.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in tables 8.3.2.2.1 to 8.3.2.2.3 below. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a PHYSICAL CHANNEL RECONFIGURATION with activation time "now" with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE during period T2, after the UE has reported event 2C. ~~so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined in TS 25.331 [8].~~ The start of T3 is defined as the end of the last TTI containing the Physical Channel reconfiguration message.

N312 shall have the smallest possible value i.e. only one insync is required.

Table 8.3.2.2.1: General test parameters for Handover to inter-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in clause C.3.1 and C.2.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 1	As specified in TS 34.121 clause C.5.
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold non used frequency		dB	-18	Absolute Ec/I0 threshold for event 2C
Hysteresis		dB	0	
W non-used frequency			1	Applicable for event 2C
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	5	
T2		s	≤10	
T3		s	5	

Table 8.3.2.2.2: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1			Channel 2		
CPICH_Ec/Ior	dB	-10			-10		
PCCPCH_Ec/Ior	dB	-12			-12		
SCH_Ec/Ior	dB	-12			-12		
PICH_Ec/Ior	dB	-15			-15		
DPCH_Ec/Ior	dB	Note1	Note1	Note3	N/A	N/A	Note1
OCNS_Ec/Ior	dB	Note2	Note2	Note2	-0.941	-0.941	Note2
$\hat{I}_{or}/I_{oc}$	dB	0			-Infinity	-1.8	-1.8
$\hat{I}_{or}$ (Note 4)	dBm	-70.0			-Infinity	-71.8	-71.8
I_{oc}	dBm/ 3.84 MHz	-70					
CPICH_Ec/Io	dB	-13			-Infinity	-14	
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}. Note 3: The DPCH may not be power controlled by the power control loop. Note 4: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.							

8.3.2.2.4.2 Procedure

1) The RF parameters are set up according to T1 in table 8.3.2.2.3.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 with Compressed mode parameters as in Table 8.3.2.2.1.

4) SS shall transmit a MEASUREMENT CONTROL message~~s~~ on cell 1.

5) 5 seconds after step 4 has completed, the SS shall switch the power settings from T1 to T2 in table 8.3.2.2.3.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C

7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time "now". ~~SS shall transmit the whole message such that will be is available at the UE no later than a period equals to the RRC procedure delay (= 80 ms) prior to the beginning of T3.~~ The start of T3 is defined as the end of the last TTI containing the physical channel reconfiguration message.

8) ~~After 10 seconds from the beginning of time period T2, t~~The SS shall switch the power settings from T2 to T3 in table 8.3.2.2.3.

9) ~~UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2.~~ If the UE transmits the UL DPCCH to cell 2 less than 220~~140~~ ms from the beginning of time period T3 then the number of successful tests is increased by one. The UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2.

10) After 5 seconds from the beginning of time period T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

11) Repeat step 1-10 until the confidence level according to annex F.6.2 is achieved

Specific Message Contents

All messages indicated belowabove shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message, event 2C (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
- CHOICE Inter-frequency cell removal	Not Present
- New Inter frequency cells	
- Inter frequency cell id	0
- Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Not Present
- UARFCN downlink(Nd)	Same frequency as "Channel2" in Table 8.3.2.2.2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to Primary scrambling code of Cell2
- Primary CPICH Tx Power	Set to Primary CPICH Tx Power of Cell2 described in Table 8.3.2.2.2
- Tx Diversity Indicator	FALSE
- Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Inter-frequency reporting criteria	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH Ec/N0
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity (10.3.7.14)	Event 2C
-Threshold used frequency	Not Present
-W used frequency	Not Present

Information Element/Group name	Value/Remark
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within monitored set on non-used frequency
-Maximum number of reported cells per reported non-used frequency	1
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-18 dB
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	"now"
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
>RB with PDCP information list	Not Present
>>RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE mode	FDD
-UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 2
-UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE *channel requirement*	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE mode	FDD
-DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
-CHOICE mode	FDD
-Scrambling code type	Long
-Scrambling code number	0 (0 to 16777215)
-Number of DPDCH	Not Present(1)
-Spreading factor	64
-TFCI existence	TRUE
-Number of FBI bit	Not Present(0)
-Puncturing Limit	1
Downlink radio resources	
-CHOICE *mode*	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-DPC mode	0 (single)
-CHOICE mode	FDD
-Power offset $P_{Pilot\text{-}DPDCH}$	0
-DL rate matching restriction information	Not Present
-Spreading factor	128
-Fixed or Flexible Position	Fixed
-TFCI existence	TRUE
-CHOICE SF	128

Information Element	Value/Remark
-Number of bits for Pilot bits(SF=128,256)	8
-CHOICE mode	FDD
-DPCH compressed mode info (10.3.6.33)	
- Transmission gap pattern sequence	1
- TGPSI	1
- TGPS Status Flag	deactivate
- TGCFN	Not Present
- Transmission gap pattern sequence configuration parameters	Not Present
-TX Diversity mode (10.3.6.86)	None
-SSDT information (10.3.6.77)	Not Present
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
-Primary scrambling code	250~~350~~
-PDSCH with SHO DCH info (10.3.6.47)	Not Present
-PDSCH code mapping (10.3.6.43)	Not Present
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	0 chips
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No change
-TPC combination index	0
- SSDT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Inter-frequency measured results	
- Frequency Info	Checked that this IE is present
- Inter-freqcell measured results list	
- Cell measured results	
- Cell Identity	Not present
- Cell synchronisation information	
- Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	250~~150~~
- CPICH Ec/N0	Checked that this IE is present
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is present

8.3.2.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.2.2.3: Test requirements for Handover to inter-frequency cell

Parameter	Unit	Cell 1			Cell 2		
		T1	**T2**	**T3**	**T1**	**T2**	**T3**
UTRA RF Channel Number		Channel 1			Channel 2		
CPICH_Ec/Ior	dB	-9.2			-9.2		
PCCPCH_Ec/Ior	dB	-11.2			-11.2		
SCH_Ec/Ior	dB	-11.2			-11.2		
PICH_Ec/Ior	dB	-14.2			-14.2		
DPCH_Ec/Ior	dB	Note1	Note1	Note3	N/A	N/A	Note1
OCNS_Ec/Ior	dB	Note2	Note2	Note2	-1.16	-1.16	Note2
$\hat{I}_{or}/I_{oc}$ *(Note 4)*	dB	0			-Infinity	-1.8	-1.8
$\hat{I}_{or}$	dBm	-70.0			-Infinity	-71.8	-71.8
I_{oc}	dBm/ 3.84 MHz	-70					
CPICH_Ec/Io *(Note 4)*	dB	-12.2			-Infinity	-13.2	
Propagation Condition		AWGN					

Note 1: The DPCH level is controlled by the power control loop
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or} .
Note 3: The DPCH may not be power controlled by the power control loop.
Note 4: These parameters are not directly settable, but are derived by calculation from the settable parameters.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	449	⌘ **rev**	**-**	⌘	Current version:	**5.5.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects:	UICC apps⌘ [ ]	ME [X]	Radio Access Network [ ]	Core Network [ ]

Title:	⌘	Corrections to TC 8.6.4.1		
Source:	⌘	Nokia		
Work item code:	⌘	TEI	***Date:*** ⌘	2004-11-03
Category:	⌘	**F**	***Release:*** ⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change: ⌘ Maximum test system uncertainties, test tolerances and derivation of test requirements have not been defined for TC 8.6.4.1 (Correct Reporting of GSM neighbours in AWGN propagation conditions) in Annex F.

Test tolerances have not been taken into account in section 8.6.4.1.

Test requirements for measurement reporting delay do not include a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. This delay uncertainty is twice the the TTI of the uplink DCCH.

Monitored cell list size is missing a reference to Annex I.

TC 8.6.4.1 contains some minor mistakes that should be corrected.

Summary of change: ⌘ Maximum test system uncertainties have been added into Table F.1.5

Test tolerances have been added into table F.2.4

Derivation of test requirements have been added into table F.4.4

New tables showing cell specific test parameters for GSM cell including the test tolerances have been created (Tables 8.6.4.7 and 8.6.4.8). These tables are now also refered in test procedures.

Measurement delay values have been increased by 80 ms (2xTTI of the uplink DCCH) in sections 8.6.4.1.4.2 and 8.6.4.1.4.4

Monitored cell list size refer now to Annex I in Tables 8.6.4.1 and 8.6.4.4

Other minor corrections: add one space and reference to TS 25.133 in table 8.6.4.1; replace ìall threeî with ìtwoî in MEASUREMENT CONTROL message; Replace ì7 secondsî with ì2 secondsî in step 7 in test procedure in section

		8.6.4.1.4.4
Consequences if not approved:	⌘	Test case is incomplete

Clauses affected:	⌘	Section 8.6.4.1, Annex F.1.5, Annex F.2.4, Annex F.4.4

		Y	N			
Other specs Affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	This CR is applicable for UEís supporting Rel-99 or later.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6.4 GSM measurements

8.6.4.1 Correct reporting of GSM neighbours in AWGN propagation condition

8.6.4.1.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit the measurement report over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements in this section apply only to UE supporting FDD and GSM for Release 99, Release 4, Release 5 and later releases.

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8.6.4.1.2 Minimum requirements

Measurements on GSM cells can be requested with BSIC verified or BSIC non-verified.

1) In CELL_DCH state when a transmission gap pattern sequence is provided by the UTRAN the UE shall continuously measure GSM cells and search for new GSM cells given in the monitored set.

2) If the UE does not need compressed mode to perform GSM measurements:

- the UE shall measure all GSM cells present in the monitored set
- the relevant requirements for GSM dedicated mode when a TCH channel is assigned in TS 45.008 shall apply.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.5 and A.8.4.1.

8.6.4.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.4.1.4 Method of test

8.6.4.1.4.1 Test 1 initial conditions

Test 1 with BSIC verification required case:

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.6.4.1, 8.6.4.2 and 8.6.4.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3B and 3C shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively.

Table 8.6.4.1: General test parameters for Correct reporting of GSM neighbours in AWGN propagation condition, Test 1

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns - GSM carrier RSSI measurement - GSM Initial BSIC identification		 DL Compressed mode reference pattern 2 in Set 2 Pattern 2	Only applicable for UE requiring compressed mode patterns As specified in table A.22 TS 25.101 section A.5 As specified in section 8.1.2.5.2.1 TS 25.133 table 8.7.
Active cell		Cell 1	
Inter-RAT measurement quantity		GSM Carrier RSSI	
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for event 3B and 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	See Annex I for cell information. Measurement control information is sent before the compressed mode patterns starts.
N Identify abort		66	Taken from table 8.7 in TS 25.133.
T1	s	5	
T2	s	7	
T3	s	5	

Table 8.6.4.2: Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 1)

Parameter	Unit	Cell 1
		T1, T2, T3
UTRA RF Channel Number		Channel 1
CPICH_Ec/Ior	dB	-10
PCCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DPCH_Ec/Ior	dB	Note 1
OCNS_Ec/Ior	dB	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/ 3.84 MHz	-85
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN
Note 1: The DPCH level is controlled by the power control loop. Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.		

Table 8.6.4.3: Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 2)

Parameter	Unit	Cell 2		
		T1	T2	T3
Absolute RF Channel Number		ARFCN 1		
RXLEV	dBm	-Infinity	-75	-85

8.6.4.1.4.2 Test 1 Procedure

1) The RF parameters are set up according to T1 in Table 8.6.4.2 and 8.6.4.7.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
4) SS shall transmit a MEASUREMENT CONTROL message.
5) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in Table 8.6.4.2 and 8.6.4.7 .
6) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C. The measurement reporting delay from the beginning of T2 shall be less than 6.32~~24~~s. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.
7) After 7 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3 in Table 8.6.4.2 and 8.6.4.7.
8) UE shall transmit a MEASUREMENT REPORT message triggered by event 3B. The measurement reporting delay from the beginning of T3 shall be less than 1040~~960~~ ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.
9) After 5 seconds from the beginning of T3, the UE is switched off.
10) Repeat steps 1-9 according to Annex F.6.2 Table F.6.2.8.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
-Measurement quantity for UTRAN quality estimate (10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH Ec/N0
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Required
-Inter-RAT reporting quantity (10.3.7.32)	
-Reporting cell status (10.3.7.61)	Not Present
-CHOICE report criteria	Inter-RAT measurement reporting criteria
-Inter-RAT measurement reporting criteria (10.3.7.30)	
-Parameters required for each event	2
-Inter-RAT event identity (10.3.7.24	Event 3B
-Threshold own system	Not Present
-W	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT
-Maximum number of reported cells	2
-Inter-RAT event identity (10.3.7.24)	Event 3C
-Threshold own system	Not Present
-W	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT
-Maximum number of reported cells	2
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Active (for ~~all~~ two~~three~~ patterns specified in table 8.6.4.1)

8.6.4.1.4.3 Test 2 initial conditions

Test 2 without BSIC verification required case:

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.6.4.4, 8.6.4.5 and 8.6.4.6 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3B and 3C shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively.

Table 8.6.4.4: General test parameters for Correct reporting of GSM neighbours in AWGN propagation condition, Test 2

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns - GSM carrier RSSI measurement		DL Compressed mode reference pattern 2 in Set 2	Only applicable for UE requiring compressed mode patterns As specified in table A.22 TS 25.101 section A.5
Active cell		Cell 1	
Inter-RAT measurement quantity		GSM Carrier RSSI	
BSIC verification required		not required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for event 3B and 3C.
Hysteresis	dB	0	
Time to Trigger	Ms	0	
Filter coefficient		0	
Monitored cell list size		24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	See Annex I for cell information. Measurement control information is sent before the compressed mode patterns starts.
T1	s	5	
T2	s	2	
T3	s	5	

Table 8.6.4.5: Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 1)

Parameter	Unit	Cell 1
		T1, T2, T3
UTRA RF Channel Number		Channel 1
CPICH_Ec/Ior	dB	-10
PCCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DPCH_Ec/Ior	dB	Note 1
OCNS_Ec/Ior	dB	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/ 3.84 MHz	-85
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN
Note 1: The DPCH level is controlled by the power control loop. Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.		

Table 8.6.4.6: Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 2)

Parameter	Unit	Cell 2		
		T1	T2	T3
Absolute RF Channel Number		ARFCN 1		
RXLEV	dBm	-Infinity	-75	-85

8.6.4.1.4.4 Test 2 Procedure

1) The RF parameters are set up according to T1 in Table 8.6.4.5 and 8.6.4.8.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
4) SS shall transmit a MEASUREMENT CONTROL message.
5) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in Table 8.6.4.5 and 8.6.4.8.
6) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C. The measurement reporting delay from the beginning of T2 shall be less than 1040~~960~~ ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.
7) After 2~~7~~ seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3 in Table 8.6.4.5 and 8.6.4.8.
8) UE shall transmit a MEASUREMENT REPORT message triggered by event 3B. The measurement reporting delay from the beginning of T3 shall be less than 1040~~960~~ ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.
9) After 5 seconds from the beginning of T3, the UE is switched off.
10) Repeat steps 1-9 according to Annex F.6.2 Table F.6.2.8.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
-Measurement quantity for UTRAN quality estimate (10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH Ec/N0
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Not Required
-Inter-RAT reporting quantity (10.3.7.32)	
-Reporting cell status (10.3.7.61)	Not Present
-CHOICE report criteria	Inter-RAT measurement reporting criteria
-Inter-RAT measurement reporting criteria (10.3.7.30)	
-Parameters required for each event	2
-Inter-RAT event identity (10.3.7.24)	Event 3B
-Threshold own system	Not Present
-W	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT
-Maximum number of reported cells	2
-Inter-RAT event identity (10.3.7.24)	Event 3C
-Threshold own system	Not Present
-W	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT
-Maximum number of reported cells	2
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Active (for the pattern specified in table 8.6.4.4)

MEASUREMENT REPORT message for inter ñ RAT test cases

These messages are common for all inter-RAT test cases and are described in Annex I.

8.6.4.1.5 Test requirements

8.6.4.1.5.1 TEST 1 With BSIC verification required

Table 8.6.4.7: Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 2), test requirements

Parameter	Unit	Cell 2		
		T1	T2	T3
Absolute RF Channel Number		ARFCN 1		
RXLEV	dBm	-Infinity	-74	-86

For the test to pass, the total number of successful tests shall be at least 90% of the cases, with a confidence level of 95%. The number of succesfull tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.4.1.5.2 TEST 2 Without BSIC verification required

Table 8.6.4.8: Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 2), test requirements

Parameter	Unit	Cell 2		
		T1	T2	T3
Absolute RF Channel Number		ARFCN 1		
RXLEV	dBm	-Infinity	-74	-86

For the test to pass, the total number of successful tests shall be at least 90% of the cases, with a confidence level of 95%. The number of succesfull tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

F.1.5 Requirements for support of RRM

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

<table>
<tr><th>Clause</th><th>Maximum Test System Uncertainty</th><th>Derivation of Test System Uncertainty</th></tr>
<tr><td>8.2 Idle Mode Tasks</td><td></td><td></td></tr>
<tr><td>8.2.2 Cell Re-Selection</td><td></td><td></td></tr>
<tr><td rowspan="2">8.2.2.1 Scenario 1: Single carrier case</td><td>During T1 and T2:
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{oc} ±1.0 dB

During T1:
I_{or} (2) ±0.7 dB

I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB

During T2:
I_{or} (1) ±0.7 dB

I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB</td><td></td></tr>
<tr><td colspan="2">Assumptions:
a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2.

b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other.

c) The relative uncertainties for Ior(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).

d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).

e) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).

f) The absolute uncertainty of Ior(2) at T1 and the relative uncertainty of Ior(1, 3, 4, 5, 6), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(1) at T2 and the relative uncertainty of Ior(2, 3, 4, 5, 6), are uncorrelated to each other.

An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].</td></tr>
</table>

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2.2.2 Scenario 2: Multi carrier case	Channel 1 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (1) ±1.0 dB Channel 1 during T1: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 1 during T2: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 2 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (2) ±1.0 dB Channel 2 during T1: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB Channel 2 during T2: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
	Assumptions: a) to e): Same as for the one-frequency test 8.2.2.1. f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(2) and the relative uncertainty of Ior(5, 6), are uncorrelated to each other. g) The absolute uncertainties for Ior(1) and Ior(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). h) The absolute uncertainties for Ioc(1) and Ioc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2.3 UTRAN to GSM Cell Re-Selection		
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc/RXLEV based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB.
8.2.3.2 Scenario 2: Only UTRA level changed	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.3.1
8.2.4 FDD/TDD cell re-selection	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.3 UTRAN Connected Mode Mobility		
8.3.1 FDD/FDD Soft Handover	<u>During T1 and T2/T3/T4/T5/T6:</u> $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB Relative delay of paths received from cell 2 with respect to cell 1: ±0.5 chips <u>During T1:</u> Already covered above <u>During T2/T3/T4/T5/T6:</u> I_{or} (2) relative to I_{or} (1) ±0.3 dB	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2), are uncorrelated to each other. An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	
8.3.2 FDD/FDD Hard Handover		
8.3.2.1 Handover to intra-frequency cell	During T1 and T2 / T3: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB During T1: Already covered above During T2 / T3: I_{or} (2) relative to I_{or} (1) ±0.3 dB	
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2), are uncorrelated to each other. An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.2.2 Handover to inter-frequency cell	Channel 1 during T1 and T2 / T3: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} (1) ±1.0 dB Channel 2 during T1 and T2 / T3: I_{oc} (2) ±1.0 dB Channel 2 during T1: Already covered above Channel 2 during T2 / T3: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (2) ±0.7 dB	
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) The uncertainty for Ioc(n) and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The absolute uncertainties for Ior(1) and Ior(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). f) The absolute uncertainties for Ioc(1) and Ioc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	
8.3.3 FDD/TDD Handover	TBD	
8.3.4 Inter-system Handover from UTRAN FDD to GSM	TBD	
8.3.5 Cell Re-selection in CELL_FACH		

<table>
<tr><th>Clause</th><th>Maximum Test System Uncertainty</th><th>Derivation of Test System Uncertainty</th></tr>
<tr><td rowspan="2">8.3.5.1 One frequency present in the neighbour list</td><td>During T1 and T2:
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{oc} ±1.0 dB
During T1:
I_{or} (2) ±0.7 dB
I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB
During T2:
I_{or} (1) ±0.7 dB
I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB</td><td></td></tr>
<tr><td colspan="2">Assumptions:
a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2.
b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other.
c) The relative uncertainties for Ior(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
e) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
f) The absolute uncertainty of Ior(2) at T1 and the relative uncertainty of Ior(1, 3, 4, 5, 6), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(1) at T2 and the relative uncertainty of Ior(2, 3, 4, 5, 6), are uncorrelated to each other.
An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].</td></tr>
</table>

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5.2 Two frequencies present in the neighbour list	Channel 1 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (1) ±1.0 dB Channel 1 during T1: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 1 during T2: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 2 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (2) ±1.0 dB Channel 2 during T1: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB Channel 2 during T2: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
	Assumptions: a) to e): Same as for the one-frequency test 8.3.5.1. f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(2) and the relative uncertainty of Ior(5, 6), are uncorrelated to each other. g) The absolute uncertainties for Ior(1) and Ior(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). h) The absolute uncertainties for Ioc(1) and Ioc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5.3 Cell Re-selection to GSM	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc/RXLEV based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB.
8.3.6 Cell Re-selection in CELL_PCH		
8.3.6.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.3.7 Cell Re-selection in URA_PCH		
8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control		
8.4.1 RRC Re-establishment delay	Settings. $\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the CPICH_Ec/Ior ratio. The absolute error of the AWGN is specified as 1.0 dB

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.4.2 Random Access	Settings. $\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{AICH\_E_c}{I_{or}}$ ±0.1 dB Measurements: Power difference. ± 1dB Maximum Power: same as 5.5.2	0.1 dB uncertainty in AICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the AICH_Ec/Ior ratio. The absolute error of the AWGN is specified as 1.0 dB Power difference: Assume symmetric meas error ±1.0 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error. Maximum Power: Assume asymmetric meas error -1.0 dB / 0.7 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error, and +0.7 dB for upper limit
8.4.3 Transport format combination selection in UE	$\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in DPCH_Ec ratio
8.5 Timing and Signalling Characteristics		
8.5.1 UE Transmit Timing	I_{or} ±1.0 dB I_{or1}/I_{or2} ±0.3 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in DPCH_Ec ratio 0.3 dB uncertainty in Ior1/Ior2 based on power meter measurement after the combiner The absolute error of the Ior is specified as 1.0 dB.
8.6 UE Measurements Procedures		
8.6.1 FDD intra frequency measurements		
8.6.1.1 Event triggered reporting in AWGN propagation conditions (R99)	<u>During T1/T4 and T2/T3:</u> $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB <u>During T1/T4 only:</u> Already covered above <u>During T2/T3 only:</u> I_{or} (2) relative to I_{or} (1) ±0.3 dB	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6.1.1 A Event triggered reporting in AWGN propagation conditions (Rel-4 and later)	During T1/T3 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB During T1/T3 only: Already covered above During T2 only: I_{or} (2) relative to I_{or} (1) ±0.3 dB	
8.6.1.1 and 8.6.1.1A	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2), are uncorrelated to each other. An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)	During T0 to T6: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB During T1/T2, T3 and T6: I_{or} (3) relative to I_{or} (1) ±0.3 dB During T3, T4/T5 and T6: I_{or} (2) relative to I_{or} (1) ±0.3 dB	
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [4], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) The relative uncertainties for Ior(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The uncertainty for Ioc and Ior(1) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2, 3), are uncorrelated to each other.	
8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)	TBD	
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD	
8.6.2 FDD inter frequency measurements		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD	
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD	
8.6.3 TDD measurements		
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD	
8.6.4 GSM Measurement	~~TBD~~	
8.6.4.1 Correct reporting of GSM neighbours in AWGN propagation condition	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc/RXLEV based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB.
8.7 Measurements Performance Requirements		
8.7.1 CPICH RSCP		
8.7.1.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.1
8.7.1.2 Inter frequency measurement accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.7.2 CPICH Ec/Io		
8.7.2.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.1
8.7.2.2 Inter frequency measurement accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.7.3 UTRA Carrier RSSI	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc1/Ioc2 based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.3A GSM Carrier RSSI	TBD	
8.7.3C UE Transmitted power	Mean power measurement ±0,7 dB	Downlink parameters are unimportant.
8.7.4 SFN-CFN observed time difference		
8.7.4.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Actual SFN-CFN observed time difference: ±0.5 chips	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.4.2 Inter frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Actual SFN-CFN observed time difference: ±0.5 chips	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.5.1 SFN-SFN observed time difference type 1	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Actual SFN-SFN observed time difference type 1: ±0.5 chips	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.6 UE Rx-Tx time difference	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Rx-Tx Timing Accuracy ±0.5 chip	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB.
8.7.8 P-CCPCH RSCP	TBD	

F.2.4 Requirements for support of RRM

Table F.2.4: Test Tolerances for Radio Resource Management Tests

Clause	Test Tolerance
8.2 Idle Mode Tasks	
8.2.2 Cell Re-Selection	
8.2.2.1 Scenario 1: Single carrier case	During T1 and T2: +0.60 dB for all Cell 1 and 2 Ec/Ior ratios -0.50 dB for all Cell 3, 4 ,5, 6 Ec/Ior ratios +0.03 dB for Ior(3, 4, 5, 6) During T1: -0.27 dB for Ior(1) +0.13 dB for Ior(2) During T2: +0.13 dB for Ior(1) -0.27 dB for Ior(2)
8.2.2.2 Scenario 2: Multi carrier case	Channel 1 during T1 and T2: +0.70 dB for all Cell 1 Ec/Ior ratios -0.80 dB for all Cell 3 and 4 Ec/Ior ratios Channel 1 during T1: -0.01 dB for Ior(1) -0.01 dB for Ior(3, 4) No change for Ioc(1) Channel 1 during T2: +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.80 dB for Ioc(1) Channel 2 during T1 and T2: +0.70 dB for all Cell 2 Ec/Ior ratios -0.80 dB for all Cell 5 and 6 Ec/Ior ratios Channel 2 during T1: +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.80 dB for Ioc(2) Channel 2 during T2: -0.01 dB for Ior(2) -0.01 dB for Ior(5, 6) No change for Ioc(2)
8.2.3 UTRAN to GSM Cell Re-Selection	
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.2.3.2 Scenario 2: Only UTRA level changed	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.2.4 FDD/TDD cell re-selection	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc1/Ioc2
8.3 UTRAN Connected Mode Mobility	

Clause	Test Tolerance
8.3.1 FDD/FDD Soft Handover	<u>During T1 and T2/T3/T4/T5/T6:</u> +0.70 dB for all Cell 1 Ec/Ior ratios Relative delay: {ñ147.5 Ö +147.5} chips <u>During T1:</u> Already covered above <u>During T2/T3/T4/T5/T6:</u> +0.70 dB for all Cell 2 Ec/Ior ratios
8.3.2 FDD/FDD Hard Handover	
8.3.2.1 Handover to intra-frequency cell	<u>During T1 and T2 / T3:</u> +0.70 dB for all Cell 1 Ec/Ior ratios <u>During T1:</u> Already covered above <u>During T2 / T3:</u> +0.70 dB for all Cell 2 Ec/Ior ratios
8.3.2.2 Handover to inter-frequency cell	<u>Channel 1 during T1 and T2 / T3:</u> +0.80 dB for all Cell 1 Ec/Ior ratios <u>Channel 2 during T1:</u> Not applicable <u>Channel 2 during T2 / T3:</u> +0.80 dB for all Cell 2 Ec/Ior ratios
8.3.3 FDD/TDD Handover	TBD
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD
8.3.5 Cell Re-selection in CELL_FACH	
8.3.5.1 One frequency present in the neighbour list	<u>During T1 and T2:</u> +0.60 dB for all Cell 1 and 2 Ec/Ior ratios -0.50 dB for all Cell 3, 4 ,5, 6 Ec/Ior ratios +0.03 dB for Ior(3, 4, 5, 6) <u>During T1:</u> -0.27 dB for Ior(1) +0.13 dB for Ior(2) <u>During T2:</u> +0.13 dB for Ior(1) -0.27 dB for Ior(2)

Clause	Test Tolerance
8.3.5.2 Two frequencies present in the neighbour list	<u>Channel 1 during T1 and T2:</u> +0.60 dB for all Cell 1 Ec/Ior ratios -0.70 dB for all Cell 3 and 4 Ec/Ior ratios <u>Channel 1 during T1:</u> +0.05 dB for Ior(1) +0.05 dB for Ior(3, 4) No change for Ioc(1) <u>Channel 1 during T2:</u> +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.60 dB for Ioc(1) <u>Channel 2 during T1 and T2:</u> +0.60 dB for all Cell 2 Ec/Ior ratios -0.70 dB for all Cell 5 and 6 Ec/Ior ratios <u>Channel 2 during T1:</u> +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.60 dB for Ioc(2) <u>Channel 2 during T2:</u> +0.05 dB for Ior(2) +0.05 dB for Ior(5, 6) No change for Ioc(2)
8.3.5.3 Cell Re-selection to GSM	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.3.6 Cell Re-selection in CELL_PCH	
8.3.6.1 One frequency present in the neighbour list	Same as 8.2.2.1
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2
8.3.7 Cell Re-selection in URA_PCH	
8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2
8.4 RRC Connection Control	
8.4.1 RRC Re-establishment delay	0 dB for $\hat{I}_{or}/I_{oc}$ 0 dB for any_Ec/Ior Zero TT is applied, as level settings are not critical with respect to the outcome of the test.
8.4.2 Random Access	Settings: 0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for AICH_Ec/Ior Measurements: Power difference: ± 1dB Maximum Power: -1dB / +0.7dB
8.4.3 Transport format combination selection in UE	0 dB for DPCH_Ec/Ior
8.5 Timing and Signalling Characteristics	
8.5.1 UE Transmit Timing	TBD
8.6 UE Measurements Procedures	
8.6.1 FDD intra frequency measurements	

Clause	Test Tolerance
8.6.1.1 Event triggered reporting in AWGN propagation conditions (R99)	During T1/T4 and T2/T3: +0.70 dB for all Cell 1 Ec/Ior ratios During T1/T4 only: Already covered above During T2/T3 only: +0.70 dB for all Cell 2 Ec/Ior ratios
8.6.1.1 A Event triggered reporting in AWGN propagation conditions (Rel-4 and later)	During T1/T3 and T2: +0.70 dB for all Cell 1 Ec/Ior ratios During T1/T3 only: Already covered above During T2 only: +0.70 dB for all Cell 2 Ec/Ior ratios
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)	During T0 to T6: +0.70 dB for all Cell 1 Ec/Ior ratios +0.70 dB for all Cell 2 Ec/Ior ratios +0.70 dB for all Cell 3 Ec/Ior ratiosTBD
8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)	TBD
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD
8.6.2 FDD inter frequency measurements	
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD
8.6.3 TDD measurements	
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD
8.7 Measurements Performance Requirements	TBD
8.6.4 GSM measurements	
8.6.4.1 Correct reporting of GSM neighbours in AWGN propagation condition	During T2: + 1 dB for RXLEV During T3: -1 dB for RXLEV
8.7.1 CPICH RSCP	
8.7.1.1 Intra frequency measurements accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 1.0 dB for Ioc
8.7.1.2 Inter frequency measurement accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc1/Ioc2 1.0 dB for Ioc
8.7.2 CPICH Ec/Io	
8.7.2.1 Intra frequency measurements accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.7.2.2 Inter frequency measurement accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.7.3 UTRA Carrier RSSI	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc
8.7.3A GSM Carrier RSSI	TBD
8.7.3B Transport channel BLER	TBD

Clause	Test Tolerance
8.7.3C UE Transmitted power	0.7 dB for mean power measurement by test system
8.7.4 SFN-CFN observed time difference	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc ±0.5 chips for the actual SFN-CFN observed time difference
8.7.5.1 SFN-SFN observed time difference type 1	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc ±0.5 chips for the actual SFN-SFN observed time difference type 1
8.7.6 UE Rx-Tx time difference	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc 0.5 chip for Rx-Tx Timing Accuracy
8.7.7 Observed time difference to GSM cell	TBD
8.7.8 P-CCPCH RSCP	TBD

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2 Idle Mode Tasks			
8.2.2 Cell Re-Selection			
8.2.2.1 Scenario 1: Single carrier case	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	<u>During T1 and T2:</u> Cells 1 and 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Cells 3, 4, 5, 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Ior(3, 4, 5, 6) = -69.73 dBm	<u>During T1 and T2:</u> +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for Ior(3, 4, 5, 6)	<u>During T1 and T2:</u> Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ior(3, 4, 5, 6) + TT
	<u>During T1:</u> Ior(1) = -62.73 dBm Ior(2) = -59.73 dBm	<u>During T1:</u> -0.27 dB for Ior(1) +0.13 dB for Ior(2)	<u>During T1:</u> Ior(1) + TT Ior(2) + TT
	<u>During T2:</u> Ior(1) = -59.73 dBm Ior(2) = -62.73 dBm	<u>During T2:</u> +0.13 dB for Ior(1) -0.27 dB for Ior(2)	<u>During T2:</u> Ior(1) + TT Ior(2) + TT
8.2.2.2 Scenario 2: Multi carrier case	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	<u>Channel 1 during T1 and T2:</u> Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Cells 3 and 4: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	<u>Channel 1 during T1 and T2:</u> +0.70 dB +0.70 dB +0.70 dB +0.70 dB -0.80 dB -0.80 dB -0.80 dB -0.80 dB	<u>Channel 1 during T1 and T2:</u> Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	<u>Channel 1 during T1:</u> Ior(1) = -73.39 dBm Ior(3, 4) = -77.39 dBm Ioc(1) = -70.00 dBm	<u>Channel 1 during T1:</u> -0.01 dB for Ior(1) -0.01 dB for Ior(3,4) 0.00 dB for Ioc(1)	<u>Channel 1 during T1:</u> Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 1 during T2: Ior(1) = -67.75 dBm Ior(3, 4) = -74.75 dBm Ioc(1) = -70.00 dBm	Channel 1 during T2: +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.80 dB for Ioc(1)	Channel 1 during T2: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT
	Channel 2 during T1 and T2: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Cells 5 and 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	Channel 2 during T1 and T2: +0.70 dB +0.70 dB +0.70 dB +0.70 dB -0.80 dB -0.80 dB -0.80 dB -0.80 dB	Channel 2 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 2 during T1: Ior(2) = -67.75 dBm Ior(5, 6) = -74.75 dBm Ioc(2) = -70.00 dBm	Channel 2 during T1: +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.80 dB for Ioc(2)	Channel 2 during T1: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
	Channel 2 during T2: Ior(2) = -73.39 dBm Ior(5, 6) = -77.39 dBm Ioc(2) = -70.00 dBm	Channel 2 during T2: -0.01 dB for Ior(2) -0.01 dB for Ior(5,6) 0.00 dB for Ioc(2)	Channel 2 during T2: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
8.2.3 UTRAN to GSM Cell Re-Selection			
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 0 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = - 5 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ - TT Ior/Ioc = -5.3 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2.3.2 Scenario 2: Only UTRA level changed	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 20 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 20.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = -9 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ - TT Ior/Ioc = -9.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -10.1 dB:
8.2.4 FDD/TDD cell re-selection	TBD		
8.3 UTRAN Connected Mode Mobility	TBD		
8.3.1 FDD/FDD Soft Handover	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	<u>During T1 and T2/T3/T4/T5/T6:</u> Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Relative delay of paths received from cell 2 with respect to cell 1 = {-148 Ö 148} chips	<u>During T1 and T2/T3/T4/T5/T6:</u> +0.70 dB +0.70 dB +0.70 dB +0.70 dB 0.5 chips	<u>During T1 and T2/T3/T4/T5/T6:</u> Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT {-148+TT Ö 148-TT} chips
	<u>During T1:</u> Already covered above	<u>During T1:</u> Covered above	<u>During T1:</u> Already covered above
	<u>During T2/T3/T4/T5/T6:</u> Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	<u>During T2/T3/T4/T5/T6:</u> +0.70 dB +0.70 dB +0.70 dB +0.70 dB	<u>During T2/T3/T4/T5/T6:</u> Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.3.2 FDD/FDD Hard Handover			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.2.1 Handover to intra-frequency cell	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 and T2 / T3: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1 / T2 / T3: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T1 and T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	During T1: Already covered above	During T1: Covered above	During T1: Already covered above
	During T2 / T3: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T2 / T3: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.3.2.2 Handover to inter-frequency cell	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	Channel 1 during T1 and T2 / T3: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	Channel 1 during T1 and T2 / T3: +0.80 dB +0.80 dB +0.80 dB +0.80 dB	Channel 1 during T1 and T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 2 during T1: Not applicable	Channel 2 during T1: Not applicable	Channel 2 during T1: Not applicable
	Channel 2 during T2 / T3: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	Channel 2 during T2 / T3: +0.80 dB +0.80 dB +0.80 dB +0.80 dB	Channel 2 during T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.3.3 FDD/TDD Handover	TBD		
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD		
8.3.5 Cell Re-selection in CELL_FACH			
8.3.5.1 One frequency present in the neighbour list	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	During T1 and T2: Cells 1 and 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 3, 4, 5, 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Ior(3, 4, 5, 6) = -69.73 dBm	During T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for Ior(3, 4, 5, 6)	During T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ior(3, 4, 5, 6) + TT
	During T1: Ior(1) = -62.73 dBm Ior(2) = -59.73 dBm	During T1: -0.27 dB for Ior(1) +0.13 dB for Ior(2)	During T1: Ior(1) + TT Ior(2) + TT
	During T2: Ior(1) = -59.73 dBm Ior(2) = -62.73 dBm	During T2: +0.13 dB for Ior(1) -0.27 dB for Ior(2)	During T2: Ior(1) + TT Ior(2) + TT
8.3.5.2 Two frequencies present in the neighbour list	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	Channel 1 during T1 and T2: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 3 and 4: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB	Channel 1 during T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Channel 1 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 1 during T1: Ior(1) = -71.85 dBm Ior(3, 4) = -76.85 dBm Ioc(1) = -70.00 dBm	Channel 1 during T1: +0.05 dB for Ior(1) +0.05 dB for Ior(3,4) 0.00 dB for Ioc(1)	Channel 1 during T1: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT
	Channel 1 during T2: Ior(1) = -67.75 dBm Ior(3, 4) = -74.75 dBm Ioc(1) = -70.00 dBm	Channel 1 during T2: +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.60 dB for Ioc(1)	Channel 1 during T2: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 2 during T1 and T2: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 5 and 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB	Channel 2 during T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Channel 2 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 2 during T1: Ior(2) = -67.75 dBm Ior(5, 6) = -74.75 dBm Ioc(2) = -70.00 dBm	Channel 2 during T1: +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.60 dB for Ioc(2)	Channel 2 during T1: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
	Channel 2 during T2: Ior(2) = -71.85 dBm Ior(5, 6) = -76.85 dBm Ioc(2) = -70.00 dBm	Channel 2 during T2: +0.05 dB for Ior(2) +0.05 dB for Ior(5,6) 0.00 dB for Ioc(2)	Channel 2 during T2: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
8.3.5.3 Cell Re-selection to GSM	During T1: $\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 0 dB Ioc/RXLEV = 20	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	$\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB: Ioc/RXLEV = 20.3
	During T2: $\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = - 5 dB Ioc/RXLEV = 5	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	$\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ - TT Ior/Ioc = -5.3 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB: Ioc/RXLEV = 4.7

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.6 Cell Re-selection in CELL_PCH			
8.3.6.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 10.27 dB Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ior/Ioc = 10.57 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 2.2 dB Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = 2.5 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.3.7 Cell Re-selection in URA_PCH			
8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control			
8.4.1 RRC Re-establishment delay	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.4.1.1 Test 1	Cell 1, T1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB DCH_Ec/Ior = -17 dB Ior/Ioc = 2.39 dB Cell 1, T2: Ior/Ioc = -infinity Cell 2, T1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Ior/Ioc = 4.39 dB Cell 2, T2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Ior/Ioc = 0.02 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc	Level settings in either direction are not critical with respect to the outcome of the test.
8.4.1.2 Test 2	Cell 1, T1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB DCH_Ec/Ior = -17 dB Ior/Ioc = -3.35 dB Cell 1, T2: Ior/Ioc = -infinity Cell 2, T1: Ior/Ioc = -infinity Cell 2, T2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Ior/Ioc = 0.02 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc	Level settings in either direction are not critical with respect to the outcome of the test.
8.4.2 Random Access	RACH power difference nominal 3dB ± 2dB UE setting uncertainty	Measurement TT:Power difference ± 1dBMaximum Power-1dB / +0.7dB	Test parameter settings unchanged.Power measurement:Upper limit +TT Lower limit -TT
8.4.3 Transport format combination selection in UE	DL Power control is ON so DPCH_Ec/Ior depends on TPC commands sent by UE	0 dB for DPCH_Ec/Ior	No test requirements for DPCH_Ec/Ior
8.5 Timing and Signalling Characteristics	TBD		
8.5.1 UE Transmit Timing	TBD		
8.6 UE Measurements Procedures			
8.6.1 FDD intra frequency measurements			
8.6.1.1 Event triggered reporting in AWGN propagation conditions	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
(R99)	During T1 to T4: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1 to T4: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T1 to T4: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	During T1/T4 only : Already covered above	During T1/T4 only: Covered above	During T1/T4 only: Already covered above
	During T2/T3 only: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T2/T3 only: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T2/T3 only: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.1 A Event triggered reporting in AWGN propagation conditions (Rel-4 and later)	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 / T2 / T3: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1 / T2 / T3: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T1 / T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	During T1/T3 only : Already covered above	During T1/T3 only: Covered above	During T1/T3 only: Already covered above
	During T2 only: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T2 only: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T2 only: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T0 to T6: Cell 1, Cell 2 and Cell 3: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T0 to T6: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T0 to T6: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)	TBD	TBD	TBD
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD		
8.6.2 FDD inter frequency measurements	TBD		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD		
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD		
8.6.3 TDD measurements	TBD		
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD		
8.6.4 GSM measurements			
8.6.4.1 Correct reporting of GSM neighbours in AWGN propagation condition	During T2 RXLEV=-75 dBm During T3 RXLEV=-85 dBm	During T2: + 1 dB for RXLEV During T3: -1 dB for RXLEV	During T2 and T3 RXLEV + TT Only RXLEV is a critical parameter. UE measurement accuracy for GSM Carrier RSSI is ±4 dB in this test. During T2: measured GSM Carrier RSSI ± uncertainty of RXLEV setting shall be above ñ80 dBm (Threshold for GSM). => TT=+1 dB for RXLEV During T3: measured GSM Carrier RSSI ± uncertainty of RXLEV setting shall be below ñ80 dBm (Threshold for GSM). => TT=-1 dB for RXLEV
8.7 Measurements Performance Requirements	~~TBD~~		
8.7.1 CPICH RSCP			
8.7.1.1 Intra frequency measurements accuracy	see table 8.7.1.1.1.1 andtable 8.7.1.1.1.2	±1 dB for Ioc±0.3 dB for Ior/Ioc±0.1dB forÖ .._Ec/Ior	Any TT applied to the nominal setting shall fulfil:Test 1 (absolute and relative): Io shall not go below -69dBm Test 2(absolute and relative): Io shall not go above -50 dBmTest 3 (absolute and relative): Io shall not go below -94 dBm Ior/Ioc + TTTT on top of UE measurement accuracy:Absolute±1.0 dB for Ioc±0.3 dB for Ior/Ioc ±0.1dB for CPICH_Ec/Ior ∑ 1.4dBRelative±0.3 dB for Ior/Ioc (cell1)±0.3 dB for Ior/Ioc (cell2)±0.1dB for CPICH_Ec/Ior (cell1)±0.1dB for CPICH_Ec/Ior (cell2)∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.1.2 Inter frequency measurement accuracy	See table 8.7.1.2.1.1 andtable 8.7.1.2.1.2	±1 dB for Ioc±0.3 dB for Ioc1/Ioc2±0.3 dB for Ior/Ioc±0.1dB for Ö .._Ec/Ior	Any TT applied to the nominal setting shall fulfil:Test 1: Io shall not go above -50 dBmTest 2: Io shall not go below -94 dBmIor/Ioc + TTTT on top of UE measurement accuracy:±0.3 dB for Ioc1/Ioc2±0.3 dB for Ior/Ioc (cell1)±0.3 dB for Ior/Ioc (cell2)±0.1dB for CPICH_Ec/Ior (cell1)±0.1dB for CPICH_Ec/Ior (cell2)∑ 1.1 dB
8.7.2 CPICH Ec/Io			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2.1 Intra frequency measurements accuracy	table 8.7.2.1.1.1 and table 8.7.2.1.1.2	±1 dB for Ioc ±0.3 dB for Ior/Ioc ±0.1dB for Ö .._Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1(absolute and relative): Io shall not go above -50 dBm Test 2 (absolute and relative): Io shall not go below -87dBm Test 3 (absolute and relative): Io shall not go below -94 dBm CPICH Ec/Io shall stay in the UE accuracy ranges Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute ±0.3 dB for Ior/Ioc ±0.1dB for CPICH_Ec/Ior ∑ 0.4dB Relative Ioc1=Ioc2 ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2.2 Inter frequency measurement accuracy	table 8.7.2.2.2.1 and table 8.7.2.2.2.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Ior/Ioc ±0.1dB for Ö .._Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1: Io shall not go above -50 dBm Test 2: Io shall not go below -87 dBm Test 3: Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Ioc1=Ioc2. ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8 dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.3 UTRA Carrier RSSI	Table 8.7.3.1.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Îor/Ioc	Any TT applied to the nominal setting shall fulfil: Test 1 (absolute): Io shall not go above -50 dBm Test 2 (absolute): Io shall not go below -69 dBm Test 3 (absolute and relative): Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute tests: Test 1: Max TT= Io_{max} ñ $Io_{nominal}$ $Io_{nominal}$ = -51.15 dBm Io_{max} = Ioc_{max} +Ior_{max} = (-53.5 dBm + 1dB) + (-52.5 dBm ñ 1.45 dB + 0.3 dB) = -50.0 dBm => Max TT = 1.15 dB Min TT = Io_{min} - Io Io_{min} = Ioc_{min} + Ior_{min} = (-53.5 dBm ñ1 dB) + (-54.5 dBm ñ 1.45 dB ñ 0.3 dB) = - 52.3 dBm => Min TT = -1.15 dB Test 2: Max TT= Io_{max} ñ $Io_{nominal}$ $Io_{nominal}$ = - 67.9 dBm Io_{max} = Ioc_{max} + Ior_{max} = (-69.27 dBm + 1dB) + (-68.27 dBm ñ 4.4 dB + 0.3 dB) = -66.8 dBm => Max TT = 1.1 dB Min TT = Io_{min} - Io Io_{min} = Ioc_{min} + Ior_{min} = (-69.27 dBm ñ 1 dB) + (-70.27 dBm ñ 4.4 dB ñ 0.3 dB) = -69.0 dBm => Min TT = -1.1 dB Test 3 (Band I): Max TT= Io_{max} ñ $Io_{nominal}$ $Io_{nominal}$ = -93 dBm Io_{max} = Ioc_{max} + Ior_{max} + No = (-93.46 dBm + 1dB) + (-92.46 dBm ñ 9.24 dB +0.3 dB) + -99 dBm = -91.2 => Max TT = 1.8 dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.3A GSM Carrier RSSI	TBD		
8.7.3B Transport channel BLER	TBD		
8.7.3C UE Transmitted power	Accuracy upper limit Accuracy lower limit Depends on PUEMAX see table 8.7.3C.2.1	0.7 dB	Formula: Upper accuracy limit + TT Lower accuracy limit ñ TT Add and subtract TT to all the values in table 8.7.3C.2.1.
8.7.4 SFN-CFN observed time difference	T able 8.7.4.1.2 and Table 8.7.4.2.2	±1.0 dB for Ioc ±0.3 dB for Ior/Ioc ±0.5 chips for the actual SFN-CFN observed time difference	Intra and inter frequency case: Test 1: Io shall not go above -50 dBm Test 2: No restrictions on Io value Test 3: Io shall not go below -94 dBm (Band 1), or below ñ92 dBm (Band II) or below ñ91 dBm (Band III) ŒÊr/Ioc + TT TT on top of UE measurements accuracy: SFN-CFN observed time difference: 1.0 chips + TT
8.7.5.1 SFN-SFN observed time difference type 1	T able 8.7.5.1.2	±1.0 dB for Ioc ±0.3 dB for Ior/Ioc ±0.5 chips for the actual SFN-SFN observed time difference	Test 1: Io shall not go above -50 dBm Test 2: No restrictions on Io value Test 3: Io shall not go below -94 dBm (Band 1), or below ñ92 dBm (Band II) or below ñ91 dBm (Band III) ŒÊr/Ioc + TT TT on top of UE measurements accuracy: SFN-SFN observed time difference: 1.0 chips + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.6 UE Rx-Tx time difference	*Io ñ10.9 dB = Ioc,* Test 1: Io = -94 dBm Test2 : Io = -72dBm Test3 : Io = -50dBm Timing Accuracy ± 1.5 chip	1 dB for Ioc 0.3 dB for Ior/Ioc 0.5 chip for timing accuracy	Test 1: Io = -92.7 dBm, Ioc = -103.6 dBm Formula: $Ioc*(1-TT_{Ioc}+ (Ior/Ioc-TT_{Ior/Ioc})) \geq -94$ Test 2: unchanged (no critical RF parameters) Test 3: Io = -51.3 dBm, Ioc = -62.2 dBm Formula: $Ioc*(1+TT_{Ioc}+ (Ior/Ioc+TT_{Ior/Ioc})) \leq -50$ Timing accuracy ±2.0 chip Formulas: Upper limit +TT Lower limit ñTT
8.7.7 Observed time difference to GSM cell	TBD		
8.7.8 P-CCPCH RSCP	TBD		

3GPP TSG-T1 Meeting #25 **Tdoc ⌘T1-041824**
Malta, 1st November ñ 5th November

CR-Form-v7

CHANGE REQUEST

⌘ **34.121**	**CR** 450	⌘ **rev**	**-**	⌘	Current version: **5.5.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘ Correction to pathloss indicator		
Source:	⌘ Anritsu		
Work item code:	⌘	***Date:*** ⌘	3/11/2004
Category:	⌘ **F**	***Release:*** ⌘	Rel-5
	Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*	

Reason for change:	⌘ Pathloss measurement reports are not required in tests. In addition, T1-040827 and T1-040840 are already changed the pathloss to be false in Measurement Control Messages. But, T1-041204 modified with misalign values in Measurement control messages.
Summary of change:	⌘ The pathloss in the measurement control messages are changed to False The pathloss in the measurement report message is changed to absent. In addition, measurement report messages in Annex I are corrected
Consequences if not approved:	⌘ UE will not be tested properly.

Clauses affected:	⌘ 8.3.2,8.7.1.2.1,8.7.2.1.1,8.7.2.2.2,8.7.3.1,8.7.4.1,8.7.4.2,Annex I				
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘ This CR applies for Rel-99 and later releases.				

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.2 FDD/FDD Hard Handover

8.3.2.1 FDD/FDD Hard Handover to intra-frequency cell

8.3.2.1.1 Definition and applicability

The hard handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCCH.

The requirements and this test apply to the FDD UE.

8.3.2.1.2 Minimum requirement

The interruption time shall be less than 110 ms in CELL_DCH state in the single carrier case. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95 %.

The hard handover delay $D_{handover}$ equals the RRC procedure delay defined in TS 25.331 clause 13.5.2 plus the interruption time stated in TS 25.133 clause 5.2.2.2 as follows:

The interruption time, i.e. the time between the last TTI containing a transport block on the old DPDCH and the time the UE starts transmission of the new uplink DPCCH, is depending on whether the target cell is known for the UE or not.

If intra-frequency hard handover is commanded or inter-frequency hard handover is commanded when the UE does not need compressed mode to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt1}$

$T_{interrupt1}=T_{IU}+40+20*KC+150*OC + 10*F_{max}$ ms

where

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

KC is the number of known target cells in the message, and

OC is the number of target cells that are not known in the message.

F_{max} denotes the maximum number of radio frames within the transmission time intervals of all transport channels that are multiplexed into the same CCTrCH.

Note: The figure 40 ms is the time required for measuring the downlink DPCCH channel as stated in TS 25.214 clause 4.3.1.2.

In the interruption requirement $T_{interrupt1}$ a cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set
- the cell has been measured by the UE during the last 5 seconds and the SFN of the cell has been decoded by the UE.

The normative reference for this requirement is TS 25.133 [2] clauses 5.2.2 and A.5.2.1.

8.3.2.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.2.1.4 Method of test

8.3.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in tables 8.3.2.1.1 to 8.3.2.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used, and that CPICH Ec/Io and SFN-CFN observed timed difference shall be reported together with Event 1A. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a PHYSICAL CHANNEL RECONFIGURATION with activation time "now" with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined in TS 25.331 [8].

N312 shall have the smallest possible value i.e. only one insync is required.

Table 8.3.2.1.1: General test parameters for Handover to intra-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in clause C.3.1 and C.2.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range		dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting deactivation threshold			0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	5	
T2		s	5	
T3		s	5	

Table 8.3.2.1.2: Cell specific test parameters for Handover to intra-frequency cell

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
CPICH_Ec/Ior	dB	-10			-10		
PCCPCH_Ec/Ior	dB	-12			-12		
SCH_Ec/Ior	dB	-12			-12		
PICH_Ec/Ior	dB	-15			-15		
DPCH_Ec/Ior	dB	Note1	Note1	Note3	N/A	N/A	Note1
OCNS_Ec/Ior	dB	Note2	Note2	Note2	-0.941	-0.941	Note2
$\hat{I}_{or}/I_{oc}$	dB	0	6.97		-Infinity	5.97	
$\hat{I}_{or}$ *(Note 4)*	dBm	-70.00	-63.03		-Infinity	-64.03	
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/Io	dB	-13			-Infinity	-14	
Propagation Condition		AWGN					

Note 1: The DPCH level is controlled by the power control loop
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.
Note 3: The DPCH may not be power controlled by the power control loop.
Note 4: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.2.1.4.2 Procedure

1) The RF parameters are set up according to T1 in table 8.3.2.1.3.
2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) 5 seconds after step 4 has completed, the SS shall switch the power settings from T1 to T2 in table 8.3.2.1.3.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1A

7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time set to "now". SS shall transmit the whole message such that it will be available at the UE no later than a period equals to the RRC procedure delay (= 80 ms) prior to the beginning of T3.

8) After 5 seconds from the beginning of time period T2, the SS shall switch the power settings from T2 to T3 in table 8.3.2.1.3.

9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCCH to cell 2 less than 110 ms from the beginning of time period T3 then the number of successful tests is increased by one.

10) After 5 seconds from the beginning of time period T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

11) Repeat step 1-10 until the confidence level according to annex F.6.2 is achieved

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity (10.3.7.41)	Intra-frequency measurement Not Present 0 FDD CPICH_Ec/N0
-Reporting quantities for active set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE report criteria -Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event	Not Present Not Present Intra-frequency measurement reporting criteria 2
-Intra-frequency event identity -Triggering condition 2 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status -Maximum number of reported cells -Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency	Event 1A Active set cells and monitored set cells 3 dB Not Present 1.0 0 dB Not Present 0 Not Present 0 ms Infinity 0 ms (Note 2) -Report cells within active set and/or monitored set cells on used frequency 2 Event 1B Active set cells and monitored set cells 3 dB Not Present 1.0 0 dB Not Present

Information Element/Group name	Value/Remark
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	Not Present
-Reporting cell status	
-Report cells within active set and/or monitored set cells on used frequency	
-Maximum number of reported cells	2
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL. Note 2: Reporting interval = 0 ms means no periodical reporting	

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	"now"
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE mode	FDD
-UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 2
-UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE *channel requirement*	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE mode	FDD
-DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
-CHOICE mode	FDD
-Scrambling code type	Long
-Scrambling code number	0 (0 to 16777215)
-Number of DPDCH	Not Present(1)
-Spreading factor	64
-TFCI existence	TRUE
-Number of FBI bit	Not Present(0)
-Puncturing Limit	1
Downlink radio resources	
-CHOICE *mode*	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-DPC mode	0 (single)
-CHOICE mode	FDD
-Power offset $P_{Pilot\text{-}DPDCH}$	0
-DL rate matching restriction information	Not Present
-Spreading factor	128
-Fixed or Flexible Position	Fixed
-TFCI existence	TRUE
-CHOICE SF	128
-Number of bits for Pilot bits(SF=128,256)	8
-CHOICE mode	FDD
-DPCH compressed mode info (10.3.6.33)	Not Present
-TX Diversity mode (10.3.6.86)	None
-SSDT information (10.3.6.77)	Not Present
-Default DPCH Offset Value (10.3.6.16)	0

Information Element	Value/Remark
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
-Primary scrambling code	350
-PDSCH with SHO DCH info (10.3.6.47)	Not Present
-PDSCH code mapping (10.3.6.43)	Not Present
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	0 chips
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No change
-TPC combination index	0
- SSDT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Not present
- SFN-SFN observed time difference	Checked that this IE is present
- Cell synchronisation information	
- Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	100
- CPICH Ec/N0	Checked that this IE is present
- CPICH RSCP	Checked that this IE is present
- Cell measured results	
- Cell Identity	Not present
- Cell synchronisation information	
- Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
- CPICH Ec/N0	Checked that this IE is present
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent~~present~~
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is present

8.3.2.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.2.1.3: Test requirements for Handover to intra-frequency cell

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
CPICH_Ec/Ior	dB	-9.3			-9.3		
PCCPCH_Ec/Ior	dB	-11.3			-11.3		
SCH_Ec/Ior	dB	-11.3			-11.3		
PICH_Ec/Ior	dB	-14.3			-14.3		
DPCH_Ec/Ior	dB	Note1	Note1	Note3	N/A	N/A	Note1
OCNS_Ec/Ior	dB	Note2	Note2	Note2	-1.13	-1.13	Note2
$\hat{I}_{or}/I_{oc}$ *(Note 4)*	dB	0	7.0		-Infinity	6.0	
$\hat{I}_{or}$	dBm	-70.0	-63.0		-Infinity	-64.0	
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/Io *(Note 4)*	dB	-12.3			-Infinity	-13.3	
Propagation Condition		AWGN					

Note 1: The DPCH level is controlled by the power control loop
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or} .
Note 3: The DPCH may not be power controlled by the power control loop.
Note 4: These parameters are not directly settable, but are derived by calculation from the settable parameters.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.2.2 FDD/FDD Hard Handover to inter-frequency cell

8.3.2.2.1 Definition and applicability

The hard handover delay is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCCH.

The requirements and this test apply to the FDD UE.

8.3.2.2.2 Minimum requirement

The interruption time shall be less than 140 ms in CELL_DCH state in the dual carrier case. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95 %.

The hard handover delay $D_{handover}$ equals the RRC procedure delay defined in TS 25.331 clause 13.5.2 plus the interruption time stated in TS 25.133 clause 5.2.2.2 as follows:

If inter-frequency hard handover is commanded and the UE needs compressed mode to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt2}$

$T_{interrupt2} = T_{IU}+40+50*KC+150*OC + 10*F_{max}$ ms

In the interruption requirement $T_{interrupt2}$ a cell is known if:

- the cell has been measured by the UE during the last 5 seconds.

The phase reference is the primary CPICH.

The normative reference for this requirement is TS 25.133 [2] clauses 5.2.2 and A.5.2.2.

8.3.2.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.2.2.4 Method of test

8.3.2.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in tables 8.3.2.2.1 to 8.3.2.2.3 below. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a PHYSICAL CHANNEL RECONFIGURATION with activation time "now" with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined in TS 25.331 [8].

N312 shall have the smallest possible value i.e. only one insync is required.

Table 8.3.2.2.1: General test parameters for Handover to inter-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in clause C.3.1 and C.2.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 1	As specified in TS 34.121 clause C.5.
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold non used frequency		dB	-18	Absolute Ec/I0 threshold for event 2C
Hysteresis		dB	0	
W non-used frequency			1	Applicable for event 2C
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	5	
T2		s	10	
T3		s	5	

Table 8.3.2.2.2: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1			Channel 2		
CPICH_Ec/Ior	dB	-10			-10		
PCCPCH_Ec/Ior	dB	-12			-12		
SCH_Ec/Ior	dB	-12			-12		
PICH_Ec/Ior	dB	-15			-15		
DPCH_Ec/Ior	dB	Note1	Note1	Note3	N/A	N/A	Note1
OCNS_Ec/Ior	dB	Note2	Note2	Note2	-0.941	-0.941	Note2
$\hat{I}_{or}/I_{oc}$	dB	0			-Infinity	-1.8	-1.8
$\hat{I}_{or}$ *(Note 4)*	dBm	-70.0			-Infinity	-71.8	-71.8
I_{oc}	dBm/ 3.84 MHz	-70					
CPICH_Ec/Io	dB	-13			-Infinity	-14	
Propagation Condition		AWGN					

Note 1: The DPCH level is controlled by the power control loop
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or} .
Note 3: The DPCH may not be power controlled by the power control loop.
Note 4: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.2.2.4.2 Procedure

1) The RF parameters are set up according to T1 in table 8.3.2.2.3.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 with Compressed mode parameters as in Table 8.3.2.2.1.
4) SS shall transmit a MEASUREMENT CONTROL messages.
5) 5 seconds after step 4 has completed, the SS shall switch the power settings from T1 to T2 in table 8.3.2.2.3.
6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C
7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time "now". SS shall transmit the whole message such that will be is available at the UE no later than a period equals to the RRC procedure delay (= 80 ms) prior to the beginning of T3.
8) After 10 seconds from the beginning of time period T2, the SS shall switch the power settings from T2 to T3 in table 8.3.2.2.3.
9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCCH to cell 2 less than 140 ms from the beginning of time period T3 then the number of successful tests is increased by one.
10) After 5 seconds from the beginning of time period T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
11) Repeat step 1-10 until the confidence level according to annex F.6.2 is achieved

Specific Message Contents

All messages indicated belowabove shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message, event 2C (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 2 Setup AM RLC Event trigger Not Present

-CHOICE *Measurement type*
 -Inter-frequency measurement (10.3.7.16)
  -Inter-frequency measurement objects list (10.3.7.13)
   - CHOICE Inter-frequency cell removal
   - New Inter frequency cells
    - Inter frequency cell id
    - Frequency info
     - CHOICE mode
      - UARFCN uplink(Nu)
      - UARFCN downlink(Nd)
 	
    - Cell info
     - Cell individual offset
     - Reference time difference to cell
     - Read SFN indicator
     - CHOICE mode
      - Primary CPICH info
       - Primary scrambling code
      - Primary CPICH Tx Power
 	
      - Tx Diversity Indicator
   - Cell for measurement
  -Inter-frequency measurement quantity (10.3.7.18)
   -CHOICE reporting criteria
   -Inter-frequency reporting criteria
    -Filter coefficient
    -CHOICE mode
     -Measurement quantity for frequency quality estimate
	Inter-frequency measurement
	
	Not Present
	
	0
	
	FDD
	Not Present
	Same frequency as "Channel2" in Table 8.3.2.2.2
	
	Not Present
	Not Present
	TRUE
	FDD
	
	Set to Primary scrambling code of Cell2
	Set to Primary CPICH Tx Power of Cell2 described in Table 8.3.2.2.2
	FALSE
	Not Present
	
	Inter-frequency reporting criteria
	
	0
	FDD
	CPICH Ec/N0

-Inter-frequency reporting quantity (10.3.7.21)
   -UTRA Carrier RSSI
   -Frequency quality estimate
   -Non frequency related cell reporting quantities (10.3.7.5)
    -Cell synchronisation information reporting indicator
    -Cell Identity reporting indicator
    -CHOICE mode
     -CPICH Ec/N0 reporting indicator
     -CPICH RSCP reporting indicator
     -Pathloss reporting indicator
	
	FALSE
	FALSE
	
	TRUE
	TRUE
	FDD
	TRUE
	TRUE
	FALSE

-Reporting cell status (10.3.7.61)
  -Measurement validity (10.3.7.51)
  -Inter-frequency set update (10.3.7.22)
  -CHOICE report criteria
	Not Present
	Not Present
	Not Present
	Inter-frequency measurement reporting criteria

-Inter-frequency measurement reporting criteria (10.3.7.19)
    -Parameters required for each event
    -Inter-frequency event identity (10.3.7.14)
    -Threshold used frequency
    -W used frequency
    -Hysteresis
    -Time to trigger
    -Reporting cell status (10.3.7.61)
     -CHOICE reported cell
	
	1
	Event 2C
	Not Present
	Not Present
	0 dB
	0 ms
	
	Report cells within monitored set on non-

Information Element/Group name	Value/Remark
	used frequency
-Maximum number of reported cells per reported non-used frequency	1
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-18 dB
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	"now"
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
>RB with PDCP information list	Not Present
>>RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE mode	FDD
-UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 2
-UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE *channel requirement*	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE mode	FDD
-DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
-CHOICE mode	FDD
-Scrambling code type	Long
-Scrambling code number	0 (0 to 16777215)
-Number of DPDCH	Not Present(1)
-Spreading factor	64
-TFCI existence	TRUE
-Number of FBI bit	Not Present(0)
-Puncturing Limit	1
Downlink radio resources	
-CHOICE *mode*	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-DPC mode	0 (single)
-CHOICE mode	FDD
-Power offset $P_{Pilot-DPDCH}$	0
-DL rate matching restriction information	Not Present
-Spreading factor	128
-Fixed or Flexible Position	Fixed
-TFCI existence	TRUE
-CHOICE SF	128
-Number of bits for Pilot bits(SF=128,256)	8
-CHOICE mode	FDD
-DPCH compressed mode info (10.3.6.33)	
- Transmission gap pattern sequence	1

Information Element	Value/Remark
- TGPSI	1
- TGPS Status Flag	deactivate
- TGCFN	Not Present
- Transmission gap pattern sequence configuration parameters	Not Present
-TX Diversity mode (10.3.6.86)	None
-SSDT information (10.3.6.77)	Not Present
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
-Primary scrambling code	350
-PDSCH with SHO DCH info (10.3.6.47)	Not Present
-PDSCH code mapping (10.3.6.43)	Not Present
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	0 chips
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No change
-TPC combination index	0
- SSDT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Inter-frequency measured results	
- Frequency Info	Checked that this IE is present
- Inter-freqcell measured results list	
- Cell measured results	
- Cell Identity	Not present
- Cell synchronisation information	
- Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
- CPICH Ec/N0	Checked that this IE is present
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent~~present~~
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is present

8.3.2.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.2.2.3: Test requirements for Handover to inter-frequency cell

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1			Channel 2		
CPICH_Ec/Ior	dB	-9.2			-9.2		
PCCPCH_Ec/Ior	dB	-11.2			-11.2		
SCH_Ec/Ior	dB	-11.2			-11.2		
PICH_Ec/Ior	dB	-14.2			-14.2		
DPCH_Ec/Ior	dB	Note1	Note1	Note3	N/A	N/A	Note1
OCNS_Ec/Ior	dB	Note2	Note2	Note2	-1.16	-1.16	Note2
$\hat{I}_{or}/I_{oc}$ *(Note 4)*	dB	0			-Infinity	-1.8	-1.8
$\hat{I}_{or}$	dBm	-70.0			-Infinity	-71.8	-71.8
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/Io *(Note 4)*	dB	-12.2			-Infinity	-13.2	
Propagation Condition		AWGN					

Note 1: The DPCH level is controlled by the power control loop
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.
Note 3: The DPCH may not be power controlled by the power control loop.
Note 4: These parameters are not directly settable, but are derived by calculation from the settable parameters.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

{Unchanged Sections are clipped here}

8.7.1 CPICH RSCP

8.7.1.1 Intra frequency measurements accuracy

8.7.1.1.1 Absolute accuracy requirement

8.7.1.1.1.1 Definition and applicability

The absolute accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the actual CPICH RSCP power from same cell.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.1.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

- CPICH_RSCP1$|_{dBm}$ ≥ -114 dBm for Band I.
- CPICH_RSCP1$|_{dBm}$ ≥ -112 dBm for Band II,
- CPICH_RSCP1$|_{dBm}$ ≥ -111dBm for Band III.

$$- \left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \le 20dB$$

Table 8.7.1.1.1.1: CPICH_RSCP Intra frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_RSCP	dBm	±6	±9	-94...-70	-92...-70	-91...-70
	dBm	±8	±11	-70...-50	-70...-50	-70...-50

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.1 and A.9.1.1.2.

8.7.1.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP absolute measurement accuracy is within the specified limits in clause 8.7.1.1.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.1.1.4 Method of test

8.7.1.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. CPICH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Table 8.7.1.1.1.2: CPICH RSCP Intra frequency parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-75.54		-59.98		-97.47	
	Band II						-95.47	
	Band III						-94.47	
$\hat{I}_{or}/I_{oc}$		dB	4	0	9	0	0	-6.53
CPICH RSCP, Note 1	Band I	dBm	-81.5	-85.5	-60.98	-69.88	-107.47	-114.0
	Band II						-105.47	-112.0
	Band III						-104.47	-111.0
Io, Note 1	Band I	dBm/3.84 MHz	-69		-50		-94	
	Band II						-92	
	Band III						-91	
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

8.7.1.1.1.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.4.

2) SS shall transmit MEASUREMENT CONTROL message.

3) UE shall transmit periodically MEASUREMENT REPORT messages.

4) SS shall check CPICH_RSCP value in MEASUREMENT REPORT messages. CPICH RSCP power of Cell 1 r and Cell 2 eported by UE is compared to actual CPICH RSCP power for each MEASUREMENT REPORT message.

5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated.

6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Intra-frequency measurement - Intra-frequency measurement objects list -Intra-frequency measurement quantity -Filter coefficient -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity -Reporting quantities for active set cells -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for monitored set cells -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for detected set cells -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -CHOICE *report criteria* -Amount of reporting -Reporting interval	 5 SETUP Acknowledged mode RLC Periodical reporting Not Present Intra-frequency measurement Not Present 0 FDD CPICH RSCP TRUE TRUE FDD TRUE TRUE FALSE FALSE TRUE FDD TRUE TRUE FALSE Not Present Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Periodical reporting criteria Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.1.1.5 Test requirements

Table 8.7.1.1.1.3: CPICH_RSCP Intra frequency absolute accuracy, test requirement

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_RSCP	dBm	±7.4	±10.4	-94...-70	-92...-70	-91...-70
	dBm	±9.4	±12.4	-70...-50	-70...-50	-70...-50

Table 8.7.1.1.1.4: CPICH RSCP Intra frequency test parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-74.54		-61,6		-96.47	
	Band II						-94.47	
	Band III						-93.47	
$\hat{I}_{or}/I_{oc}$		dB	4.3	0.3	9.3	0.3	0.3	-6.23
CPICH RSCP, Note 1	Band I	dBm	-80.2	-84.2	-62.3	-71.3	-106.17	-112.7
	Band II						-104.17	-110.7
	Band III						-103.17	-109.7
Io, Note 1	Band I	dBm / 3.84 MHz	-67.8		-51,4		-92,8	
	Band II						-90.8	
	Band III						-89.8	
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

The reported values for the absolut intra frequency CPICH RSCP measurement shall meet the requirements in table 8.7.1.1.1.5.

Table 8.7.1.1.1.5: CPICH_RSCP Intra frequency absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3 (Band I)	Test 3 (Band II)	Test 3 (Band III)
Normal Conditions					
Lowest reported value (Cell 1)	CPICH_RSCP_26	CPICH_RSCP_44	CPICH_RSCP_2	CPICH_RSCP_4	CPICH_RSCP_5
Highest reported value (Cell 1)	CPICH_RSCP_45	CPICH_RSCP_63	CPICH_RSCP_17	CPICH_RSCP_19	CPICH_RSCP_20
Lowest reported value (Cell 2)	CPICH_RSCP_22	CPICH_RSCP_35	CPICH_RSCP_0	CPICH_RSCP_0	CPICH_RSCP_0
Highest reported value (Cell 2)	CPICH_RSCP_41	CPICH_RSCP_54	CPICH_RSCP_10	CPICH_RSCP_12	CPICH_RSCP_13
Extreme Conditions					
Lowest reported value (Cell 1)	CPICH_RSCP_23	CPICH_RSCP_41	CPICH_RSCP_0	CPICH_RSCP_1	CPICH_RSCP_2
Highest reported value (Cell 1)	CPICH_RSCP_48	CPICH_RSCP_66	CPICH_RSCP_20	CPICH_RSCP_22	CPICH_RSCP_23
Lowest reported value (Cell 2)	CPICH_RSCP_19	CPICH_RSCP_32	CPICH_RSCP_0	CPICH_RSCP_0	CPICH_RSCP_0
Highest reported value (Cell 2)	CPICH_RSCP_44	CPICH_RSCP_57	CPICH_RSCP_13	CPICH_RSCP_15	CPICH_RSCP_16

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1.2 Relative accuracy requirement

8.7.1.1.2.1 Definition and applicability

The relative accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.1.1.2.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

- CPICH_RSCP1,2$|_{dBm}$ ≥ -114 dBm for Band I,.
- CPICH_RSCP1,2$|_{dBm}$ ≥ -112 dBm for Band II,
- CPICH_RSCP1,2$|_{dBm}$ ≥ -111 dBm for Band III.
- $\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \le 20dB$
- $\left. \frac{I_o}{\left(\hat{I}_{or}\right)} \right|_{in\ dB} - \left. \left(\frac{CPICH\_E_c}{I_{or}} \right) \right|_{in\ dB} \le 20dB$

Table 8.7.1.1.2.1: CPICH_RSCP Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_RSCP	dBm	±3	±3	-94...-50	-92...-50	-91...-50

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.2 and A.9.1.1.2.

8.7.1.1.2.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP relative measurement accuracy is within the specified limits in clause 8.7.1.1.2.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.1.2.4 Method of test

8.7.1.1.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. CPICH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

8.7.1.1.2.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.2.3.

2) SS shall transmit MEASUREMENT CONTROL message.

3) UE shall transmit periodically MEASUREMENT REPORT messages.

4) SS shall check CPICH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. CPICH RSCP power value measured from Cell 1 is compared to CPICH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

5) The result of step 3) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.

6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.2.3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.2.3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated.

7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement in clause 8.7.1.1.1.4.2 is used.

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.1.2.5 Test requirements

Table 8.7.1.1.2.2: CPICH_RSCP Intra frequency relative accuracy, test requirements

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_RSCP	dBm	±3.8	±3.8	-94...-50	-92...-50	-91...-50

Table 8.7.1.1.2.3: CPICH RSCP Intra frequency test parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-74.54		-61,6		-96.47	
	Band II						-94.47	
	Band III						-93.47	
Îor/Ioc		dB	4.3	0.3	9.3	0.3	0.3	-6.23
CPICH RSCP, Note 1	Band I	dBm	-80.2	-84.2	-62.3	-71.3	-106.17	-112.7
	Band II						-104.17	-110.7
	Band III						-103.17	-109.7
Io, Note 1	Band I	dBm/ 3.84 MHz	-67.8		-51,4		-92,8	
	Band II						-90.8	
	Band III						-89.8	
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

The reported values for the relative intra frequency CPICH RSCP measurement shall meet the requirements in table 8.7.1.1.2.4.

Table 8.7.1.1.2.4: CPICH_RSCP Intra frequency relative accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Normal Conditions			
Lowest reported value cell 2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 13)	CPICH_RSCP_(x - 11)
Highest reported value cell 2	CPICH_RSCP_x	CPICH_RSCP_(x - 5)	CPICH_RSCP_(x - 3)
Extreme Conditions			
Lowest reported value cell2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 13)	CPICH_RSCP_(x - 11)
Highest reported value cell2	CPICH_RSCP_x	CPICH_RSCP_(x - 5)	CPICH_RSCP_(x - 3)
CPICH_RSCP_x is the reported value of cell 1			

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.2 Inter frequency measurement accuracy

8.7.1.2.1 Relative accuracy requirement

8.7.1.2.1.1 Definition and applicability

The relative accuracy of CPICH RSCP in inter frequency case is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.1.2.1.2 Minimum Requirements

The accuracy requirements in table 8.7.1.2.1.1 are valid under the following conditions:

- $CPICH\_RSCP1,2|_{dBm} \geq -114$ dBm for Band I.
- $CPICH\_RSCP1,2|_{dBm} \geq -112$ dBm for Band II,

- CPICH_RSCP1,2$|_{dBm}$ ≥ -111 dBm for Band III.

- $\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \leq 20dB$.

- | Channel 1_Io$|_{dBm/3.84\ MHz}$ -Channel 2_Io$|_{dBm/3.84\ MHz}$ | ≤ 20 dB.

- $\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$.

Table 8.7.1.2.1.1: CPICH_RSCP Inter frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_RSCP	dBm	±6	±6	-94...-50	-92...-50	-91...-50

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.2.1 and A.9.1.1.2.

8.7.1.2.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP relative measurement accuracy is within the specified limits in clause 8.7.1.2.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.2.1.4 Method of test

8.7.1.2.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 ñ TTI/10msec))mod 256". CPICH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2.1.2.

Table 8.7.1.2.1.2: CPICH RSCP Inter frequency parameters

Parameter		Unit	Test 1		Test 2	
			Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12	
SCH_Ec/Ior		dB	-12		-12	
PICH_Ec/Ior		dB	-15		-15	
DPCH_Ec/Ior		dB	-15	-	-15	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-1.11	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-60.00	-60.00	-84.00	-94.46
	Band II				-82.00	-92.46
	Band III				-81.00	-91.46
Îor/Ioc		dB	9.54	9.54	0	-9.54
CPICH RSCP, Note 1	Band I	dBm	-60.46	-60.46	-94.0	-114.0
	Band II				-92.0	-112.0
	Band III				-91.0	-111.0
Io, Note 1	Band I	dBm/3.84 MHz	-50.00	-50.00	-81.0	-94.0
	Band II				-79.0	-92.0
	Band III				-78.0	-91.0
Propagation condition		-	AWGN		AWGN	
NOTE 1: CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.						
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for test 2 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.						

8.7.1.2.1.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.2.1.4.

2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

4) SS shall transmit MEASUREMENT CONTROL message for intra frequency measurement and transmit MEASUREMENT CONTROL message for inter frequency measurement.

5) UE shall transmit periodically MEASUREMENT REPORT messages.

6) SS shall check CPICH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. CPICH RSCP power value measured from Cell 1 is compared to CPICH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

7) The result of step 5) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.

8) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.2.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6) and 7) above are repeated.

9) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 1):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
- CHOICE *channel requirement*	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 ñ TTI/10msec))mod 256
-Transmission gap pattern sequence configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	B
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD

-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

First MEASUREMENT CONTROL message for Intra frequency measurement (Step 3):

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Intra-frequency measurement - Intra-frequency measurement objects list -Intra-frequency cell info list -Intra-frequency measurement quantity -Filter coefficient -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity -Reporting quantities for active set cells -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for monitored set cells -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for detected set cells -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -CHOICE *report criteria* -Amount of reporting -Reporting interval	 1 Modify Acknowledged mode RLC Periodical reporting Not Present Intra-frequency measurement Not Present 0 FDD CPICH RSCP TRUE TRUE FDD TRUE ~~FALSE~~TRUE FALSE FALSE TRUE FDD ~~FALSE~~ TRUE TRUE FALSE Not Present Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Periodical reporting criteria Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

Second MEASUREMENT CONTROL message for Inter frequency measurement (step 3):

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement object list -CHOICE Inter-frequency cell removal -New inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode -Measurement quantity for frequency quality estimate -Inter-frequency reporting quantity -UTRA Carrier RSSI -Frequency quality estimate -Non frequency related cell reporting quantities -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -Inter-frequency set update -CHOICE report criteria -Amount of reporting -Reporting interval	 2 Setup Acknowledged mode RLC Periodical reporting Not Present Inter-frequency measurement Not Present Cell 2 information is included Not Present Inter-frequency reporting criteria 0 FDD CPICH RSCP TRUE TRUE TRUE TRUE FDD TRUE TRUE~~FALSE~~ FALSE Report cells within monitored set on non-used frequency 2 Not Present Not Present Periodical reporting criteria Infinity 500 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.2.1.5 Test requirements

Table 8.7.1.2.1.3: CPICH_RSCP Inter frequency relative accuracy, test requirements

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_RSCP	dBm	±7.1	±7.1	-94...-50	-92...-50	-91...-50

Table 8.7.1.2.1.4: CPICH RSCP Inter frequency tests parameters

Parameter		Unit	Test 1		Test 2	
			Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12	
SCH_Ec/Ior		dB	-12		-12	
PICH_Ec/Ior		dB	-15		-15	
DPCH_Ec/Ior		dB	-15	-	-15	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-1.11	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-61.6	-61.6	-83.00	-93.46
	Band II				-81.00	-91.46
	Band III				-80.00	-90.46
$\hat{I}_{or}/I_{oc}$		dB	9.84	9.84	0.3	-9.24
CPICH RSCP, Note 1	Band I	dBm	-61.8	-61.8	-92.7	-112.7
	Band II				-90.7	-110.7
	Band III				-89.7	-109.7
Io, Note 1	Band I	dBm/3.84 MHz	-51.3	-51.3	-79.8	-93.0
	Band II				-77.8	-91.0
	Band III				-76.8	-90.0
Propagation condition		-	AWGN		AWGN	
NOTE 1: CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.						
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for test 2 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.						

The reported values for the relative inter frequency CPICH RSCP measurement shall meet the requirements in table 8.7.1.2.1.5.

Table 8.7.1.2.1.5: CPICH_RSCP Inter frequency relative accuracy requirements for the reported values

	Test 1	Test 2
Normal Conditions		
Lowest reported value cell 2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 28)
Highest reported value cell 2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x - 12)
Extreme Conditions		
Lowest reported value cell2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 28)
Highest reported value cell2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x - 12)
CPICH_RSCP_x is the reported value of cell 1		

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2 CPICH Ec/Io

8.7.2.1 Intra frequency measurements accuracy

8.7.2.1.1 Absolute accuracy requirement

8.7.2.1.1.1 Definition and applicability

The absolute accuracy of CPICH Ec/Io is defined as the CPICH Ec/Io measured from one cell compared to the actual CPICH_Ec/Io power ratio from same cell.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.2.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1.1.1 are valid under the following conditions:

- $CPICH\_RSCP1|_{dBm} \geq -114$ dBm for Band I.
- $CPICH\_RSCP1|_{dBm} \geq -112$ dBm for Band II,
- $CPICH\_RSCP1|_{dBm} \geq -111$ dBm for Band III.
- $\left.\frac{I_o}{(\hat{I}_{or})}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$.

Table 8.7.2.1.1.1: CPICH_Ec/Io Intra frequency absolute accuracy, minimum requirements

Parameter	**Unit**	**Accuracy [dB]**		**Conditions**		
		Normal condition	**Extreme condition**	**Io [dBm/3.84 MHz]**		
				Band I	**Band II**	**Band III**
CPICH_Ec/Io	dB	±1,5 for -14 ≤ CPICH Ec/Io ±2 for -16 ≤ CPICH Ec/Io < -14 ±3 for -20 ≤ CPICH Ec/Io < -16	±3	-94...-50	-92...-50	-91...-50

The normative reference for this requirement is TS 25.133 [2] clause 9.1.2.1.1.

8.7.2.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH Ec/Io absolute measurement accuracy is within the specified limits in clause 8.7.2.1.1.2. This measurement is for Cell selection/re-selection and for handover evaluation.

8.7.2.1.1.4 Method of test

8.7.2.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. CPICH Ec/Io intra frequency absolute accuracy requirements are tested by using the test parameters in table 8.7.2.1.1.2.

Table 8.7.2.1.1.2: CPICH_Ec/Io Intra frequency parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-15	-	-6	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-1.11	-0.94	-2.56	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-56.98		-89.07		-94.98	
	Band II				-87.07		-92.98	
	Band III				-86.07		-91.98	
Îor/Ioc		dB	3.0	3.0	-2.9	-2.9	-9.0	-9.0
CPICH Ec/Io, Note 1		dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
Io, Note 1	Band I	dBm/3.84 MHz	-50		-86		-94	
	Band II				-84		-92	
	Band III				-83		-91	
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

8.7.2.1.1.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.1.1.5.

2) SS shall transmit MEASUREMENT CONTROL message.

3) UE shall transmit periodically MEASUREMENT REPORT messages.

4) SS shall check CPICH_Ec/No value in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1, which is compared to the actual CPICH Ec/Io power ratio from the same cell for each MEASUREMENT REPORT message.

5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.5 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.5 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated.

6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Table 8.7.2.1.1.3: CPICH Ec/Io measurement report mapping

Reported value	Measured quantity value	Unit
CPICH_Ec/No _00	CPICH Ec/Io < -24	dB
CPICH_Ec/No _01	-24 ≤ CPICH Ec/Io < -23.5	dB
CPICH_Ec/No _02	-23.5 ≤ CPICH Ec/Io < -23	dB
Ö	Ö	Ö
CPICH_Ec/No _47	-1 ≤ CPICH Ec/Io < -0.5	dB
CPICH_Ec/No _48	-0.5 ≤ CPICH Ec/Io < 0	dB
CPICH_Ec/No _49	0 ≤ CPICH Ec/Io	dB

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Intra-frequency measurement - Intra-frequency measurement objects list -Intra-frequency measurement quantity -Filter coefficient -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity -Reporting quantities for active set cells -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for monitored set cells -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for detected set cells -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -CHOICE *report criteria* -Amount of reporting -Reporting interval	 1 Modify Acknowledged mode RLC Periodical reporting Not Present Intra-frequency measurement Not Present 0 FDD CPICH RSCP TRUE TRUE FDD TRUE TRUE FALSE FALSE FALSE FDD TRUE TRUE~~FALSE~~ FALSE Not Present Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Periodical reporting criteria Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.2.1.1.5 Test requirements

The CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.1.1.2. The effect of assumed thermal noise and noise generated in the receiver (ñ99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in subclause 8.7.2.1.1.2 as shown in table 8.7.2.1.1.4.

Table 8.7.2.1.1.4: CPICH_Ec/Io Intra frequency absolute accuracy, test requirements

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_Ec/Io	dB	-3.1Ö 1.9 for -14 ≤ CPICH Ec/Io ñ3.6Ö 2.4 for -16 ≤ CPICH Ec/Io < -14 ñ4.6Ö 3.4 for -20 ≤ CPICH Ec/Io < -16	-4.6Ö 3.4	-94...-87	-92...-85	-91...-84
		± 1.95 for -14 ≤ CPICH Ec/Io ± 2.4 for -16 ≤ CPICH Ec/Io < -14 ± 3.4 for -20 ≤ CPICH Ec/Io < -16	± 3.4	-87...-50	-85...-50	-84...-50

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

Table 8.7.2.1.1.5: CPICH_Ec/Io Intra frequency tests parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-9.7		-9.8		-9.9	
PCCPCH_Ec/Ior		dB	-11.7		-11.8		-11.9	
SCH_Ec/Ior		dB	-11.7		-11.8		-11.9	
PICH_Ec/Ior		dB	-14.7		-14.8		-14.9	
DPCH_Ec/Ior		dB	-14.7	-	-14.8	-	-5.9	-
OCNS_Ec/Ior		dB	-1.2	-1.02	-1.17	-0.99	-2.64	-0.97
Ioc	Band I	dBm/ 3.84 MHz	-58.5		-89.07		-93.98	
	Band II				-87.07		-91.98	
	Band III				-86.07		-90.98	
Îor/Ioc		dB	3.3	3.3	-2.6	-2.6	-8.7	-8.7
CPICH Ec/Io, Note 1		dBm	-13.6	-13.6	-15.6	-15.6	-19.6	-19.6
Io, Note 1	Band I	dBm / 3.84 MHz	-51.3		-85.85		-92.9	
	Band II				-83.85		-90.9	
	Band III				-82.85		-89.9	
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

The reported values for the absolute intra frequency CPICH Ec/Io measurement shall meet the requirements in table 8.7.2.1.1.6.

Table 8.7.2.1.1.6: CPICH_Ec/Io Intra frequency absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Normal Conditions			
Lowest reported value	CPICH_Ec/No_17	CPICH_Ec/No_12	CPICH_Ec/No_0
Highest reported value	CPICH_Ec/No_25	CPICH_Ec/No_22	CPICH_Ec/No_16
Extreme Conditions			
Lowest reported value	CPICH_Ec/No_14	CPICH_Ec/No_10	CPICH_Ec/No_0
Highest reported value	CPICH_Ec/No_28	CPICH_Ec/No_24	CPICH_Ec/No_16

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2.1.2 Relative accuracy requirement

8.7.2.1.2.1 Definition and applicability

The relative accuracy of CPICH Ec/Io is defined as the CPICH Ec/Io measured from one cell compared to the CPICH Ec/Io measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.2.1.2.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1.2.1 are valid under the following conditions:

- $CPICH\_RSCP1,2|_{dBm} \geq -114$ dBm for Band I.
- $CPICH\_RSCP1,2|_{dBm} \geq -112$ dBm for Band II,
- $CPICH\_RSCP1,2|_{dBm} \geq -111$ dBm for Band III.
- $\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \leq 20dB$.
- $\left.\frac{I_o}{(\hat{I}_{or})}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$.

Table 8.7.2.1.2.1: CPICH_Ec/Io Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_Ec/Io	dB	±1,5 for -14 ≤ CPICH Ec/Io ±2 for -16 ≤ CPICH Ec/Io < -14 ±3 for -20 ≤ CPICH Ec/Io < -16	±3	-94...-50	-92...-50	-91...-50

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.2.1.2 and A.9.1.2.2.

8.7.2.1.2.3 Test purpose

The purpose of this test is to verify that the CPICH Ec/Io relative measurement accuracy is within the specified limits in clause 8.7.2.1.2.2. This measurement is for Cell selection/re-selection and for handover evaluation.

8.7.2.1.2.4 Method of test

8.7.2.1.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are in the same frequency. CPICH Ec/Io intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.2.1.1.2.

8.7.2.1.2.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.1.2.3.
2) SS shall transmit MEASUREMENT CONTROL message.
3) UE shall transmit periodically MEASUREMENT REPORT messages.
4) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio

value measured from Cell 1 is compared to CPICH_Ec/Io power ratio value measured from Cell 2 for each MEASUREMENT REPORT message.

5) The result of step 3) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.

6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.2.3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.2.3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated.

7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement in clause 8.7.2.1.1.4.2 is used.

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.2.1.2.5 Test requirements

Table 8.7.2.1.2.2: CPICH_Ec/Io Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm / 3.84 MHz]		
				Band I	Band II	Band III
CPICH_Ec/Io	dB	±2.3 for -14 ≤ CPICH Ec/Io ±2.8 for -16 ≤ CPICH Ec/Io < -14 ±3.8 for -20 ≤ CPICH Ec/Io < -16	±3.8	-94...-50	-92...-50	-91...-50

Table 8.7.2.1.2.3: CPICH_Ec/Io Intra frequency tests parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-9.7		-9.8		-9.9	
PCCPCH_Ec/Ior		dB	-11.7		-11.8		-11.9	
SCH_Ec/Ior		dB	-11.7		-11.8		-11.9	
PICH_Ec/Ior		dB	-14.7		-14.8		-14.9	
DPCH_Ec/Ior		dB	-14.7	-	-14.8	-	-5.9	-
OCNS_Ec/Ior		dB	-1.2	- 1.02	-1.17	-0.99	-2.64	-0.97
Ioc	Band I	dBm/ 3.84 MHz	-58.5		-89.07		-93.98	
	Band II				-87.07		-91.98	
	Band III				-86.07		-90.98	
Îor/Ioc		dB	3.3	3.3	-2.6	-2.6	-8.7	-8.7
CPICH Ec/Io, Note 1		dBm	-13.6	-13.6	-15.6	-15.6	-19.6	-19.6
Io, Note 1	Band I	dBm / 3.84 MHz	-51,3		-85.85		-92.9	
	Band II				-83.85		-90.9	
	Band III				-82.85		-89.9	
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

The reported values for the relative intra frequency CPICH Ec/Io measurement shall meet the requirements in table 8.7.2.1.2.4.

Table 8.7.2.1.2.4: CPICH_Ec/Io Intra frequency relative accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Normal Conditions			
Lowest reported value cell 2	CPICH_Ec/No_(x - 5)	CPICH_Ec/No_(x - 6)	CPICH_Ec/No_(x - 8)
Highest reported value cell 2	CPICH_Ec/No_(x+ 5)	CPICH_Ec/No_(x + 6)	CPICH_Ec/No_(x+ 8)
Extreme Conditions			
Lowest reported value cell2	CPICH_Ec/No_(x - 8)	CPICH_Ec/No_(x - 8)	CPICH_Ec/No_(x - 8)
Highest reported value cell2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x+ 8)	CPICH_Ec/No_(x+ 8)
CPICH_Ec/No_x is the reported value of cell 1			

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2.2 Inter frequency measurement accuracy

8.7.2.2.1 Absolute accuracy requirement

Void

8.7.2.2.2 Relative accuracy requirement

8.7.2.2.2.1 Definition and applicability

The relative accuracy of CPICH Ec/Io in the inter frequency case is defined as the CPICH Ec/Io measured from one cell compared to the CPICH Ec/Io measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.2.2.2.2 Minimum Requirements

The accuracy requirements in table 8.7.2.2.2.1 are valid under the following conditions:

- CPICH_RSCP1,2$|_{dBm}$ ≥ -114 dBm for Band I.

- CPICH_RSCP1,2$|_{dBm}$ ≥ -112 dBm for Band II,

- CPICH_RSCP1,2$|_{dBm}$ ≥ -111 dBm for Band III.

- $\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \le 20dB$.

- | Channel 1_Io$|_{dBm/3.84\ MHz}$ -Channel 2_Io$|_{dBm/3.84\ MHz}$ | ≤ 20 dB.

- $\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \le 20dB$.

Table 8.7.2.2.2.1: CPICH_Ec/Io Inter frequency relative accuracy, minimum requirements

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_Ec/Io	dB	±1.5 for -14 ≤ CPICH Ec/Io ±2 for -16 ≤ CPICH Ec/Io < -14 ±3 for -20 ≤ CPICH Ec/Io < -16	±3	-94...-50	-92...-50	-91...-50

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.2.2.2 and A.9.1.2.2.

8.7.2.2.2.3 Test purpose

The purpose of this test is to verify that the CPICH Ec/Io relative measurement accuracy is within the specified limits in clause 8.7.2.2.2.2. This measurement is for Cell selection/re-selection and for handover evaluation.

8.7.2.2.2.4 Method of test

8.7.2.2.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are in different frequency and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 ñ TTI/10msec))mod 256". CPICH Ec/Io inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.2.2.2.2.

Table 8.7.2.2.2.2: CPICH Ec/Io Inter frequency parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	-94.46	-94.46
	Band II				-85.27	-85.27	-92.46	-92.46
	Band III				-84.27	-84.27	-91.46	-91.46
Îor/Ioc		dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/Io, Note 1		dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
Io, Note 1	Band I	dBm/3.84 MHz	-50	-50	-86	-86	-94	-94
	Band II				-84	-84	-92	-92
	Band III				-83	-83	-91	-91
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

8.7.2.2.2.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.2.2.4.

2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

4) SS shall transmit a MEASUREMENT CONTROL message for intra frequency measurement and transmit another MEASUREMENT CONTROL message for inter frequency measurement.

5) UE shall transmit periodically MEASUREMENT REPORT messages.

6) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio measured from Cell 1 is compared to CPICH_Ec/Io power value measured from Cell 2 for each MEASUREMENT REPORT message.

7) The result of step 6) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.

8) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6) and 7) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6) and 7) above are repeated.

9) After 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 1):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
- CHOICE *channel requirement*	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 ñ TTI/10msec))mod 256
-Transmission gap pattern sequence configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	B
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD

-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

First MEASUREMENT CONTROL message for Intra frequency measurement (Step 3):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-freqquency measurement objects list	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	FDD
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells	TRUE~~FALSE~~
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	
-CHOICE mode	FALSE
-CPICH Ec/N0 reporting indicator	
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FDD
-Reporting quantities for detected set cells	TRUE~~FALSE~~
-Reporting cell status	TRUE
-CHOICE reported cell	FALSE
	Not Present
-Maximum number of reported cells	
-Measurement validity	Report all active set cells + cells within
-CHOICE *report criteria*	monitored set on used frequency
-Amount of reporting	Virtual/active set cells + 2
-Reporting interval	Not Present
	Periodical reporting criteria
	Infinity
	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

Second MEASUREMENT CONTROL message for Inter frequency measurement (step 3):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement	
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH RSCP
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE~~FALSE~~
-Reporting cell status	FALSE
-CHOICE reported cell	
	Report cells within monitored set on non-used
-Maximum number of reported cells	frequency
-Measurement validity	2
-Inter-frequency set update	Not Present
-CHOICE report criteria	Not Present
-Amount of reporting	Periodical reporting criteria
-Reporting interval	Infinity
	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.2.2.2.5 Test requirements

The effect of assumed thermal noise and noise generated in the receiver (ñ99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in clause 8.7.2.2.2.2 as shown in table 8.7.2.2.2.3.

Table 8.7.2.2.2.3: CPICH_Ec/Io Inter frequency relative accuracy, test requirements

Parameter	Unit	Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_Ec/Io	dB	±3.5 for -14 ≤ CPICH Ec/Io ±4 for -16 ≤ CPICH Ec/Io < -14 ±5 for -20 ≤ CPICH Ec/Io < -16	± 5	-94...-87	-92...-85	-91...-84
		±2.3 for -14 ≤ CPICH Ec/Io ± 2.8 for -16 ≤ CPICH Ec/Io < -14 ± 3.8 for -20 ≤ CPICH Ec/Io < -16	± 3.8	-87...-50	-85...-50	-84...-50

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

Table 8.7.2.2.2.4: CPICH Ec/Io Inter frequency tests parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior		dB	-1.12	-0.95	-2.55	-0.94	-2.55	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-53.5	-53.5	-86.27	-86.27	-93.46	-93.46
	Band II				-84.27	-84.27	-91.46	-91.46
	Band III				-83.27	-83.27	-90.46	-90.46
Îor/Ioc		dB	-1.45	-1.45	-4.4	-4.4	-9.24	-9.24
CPICH Ec/Io, Note 1		dBm	-13.8	-13.8	-15.7	-15.7	-19.7	-19.7
Io, Note 1	Band I	dBm /3.84 MHz	-51.15	-51.15	-84.9	-84.9	-93	-93
	Band II				-82.9	-82.9	-91	-91
	Band III				-81.9	-81.9	-90	-90
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

The reported values for the relative inter frequency CPICH Ec/Io measurement shall meet the requirements in table 8.7.2.2.2.5.

Table 8.7.2.2.2.5: CPICH_Ec/Io Inter frequency relative accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Normal Conditions			
Lowest reported value cell 2	CPICH_Ec/No_(x -5)	CPICH_Ec/No_(x - 6)	CPICH_Ec/No_(x - 10)
Highest reported value cell 2	CPICH_Ec/No_(x+5)	CPICH_Ec/No_(x + 6)	CPICH_Ec/No_(x +10)
Extreme Conditions			
Lowest reported value cell2	CPICH_Ec/No_(x - 8)	CPICH_Ec/No_(x - 8)	CPICH_Ec/No_(x - 10)
Highest reported value cell2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x + 10)
CPICH_Ec/No_x is the reported value of cell 1			

8.7.3 UTRA Carrier RSSI

NOTE: This measurement is for Inter-frequency handover evaluation.

8.7.3.1 Absolute measurement accuracy requirement

8.7.3.1.1 Definition and applicability

The absolute accuracy of UTRA Carrier RSSI is defined as the UTRA Carrier RSSI measured from one frequency compared to the actual UTRA Carrier RSSI power of that same frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.3.1.2 Minimum Requirements

Table 8.7.3.1.1: UTRA Carrier RSSI Inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
UTRA Carrier RSSI	dBm	± 4	± 7	-94...-70	-92...-70	-91...-70
	dBm	± 6	± 9	-70...-50	-70...-50	-70...-50

The normative reference for this requirement is TS 25.133 [2] clause 9.1.3.1.

8.7.3.1.3 Test purpose

The purpose of this test is to verify that the UTRA Carrier RSSI measurement is within the specified limits. This measurement is for inter-frequency handover evaluation.

8.7.3.1.4 Method of test

8.7.3.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, Set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 ñ TTI/10msec))mod 256". UTRA Carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.3.1.2.

Table 8.7.3.1.2: UTRA Carrier RSSI Inter frequency test parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-52.22	-52.22	-70.27	-70.27	-94.46	-94.46
	Band II						-92.46	-92.46
	Band III						-91.46	-91.46
Îor/Ioc		dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/Io, Note 1		dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
Io, Note 1	Band I	dBm/3.84 MHz	-50	-50	-69	-69	-94	-94
	Band II						-92	-92
	Band III						-91	-91
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

8.7.3.1.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.3.1.2.

2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

4) SS shall transmit MEASUREMENT CONTROL message.

5) UE shall transmit periodically MEASUREMENT REPORT messages.

6) SS shall check UTRA carrier RSSI value of Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power of Channel 2 reported by UE is compared to actual UTRA Carrier RSSI value of Channel 2 for each MEASUREMENT REPORT message.

7) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) above is repeated.

8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 2):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
-Integrity protection mode info	internal counter.
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	Not Present
-UTRAN DRX cycle length coefficient	CELL_DCH
	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
- CHOICE *channel requirement*	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 ñ TTI/10msec))mod 256
-Transmission gap pattern sequence configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	B
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD

-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT CONTROL message for Inter frequency measurement (step 4):

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cell removal -New inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode -Measurement quantity for frequency quality estimate -Inter-frequency reporting quantity -UTRA Carrier RSSI -Frequency quality estimate -Non frequency related cell reporting quantities -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -Inter-frequency set update -CHOICE report criteria -Amount of reporting -Reporting interval	 2 Setup Acknowledged mode RLC Periodical reporting Not Present Inter-frequency measurement Not Present Cell 2 information is included. Not Present Inter-frequency reporting criteria 0 FDD CPICH RSCP TRUE TRUE TRUE TRUE FDD TRUE TRUE~~FALSE~~ FALSE Report cells within monitored set on non-used frequency 2 Not Present Not Present Periodical reporting criteria Infinity 500 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.3.1.5 Test requirements

The UTRA Carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.3.1.2. The effect of assumed thermal noise and noise generated in the receiver (ñ99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in subclause 8.7.3.1.2 as shown in table 8.7.3.1.3.

Table 8.7.3.1.3: UTRA Carrier RSSI absolute accuracy

Parameter	Unit	Accuracy [dB]					
		Normal condition			Extreme condition		
		Test 1	Test 2	Test 3	Test 1	Test 2	Test 3
UTRA Carrier RSSI	dBm	± 7.15	± 5.1	-5Ö 5.8	± 10.15	± 8.1	-8Ö 8.8

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3.2.

Table 8.7.3.1.4: UTRA Carrier RSSI Inter frequency test parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-53.5	-53.5	-69.27	-69.27	-93.46	-93.46
	Band II						-91.46	-91.46
	Band III						-90.46	-90.46
Îor/Ioc		dB	-1.45	-1.45	-4.4	-4.4	-9.24	-9.24
CPICH Ec/Io, Note 1		dBm	-13.8	-13.8	-15.7	-15.7	-19.7	-19.7
Io, Note 1	Band I	dBm/3.84 MHz	-51.15	-51.15	-67.9	-67.9	-93	-93
	Band II						-91	-91
	Band III						-90	-90
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

The reported values for the UTRA Carrier RSSI absolute measurement shall meet the requirements in table 8.7.3.1.5.

Table 8.7.3.1.5: UTRA Carrier RSSI absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Normal Conditions			
Lowest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_42	UTRA_carrier_RSSI_LEV_27	UTRA_carrier_RSSI_LEV_02
Highest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_57	UTRA_carrier_RSSI_LEV_38	UTRA_carrier_RSSI_LEV_13
Extreme Conditions			
Lowest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_39	UTRA_carrier_RSSI_LEV_24	UTRA_carrier_RSSI_LEV_00
Highest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_60	UTRA_carrier_RSSI_LEV_41	UTRA_carrier_RSSI_LEV_16

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.3.2 Relative measurement accuracy requirement

8.7.3.2.1 Definition and applicability

The relative accuracy requirement is defined as the UTRA Carrier RSSI measured from one frequency compared to the UTRA Carrier RSSI measured from another frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.3.2.2 Minimum Requirements

The accuracy requirements in table 8.7.3.2.1 are valid under the following condition:

| Channel 1_Io|$_{dBm/3.84\ MHz}$ -Channel 2_Io|$_{dBm/3.84\ MHz}$ | < 20 dB.

Table 8.7.3.2.1: UTRA Carrier RSSI Inter frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
UTRA Carrier RSSI	dBm	± 7	± 11	-94...-70	-92...-70	-91...-70

The normative reference for this requirement is TS 25.133 [2] clause 9.1.3.2.

8.7.3.2.3 Test purpose

The purpose of this test is to verify that the UTRA Carrier RSSI measurement is within the specified limits. This measurement is for inter-frequency handover evaluation.

8.7.3.2.4 Method of test

8.7.3.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, Set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 ñ TTI/10msec))mod 256". UTRA Carrier RSSI relative accuracy requirements are tested by using test parameters in table 8.7.3.1.2.

8.7.3.2.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 3 are set up according to table 8.7.3.2.3.

2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

4) SS shall transmit MEASUREMENT CONTROL message.

5) UE shall transmit periodically MEASUREMENT REPORT messages.

6) SS shall check UTRA carrier RSSI value of Channel 1 and Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power value measured from Channel 1 is compared to UTRA carrier RSSI power value measured from Channel 2 for each MEASUREMENT REPORT message.

7) The result of step 6) is compared to actual power level difference of UTRA Carrier RSSI of Channel 1 and Channel 2.

8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message and MEASUREMENT CONTROL message for Inter frequency measurement in clause 8.7.3.1.4.2 is used.

MEASUREMENT REPORT message for inter ñ frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.3.2.5 Test requirements

The UTRA Carrier RSSI relative measurement accuracy shall meet the requirements in clause 8.7.3.2.2. The effect of assumed thermal noise and noise generated in the receiver (ñ99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in clause 8.7.3.2.2 as shown in table 8.7.3.2.2.

Table 8.7.3.2.2: UTRA Carrier RSSI relative accuracy

Parameter	Unit	Accuracy [dB]	
		Normal condition	Extreme condition
		Test 3	Test 3
UTRA Carrier RSSI	**dBm**	**± 7.4**	**± 11.4**

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3.2.

Table 8.7.3.2.3: UTRA Carrier RSSI Inter frequency test parameters

Parameter		Unit	Test 3	
			Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10	
PCCPCH_Ec/Ior		dB	-12	
SCH_Ec/Ior		dB	-12	
PICH_Ec/Ior		dB	-15	
DPCH_Ec/Ior		dB	-6	-
OCNS_Ec/Ior		dB	-2.56	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-93.46	-93.46
	Band II		-91.46	-91.46
	Band III		-90.46	-90.46
Œr/Ioc		dB	-9.24	-9.24
CPICH Ec/Io, Note 1		dBm	-19.7	-19.7
Io, Note 1	Band I	dBm/3.84 MHz	-93	-93
	Band II		-91	-91
	Band III		-90	-90
Propagation condition		-	AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.				

The reported values for the UTRA Carrier RSSI relative measurement shall meet the requirements in table 8.7.3.2.4.

Table 8.7.3.2.4: UTRA Carrier RSSI relative accuracy requirements for the reported values

	Test 3
Normal Conditions	
Lowest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_(x ñ 8)
Highest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_(x + 8)
Extreme Conditions	
Lowest reported value (Cell 2)	UTRA_carrier_RSSI_LEV__(x ñ 12)
Highest reported value (Cell 2)	UTRA_carrier_RSSI_LEV__(x + 12)
UTRA_carrier_RSSI_LEV_x is the reported value of cell 1	

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.3A GSM Carrier RSSI

8.7.3A.1 Definition and applicability

The GSM carrier RSSI measurement is used for handover between UTRAN and GSM.

The requirements and this test apply to the combined FDD and GSM UE.

8.7.3A.2 Minimum Requirements

The UE shall meet the measurement accuracy requirements stated for RXLEV below, when the given measurement time allows the UE to take at least 3 GSM carrier RSSI samples per GSM carrier in the monitored set during the measurement period.

The absolute accuracy shall be as follows:

The R.M.S received signal level at the receiver input shall be measured by the UE and the BSS over the full range of -110 dBm to -48 dBm with an absolute accuracy of ±4 dB from -110 dBm to -70 dBm under normal conditions and ±6 dB over the full range under both normal and extreme conditions. The R.M.S received signal level at the receiver input shall be measured by the UE above -48 dBm up to -38 dBm with an absolute accuracy of ± 9 dB under both normal and extreme conditions.

If the received signal level falls below the reference sensitivity level for the type of UE or BSS, then the measured level shall be within the range allowing for the absolute accuracy specified above. In case the upper limit of this range is below the reference sensitivity level for the type of UE or BSS, then the upper limit shall be considered as equal to the reference sensitivity level.

The relative accuracy shall be as follows:

If signals of level x1 and x2 dBm are received (where x1 ≤ x2) and levels y1 and y2 dBm respectively are measured, if x2 - x1 < 20 dB and x1 is not below the reference sensitivity level, then y1 and y2 shall be such that:

(x2 - x1) - a ≤ y2 - y1 ≤ (x2 - x1 + b) if the measurements are on the same or on different RF channel within the same frequency band;

and

(x2 - x1) - c ≤ y2 - y1 ≤(x2 - x1 + d) if the measurements are on different frequency bands:

a, b, c and d are in dB and depend on the value of x1 as follows:

	a	b	c	d
x1 ≥ s+14, x2< -48 dBm	2	2	4	4
s+14 > x1 ≥ s+1	3	2	5	4
s+1 > x1	4	2	6	4

For single band MS or BTS and measurements between ARFCN in the same band for a multiband

MS or BTS;

s = reference sensitivity level as specified in 3GPP TS 05.05 [28].

For measurements between ARFCN in different bands;

s = the reference sensitivity level as specified in 3GPP TS 05.05 [28] for the band including x1.

At extreme temperature conditions an extra 2 dB shall be added to c and d in above table.

The selectivity of the received signal level measurement shall be as follows:

- for adjacent (200 kHz) channel ≥ 16 dB;
- for adjacent (400 kHz) channel ≥ 48 dB;
- for adjacent (600 kHz) channel ≥ 56 dB.

The selectivity shall be met using random, continuous, GSM-modulated signals with the wanted signal at the level 20 dB above the reference sensitivity level.

The reporting range and mapping specified for RXLEV in TS 05.08 shall apply.

The normative reference for this requirement is TS 25.133 [2] clause 8.1.2.5 and 9.1.4 and TS 05.08 [20] clause 8.1.2.

8.7.3A.3 Test purpose

The purpose of this test is to verify that the GSM Carrier RSSI measurement accuracy in CELL_DCH state, for UE that needs compressed mode to perform GSM measurements, is within the specified limits. This measurement is for UTRAN to GSM handover evaluation.

8.7.3A.4 Method of test

8.7.3A.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In the test in Cell_DCH state compressed mode with purpose ìGSM Carrier RSSI Measurementî is applied to measure on GSM. The gap length is 7, detailed definition is in clause C.5, Set 2 of table C.5.2 except for TGPRC and TGCFN. TGPRC and TGCFN shall set to "'Infinity" and "(Current CFN + (256 ñ TTI/10msec))mod 256". Table 8.7.3A.1 defines the limits of signal strengths and code powers on the UMTS FDD cell, where the requirement is applicable. In the measurement control information it is indicated to the UE that periodic reporting of the GSM RSSI measurement.

Table 8.7.3A.1: General GSM Carrier RSSI test parameters

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in section C.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns - GSM carrier RSSI measurement		Compressed mode reference pattern 2 Set 2	As specified in table C.5.2 section C.5
Inter-RAT measurement quantity		GSM Carrier RSSI	
BSIC verification required		Not required	
Monitored cell list size		6 GSM neighbours	Measurement control information is sent before the compressed mode patterns starts.

Table 8.7.3A.2: Cell specific GSM Carrier RSSI test parameters

Parameter	Unit	Cell 1
UTRA RF Channel number	-	Channel 1
CPICH_Ec/Ior	DB	-1
Ioc	dBm/ 3.84 MHz	-70
Propagation condition	-	AWGN

1) The SS is set to produce the BCCHs of 6 surrounding cells at 28 dBµVemf( ). The fading profile for the BCCHs of the surrounding cells will be set to static, see 51.010-1 [25]. The limits of the GSM test parameters are defined in TS 05.08 [20].

2) After 30 seconds a call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Cell 1 is set up according to table 8.7.3A.1 and 8.7.3A.2.

8.7.3A.4.2 Procedure

1) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

2) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

3) SS shall transmit MEASUREMENT CONTROL message.

4) UE shall transmit periodically MEASUREMENT REPORT messages.

5) SS shall check GSM carrier RSSI value of the GSM cells in MEASUREMENT REPORT messages. The measurement is done in 105 steps. The initial signal levels of the BCCHs of the surrounding cells are adjusted according to table 8.7.3A.3. At each step the SS keeps the signal levels stable for one reporting period, except at steps $21 + m \times 21$ where the level is held stable for 1,75 reporting periods. The GSM CARRIER RSSI value for the period in which the change occurs (reported in the following period) is discarded. The SS records the GSM CARRIER RSSI values reported for the surrounding cell BCCHs in steps $1 + m \times 21$ and $21 + m \times 21$. The GSM CARRIER RSSI values for BCCH 1 are recorded by the SS for all 105 steps.

NOTE: This extension at steps $21 + m \times 21$ is to allow an extra quarter reporting period for the UE to stabilize for steps $1 + m \times 21$.

Table 8.7.3A.3: Signal levels at receiver input in dBμVemf( )

	ARFCN	BCCH1	BCCH2	BCCH3	BCCH4	BCCH5	BCCH6
Step	GSM 450	276	293	264	269	281	288
	GSM 480	323	340	311	316	328	335
	GSM 900:	62	124	20	40	80	100
	DCS 1 800	700	885	585	660	790	835
	PCS 1 900	700	805	585	660	790	550
	450/900	124	276	293	269	288	1
	480/900	124	323	340	316	335	1
	450/1 800	885	276	293	269	288	512
	480/1 800	885	323	340	316	335	512
	900/1 800	885	62	124	40	100	512
	450/900/1 800	124	276	885	293	1	512
	480/900/1 800	124	323	885	340	1	512
	GSM 850	189	251	150	170	210	230
	GSM 750	475	511	440	455	485	500
	750/850	251	475	511	455	485	128
$1 + m \times 21$		$64,5 - m \times 10$	$64,5 - m \times 10$	$64,5 - m \times 10$	$64,5 - m \times 10$	$64,5 - m \times 10$	$64,5 - m \times 10$
$2 + m \times 21$		$63,5 - m \times 10$	$54,5 - m \times 10$	$54,5 - m \times 10$	$54,5 - m \times 10$	$54,5 - m \times 10$	$54,5 - m \times 10$
$3 + m \times 21$		$62,5 - m \times 10$	$44,5 - m \times 10$	$44,5 - m \times 10$	$44,5 - m \times 10$	$44,5 - m \times 10$	$44,5 - m \times 10$
.		.	.	.	.	$44,5 - m \times 10$	$44,5 - m \times 10$
$17 + m \times 21$		.	.	.	.	$44,5 - m \times 10$	$44,5 - m \times 10$
$18 + m \times 21$		.	.	.	.	$44,5 - m \times 10$	$44,5 - m \times 10$
.		.	.	.	.	$44,5 - m \times 10$	$44,5 - m \times 10$
$21 + m \times 21$		$44,5 - m \times 10$	$44,5 - m \times 10$	$44,5 - m \times 10$	$44,5 - m \times 10$	$44,5 - m \times 10$	$44,5 - m \times 10$
m = 0, 1, 2, 3, 4.							

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 1):

Information Element	Value/Remark
Message Type	
UE Information Elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number -Integrity protection mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. Not Present Not Present Not Present Not Present Not Present CELL_DCH Not Present
CN Information Elements -CN Information info	 Not Present
UTRAN mobility information elements -URA identity	 Not Present
RB information elements -Downlink counter synchronisation info	 Not Present
PhyCH information elements -Frequency info	 Not Present
Uplink radio resources -Maximum allowed UL TX power - CHOICE *channel requirement*	 Not Present Not Present
Downlink radio resources -CHOICE mode -Downlink PDSCH information -Downlink information common for all radio links -Downlink DPCH info common for all RL -CHOICE mode -DPCH compressed mode info -Transmission gap pattern sequence -TGPSI -TGPS Status Flag -TGCFN -Transmission gap pattern sequence configuration parameters -TGMP -TGPRC -TGSN -TGL1 -TGL2 -TGD -TGPL1 -TGPL2 -RPP -ITP -CHOICE UL/DL mode -Downlink compressed mode method -Uplink compressed mode method -Downlink frame type -DeltaSIR1 -DeltaSIRafter1 -DeltaSIR2 -DeltaSIRafter2 -N Identify abort -T Reconfirm abort -TX Diversity Mode -SSDT information -Default DPCH Offset Value -Downlink information per radio link list -Downlink information for each radio link -Choice mode	 FDD Not Present Not Present FDD 1 Activate (Current CFN + (256 ñ TTI/10msec))mod 256 GSM carrier RSSI measurement Infinity 4 7 Not Present 0 12 Not Present Mode 0 Mode 0 UL and DL SF/2 SF/2 B 3.0 3.0 Not Present Not Present Not Present Not Present Not Present Not Present Not Present FDD

-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT CONTROL message for Inter frequency measurement (step 3):

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-RAT measurement -Inter-RAT measurement objects list -CHOICE *Inter-RAT cell removal* -New inter-RAT cells -Inter-RAT cell id -CHOICE Radio Access Technology -GSM -Cell individual offset -Cell selection and re-selection info -BSIC -Base transceiver Station Identity Code (BSIC) -Band indicator -BCCH ARFCN -Cell for measurement -Inter-RAT measurement quantity -Measurement quantity for UTRAN quality estimate -CHOICE system -GSM -Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity -UTRAN estimated quality -CHOICE system -GSM -Observed time difference to GSM cell Reporting indicator -GSM carrier RSSI reporting indicator -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -CHOICE report criteria -Amount of reporting -Reporting interval	 2 Setup Acknowledged mode RLC Periodical reporting Not Present Inter-RAT measurement Not Present 9 GSM 0 Not Present Reference to TS 34.108 table 6.1.10 for Cell 9 According to PICS/PIXIT 1 Not Present Not Present GSM GSM Carrier RSSI 0 not required FALSE GSM FALSE TRUE Report cells within active set or within virtual active set or of the other RAT 6 Periodical reporting criteria Infinity 500 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for inter ñ RAT test cases

This message is common for all inter-RAT test cases in clause 8.7 and is described in Annex I.

8.7.3A.5 Test requirements

8.7.3A.5.1 Relative accuracy of measurements on different ARFCN

For normal and each of the 4 extreme conditions tested the following applies:

a) For each of the steps 1, 21, 22, 42, 43 and 64, of the 6 reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 4 if the measurements are on the same or on different RF channel within the same frequency band and no more than 8 (12 for extreme temperature conditions) if the measurements are on different frequency bands.

b) For each of the steps 63 and 85, of the 6 reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 5 for small UE, DCS 1 800 and PCS 1 900 (Class 1 and 2) UE or 4 for other UE if the measurements are on the same or on different RF channel within the same frequency band and no more than 9 for small UE, DCS 1 800 and PCS 1 900 (Class 1 and 2) UE or 8 for other UE and other PCS 1 900 UE (13 and 12 for extreme temperature conditions) if the measurements are on different frequency bands.

c) For step 84, of the 6 reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 5 if the measurements are on the same or on different RF channel within the same frequency band and no more than 9 (13 for extreme temperature conditions) if the measurements are on different frequency bands.

d) For step 105, of the reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 6 if the measurements are on the same or on different RF channel within the same frequency band and no more than 10 (14 for extreme temperature conditions) if the measurements are on different frequency bands.

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3A.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

NOTE: It is not mandatory for the MS to report any of the BCCHs in step 105.

8.7.3A.5.2 Relative accuracy at a single frequency (BCCH1)

For normal and each of the 4 extreme conditions tested the following applies:

For: $n <= 21$ and $RXLEV_1 = 63$

$RXLEV_n - (63 - n + r)$ shall be between:

-2 and +2

NOTE 1: This formula allows for an MS with an absolute accuracy worse than +0,5 dB and therefore reporting an RXLEV of 63 for more than one step. The formula checks the relative accuracy from the lowest input level for which the MS last reports RXLEV of 63.

Otherwise:

$RXLEV_{(m*21+1)} - RXLEV_{(m*21+n)} - n + 1$ shall be between:

-2 and +2

for steps 2 to 62 and 65 to 71 for DCS 1 800 class 1/2 MS; or steps 2 to 62 and 65 to 73 for DCS 1 800 class 3, PCS 1 900 (Class 1&2) and Small GSM MS; or 2 to 75 for other MS and other PCS 1 900 MS.

-3 and +2

for steps 63 and 72 to 96 for DCS 1 800 class 1/2 MS; or steps 63 and 74 to 98 for DCS 1 800 class 3, PCS 1 900 (Class 1 and 2) and Small GSM MS; or

76 to 100 for other MS and other PCS 1 900 MS.

-4 and +2

for steps 97 to 105 for DCS 1 800 class 1/2 MS; or steps 99 to 105 for DCS 1 800 class 3, PCS 1 900 (Class 1 and 2) and Small GSM MS; or 101 to 105 for other MS and other PCS 1 900 MS.

where: $1 < n \leq 21$ and $0 \leq m \leq 4$ as identified in table 8.7.3A.3, and r is the number of the last step where RXLEV of 63 was reported.

NOTE 2: It is not mandatory for the MS to report BCCH1 for steps greater than 99 for GSM 400, GSM 700, GSM 850 or GSM 900 Small MS or 101 for other GSM and other PCS 1 900 MS or 97 for a DCS 1 800 Class 1 or Class 2 MS and 99 for DCS 1 800 Class 3 and PCS 1 900 (Class 1 and 2) MS. If the MS reports a level and the upper limit for this step in the above formula implies a level below the reference sensitivity level for the type of MS, then the upper limit shall be considered as equal to a value corresponding to the reference sensitivity level.

8.7.3A.5.3 Absolute accuracy

For each BCCH reported, $|RXLEV_{MS} + m \times 10 - 62|$ shall be no more than:

4 for steps 64 and 85 under normal conditions.

6 for steps 64 and 85 under extreme conditions.

6 for steps 1, 22 and 43 under normal and extreme conditions.

where: $0 \leq m \leq 4$ as identified in table 8.7.3A.3.

8.7.3B Transport channel BLER

Void.

8.7.3C UE transmitted power

8.7.3C.1 Definition and applicability

The UE transmitted power absolute accuracy is defined as difference between the UE reported value and the UE transmitted power measured by test system. The reference point for the UE transmitted power shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.3C.2 Minimum requirements

The measurement period in CELL_DCH state is 1 slot.

Table 8.7.3C.2.1 UE transmitted power absolute accuracy

Parameter	Unit	Accuracy [dB]	
		PUEMAX 24dBm	PUEMAX 21dBm
UE transmitted power=PUEMAX	dBm	+1/-3	±2
UE transmitted power=PUEMAX-1	dBm	+1.5/-3.5	±2.5
UE transmitted power=PUEMAX-2	dBm	+2/-4	±3
UE transmitted power=PUEMAX-3	dBm	+2.5/-4.5	±3.5
PUEMAX-10≤UE transmitted power<PUEMAX-3	dBm	+3/-5	±4

NOTE 1: User equipment maximum output power, PUEMAX, is the maximum output power level without tolerance defined for the power class of the UE in TS 25.101 [1] section 6.2.1.

NOTE 2: UE transmitted power is the reported value.

For each empty slot created by compressed mode, no value shall be reported by the UE L1 for those slots.

The normative reference for this requirement is TS 25.133 [2] clause 9.1.6.

8.7.3C.3 Test purpose

The purpose of this test is to verify that for any reported value of UE Transmitted Power in the range PUEMAX to PUEMAX-10 that the actual UE mean power lies within the range specified in clause 8.7.3C.2.

8.7.3C.4 Method of test

8.7.3C.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect SS to the UE antenna connector as shown in figure A.1.

The test parameters are given in Table 8.7.3C.4.1 and 8.7.3C.4.2 below. In the measurement control information it shall be indicated to the UE that periodic reporting of the UE transmitted power measurement shall be used.

Table 8.7.3C.4.1: General test parameters for UE transmitted power

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in clause C.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	

Table 8.7.3C.4.2: Cell Specific parameters for UE transmitted power

Parameter	Unit	Cell 1
CPICH_Ec/Ior	dB	-10
PCCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DPCH_Ec/Ior	dB	Note1
OCNS_Ec/Ior	dB	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.		

8.7.3C.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters are set up according to table 8.7.3C.4.1 and 8.7.3C.4.2. Set the UE power and Maximum allowed UL TX power to the maximum power for the UE power class.

2) SS shall send continuously during the entire test Up power control commands to the UE.

3) SS shall transmit the MEASUREMENT CONTROL message as defined in the specific message contents below.

4) Decode the UE Transmitted power reported by the UE in the next available MEASUREMENT REPORT message.

5) Measure the mean power of the UE over a period of one timeslot.

6) Steps 4 and 5 shall be repeated 1000 times.

7) Decrease the Maximum allowed UL TX power by 1 dB. The SS shall transmit the PHYSICAL CHANNEL RECONFIGURATION message, as defined in the specific message contents below.

8) SS shall wait for the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE.

9) Repeat from step 4) until the Maximum allowed UL TX Power reaches PUEMAX-10.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.

Measurement Information elements
-Measurement Identity
-Measurement Command
-CHOICE Measurement type
 -UE Internal measurement quantity
  -Measurement quantity
  -Filter coefficient
 -UE Internal reporting quantity
  -UE Transmitted power
  -CHOICE mode
   -UE Rx-Tx time difference
 -CHOICE report criteria
  -Amount of reporting
  -Reporting interval
-Measurement Reporting Mode
 -Measurement Report Transfer Mode
 -Periodical Reporting / Event Trigger Reporting Mode
-AdditionalMeasurementList
	
	5
	SETUP
	UE Internal measurement
	
	UE Transmitted power
	0
	
	TRUE
	FDD
	FALSE
	Periodical reporting criteria
	Infinity
	250
	
	AM RLC
	Periodical reporting
	Not Present

Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message:

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on PIXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	5
Measured Results	
- CHOICE Measurement	UE Internal measured results
- Choice mode	FDD
- UE Transmitted power	Checked that this IE is present
- UE Rx-Tx report entries	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

PHYSICAL CHANNEL RECONFIGURATION message:

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	At the first time this value is set to PUEMAX-1. After the second time this value is decreased with 1 dB from previous value.
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	Not Present
-Downlink information per radio link list	Not Present

8.7.3C.5 Test requirements

Compare each of the UE transmitted power reports against the following mean power measurement. At least 90% of the mean power measurements for any one value of reported UE transmitted power shall be within the range specified in table 8.7.3C.5.

NOTE It is not expected or required that the distribution of UE transmitted power reports is even for the 11 possible reported values.

Table 8.7.3C.5 UE transmitted power test requirements

Parameter	Unit	Mean Power range [dB]	
		PUEMAX 24dBm	PUEMAX 21dBm
UE transmitted power=PUEMAX	dBm	+1.7/-3.7	±2.7
UE transmitted power=PUEMAX-1	dBm	+2.2/-4.2	±3.2
UE transmitted power=PUEMAX-2	dBm	+2.7/-4.7	±3.7
UE transmitted power=PUEMAX-3	dBm	+3.2/-5.2	±4.2
UE transmitted power=PUEMAX-4	dBm	+3.7/-5.7	±4.7
UE transmitted power=PUEMAX-5	dBm	+3.7/-5.7	±4.7
UE transmitted power=PUEMAX-6	dBm	+3.7/-5.7	±4.7
UE transmitted power=PUEMAX-7	dBm	+3.7/-5.7	±4.7
UE transmitted power=PUEMAX-8	dBm	+3.7/-5.7	±4.7
UE transmitted power=PUEMAX-9	dBm	+3.7/-5.7	±4.7
UE transmitted power=PUEMAX-10	dBm	+3.7/-5.7	±4.7

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.4 SFN-CFN observed time difference

8.7.4.1 Intra frequency measurement requirement

8.7.4.1.1 Definition and applicability

The intra frequency SFN-CFN observed time difference is defined as the SFN-CFN observed time difference from the active cell to a neighbour cell that is in the same frequency. This measurement is specified in clause 5.1.8 of TS 25.215 [22].

The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.4.1.2 Minimum requirements

The accuracy requirement in table 8.7.4.1.1 is valid under the following conditions:

$CPICH\_RSCP1,2|_{dBm} \geq -114$ dBm for Band I.

$CPICH\_RSCP1,2|_{dBm} \geq -112$ dBm for Band II,

$CPICH\_RSCP1,2|_{dBm} \geq -111$ dBm for Band III.

$$\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \leq 20dB$$

$$\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$$

$$\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{P-CCPCH\_E_c}{I_{or}}\right)\right|_{in\ dB}$$ is low enough to ensure successful SFN decoding.

Table 8.7.4.1.1 SFN-CFN observed time difference intra frequency accuracy

Parameter	Unit	Accuracy [chip]	Conditions Io [dBm/3.84 MHz] Band I	Band II	Band III
SFN-CFN observed time difference	chip	± 1	-94...-50	-92...-50	-91...-50

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.7.1 and A.9.1.4.2.

8.7.4.1.3 Test Purpose

The purpose of this test is to verify that the SFN-CFN observed time difference measurement accuracy is within the specified limits in the clause 8.7.4.1.2. This measurement is for handover timing purposes to identify active cell and neighbour cell time difference.

8.7.4.1.4 Method of test

8.7.4.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

During the test the timing difference between Cell 1 and 2 can be set to value from 0Ö 9830399 chips.

In this case all cells are in the same frequency. Table 8.7.4.1.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table 8.7.4.1.2: SFN-CFN observed time difference Intra frequency test parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15		-15		-15	
OCNS_Ec/Ior		dB	-1.11		-1.11		-1.11	
Îor/Ioc		dB	10.5		10.5		10.5	
Ioc		dBm/ 3.84 MHz	*Io ñ13.7 dB = Ioc,* Note 1		*Io ñ13.7 dB = Ioc,* Note 1		*Io ñ13.7 dB = Ioc,* Note 1	
Io	Band I	dBm/3.84 MHz	-50		-72		-94	
	Band II						-92	
	Band III						-91	
SFN-CFN observed time difference as specified in TS 25.215 [22]		chip	x Note 2					
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: *Ioc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor *Îor/Ioc*.								
NOTE2: For example, x= 491520 or 9830399. This is a calculated value using parameters ìOFFî and ìTmî as specified in TS 25.215 [22].								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

8.7.4.1.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.4.1.4.

2) SS shall transmit MEASUREMENT CONTROL message.

3) UE shall transmit periodically MEASUREMENT REPORT message.

4) SS shall check "OFF" and "Tm" values in MEASUREMENT REPORT message and calculate SFN-CFN observed time difference value according to the definition in clause 5.1.8 of TS 25.215 [22]. This value shall be compared to the actual SFN-CFN observed time difference value for each MEASUREMENT REPORT message.

5) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated.

6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for intra frequency measurement

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	FDD
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells	~~FALSE~~TRUE
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FDD
-Reporting quantities for detected set cells	TRUE~~FALSE~~
-Reporting cell status	TRUE
-CHOICE reported cell	FALSE
	Not Present
-Maximum number of reported cells	
-Measurement validity	Report all active set cells + cells within monitored set on used frequency
-CHOICE *report criteria*	Virtual/active set cells + 2
-Amount of reporting	Not Present
-Reporting interval	Periodical reporting criteria
	Infinity
	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.4.1.5 Test requirements

Table 8.7.4.1.3 SFN-CFN observed time difference intra frequency accuracy

<table>
<tr><th rowspan="3">Parameter</th><th rowspan="3">Unit</th><th rowspan="3">Accuracy [chip]</th><th colspan="3">Conditions</th></tr>
<tr><th colspan="3">Io [dBm/3.84 MHz]</th></tr>
<tr><th>Band I</th><th>Band II</th><th>Band III</th></tr>
<tr><td>SFN-CFN observed time difference</td><td>chip</td><td>± 1.5</td><td>-94...-50</td><td>-92...-50</td><td>-91...-50</td></tr>
</table>

Table 8.7.4.1.4: SFN-CFN observed time difference Intra frequency test parameters

<table>
<tr><th colspan="2" rowspan="2">Parameter</th><th rowspan="2">Unit</th><th colspan="2">Test 1</th><th colspan="2">Test 2</th><th colspan="2">Test 3</th></tr>
<tr><td>Cell 1</td><td>Cell 2</td><td>Cell 1</td><td>Cell 2</td><td>Cell 1</td><td>Cell 2</td></tr>
<tr><td colspan="2">UTRA RF Channel number</td><td></td><td colspan="2">Channel 1</td><td colspan="2">Channel 1</td><td colspan="2">Channel 1</td></tr>
<tr><td colspan="2">CPICH_Ec/Ior</td><td>dB</td><td colspan="2">-10</td><td colspan="2">-10</td><td colspan="2">-10</td></tr>
<tr><td colspan="2">PCCPCH_Ec/Ior</td><td>dB</td><td colspan="2">-12</td><td colspan="2">-12</td><td colspan="2">-12</td></tr>
<tr><td colspan="2">SCH_Ec/Ior</td><td>dB</td><td colspan="2">-12</td><td colspan="2">-12</td><td colspan="2">-12</td></tr>
<tr><td colspan="2">PICH_Ec/Ior</td><td>dB</td><td colspan="2">-15</td><td colspan="2">-15</td><td colspan="2">-15</td></tr>
<tr><td colspan="2">DPCH_Ec/Ior</td><td>dB</td><td colspan="2">-15</td><td colspan="2">-15</td><td colspan="2">-15</td></tr>
<tr><td colspan="2">OCNS_Ec/Ior</td><td>dB</td><td colspan="2">-1.11</td><td colspan="2">-1.11</td><td colspan="2">-1.11</td></tr>
<tr><td colspan="2">Îor/Ioc</td><td>dB</td><td colspan="2">10.8</td><td colspan="2">10.8</td><td colspan="2">10.8</td></tr>
<tr><td rowspan="3">Ioc</td><td>Band I</td><td rowspan="3">dBm/ 3.84 MHz</td><td colspan="2" rowspan="3">-65.3</td><td colspan="2" rowspan="3">-85.7</td><td colspan="2">-106.7</td></tr>
<tr><td>Band II</td><td colspan="2">-104.7</td></tr>
<tr><td>Band III</td><td colspan="2">-103.7</td></tr>
<tr><td rowspan="3">Io, Note 1</td><td>Band I</td><td rowspan="3">dBm/3.84 MHz</td><td colspan="2" rowspan="3">-51.3</td><td colspan="2" rowspan="3">-71.7</td><td colspan="2">-92.7</td></tr>
<tr><td>Band II</td><td colspan="2">-90.7</td></tr>
<tr><td>Band III</td><td colspan="2">-89.7</td></tr>
<tr><td colspan="2">SFN-CFN observed time difference as specified in TS 25.215 [22]</td><td>chip</td><td colspan="6">x
Note 2</td></tr>
<tr><td colspan="2">Propagation condition</td><td>-</td><td colspan="2">AWGN</td><td colspan="2">AWGN</td><td colspan="2">AWGN</td></tr>
<tr><td colspan="9">NOTE 1: Io level has been calculated from other parameters for information purposes. It is not a settable parameter itself.</td></tr>
<tr><td colspan="9">NOTE2: For example, x= 491520 or 9830399. This is a calculated value using parameters ìOFFî and ìTmî as specified in TS 25.215 [22].</td></tr>
<tr><td colspan="9">Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.</td></tr>
</table>

The accuracy of the SFN-CFN observed time difference measurement value calculated from the reported ìOFFî and ìTmî values shall meet the requirements in table 8.7.4.1.5.

Table 8.7.4.1.5: SFN-CFN observed time difference measurement accuracy requirements for the reported values

<table>
<tr><th></th><th>Test 1</th><th>Test 2</th><th>Test 3</th></tr>
<tr><td>Lowest reported value</td><td>SFN_CFN_TIME (X - 2)</td><td>SFN_CFN_TIME (X - 2)</td><td>SFN_CFN_TIME (X - 2)</td></tr>
<tr><td>Highest reported value</td><td>SFN_CFN_TIME (X + 2)</td><td>SFN_CFN_TIME (X + 2)</td><td>SFN_CFN_TIME (X + 2)</td></tr>
<tr><td colspan="4">SFN-CFN_TIME (X) is the reported value for the actual SFN-CFN observed time difference value as defined in table 8.7.4.1.4</td></tr>
</table>

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.4.2 Inter frequency measurement requirement

8.7.4.2.1 Definition and applicability

The inter frequency SFN-CFN observed time difference is defined as the SFN-CFN time difference from the active cell to a neighbour cell that is in a different frequency. This measurement is specified in clause 5.1.8 of TS 25.215 [22].

The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.4.2.2 Minimum requirements

The accuracy requirement in table 8.7.4.2.1 is valid under the following conditions:

$CPICH\_RSCP1,2|_{dBm} \geq -114$ dBm for Band I.

$CPICH\_RSCP1,2|_{dBm} \geq -112$ dBm for Band II,

$CPICH\_RSCP1,2|_{dBm} \geq -111$ dBm for Band III.

$$\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \leq 20dB$$

$| \text{Channel 1\_Io}|_{dBm/3.84\ MHz} - \text{Channel 2\_Io}|_{dBm/3.84\ MHz} | \leq 20$ dB.

$$\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$$

Table 8.7.4.2.1 SFN-CFN observed time difference inter frequency accuracy

Parameter	Unit	Accuracy [chip]	Conditions		
			Io [dBm/3.84 MHz]		
			Band I	Band II	Band III
SFN-CFN observed time difference	chip	± 1	-94...-50	-92...-50	-91...-50

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.7.2 and A.9.1.4.2.

8.7.4.2.3 Test purpose

The purpose of this test is to verify that the SFN-CFN observed time difference measurement accuracy is within the specified limits in the clause 8.7.4.2.2. This measurement is for handover timing purposes to identify active cell and neighbour cell time difference.

8.7.4.2.4 Method of test

8.7.4.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

During the test the timing difference between Cell 1 and 2 can be set to value from 0Ö 9830399 chips.

In this test case both cells are in different frequency and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 ñ TTI/10msec))mod 256". Table 8.7.4.2.2 defines the limits of signal strengths and code powers, where the requirement is applicable.

Table 8.7.4.2.2: SFN-CFN observed time difference Inter frequency tests parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15		-15		-15	
OCNS_Ec/Ior		dB	-1.11		-1.11		-1.11	
Ĝr/Ioc		dB	10.1		10.1		10.1	
Ioc		dBm/ 3.84 MHz	*Io ñ10.6 dB = Ioc,* Note 1		*Io ñ10.6 dB = Ioc,* Note 1		*Io ñ10.6 dB = Ioc,* Note 1	
Io	Band I	dBm/3.84 MHz	-50		-72		-94	
	Band II						-92	
	Band III						-91	
S FN-CFN observed time difference as specified in TS 25.215 [22]		chip	x Note 2					
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: *Ioc* level shall be adjusted in each carrier frequency according the total signal power *Io* at receiver input and the geometry factor *Ĝr/Ioc*.								
NOTE2: For example, x= 491520 or 9830399. This is a calculated value using parameters ìOFFî and ìTmî as specified in TS 25.215 [22].								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

8.7.4.2.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.4.2.4.

2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

4) SS shall transmit MEASUREMENT CONTROL message.

5) UE shall transmit periodically MEASUREMENT REPORT messages.

6) SS shall check "OFF" and "Tm" values in MEASUREMENT REPORT message and calculate SFN-CFN observed time difference value according to the definition in clause 5.1.8 of TS 25.215 [22]. Note that according to TS 25.215 [22] UE is always reporting ìOFFî parameter to be zero. This value shall be compared to the actual SFN-CFN observed time difference value for each MEASUREMENT REPORT message taking into account that ìOFFî parameter is set to zero. .

7) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.2.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 5) and 6) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.2.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 5) and 6) above are repeated.

8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for inter frequency measurement

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
- CHOICE *channel requirement*	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 ñ TTI/10msec))mod 256
-Transmission gap pattern sequence configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	B
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD

-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT CONTROL message for Inter frequency measurement

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement	
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	
-Inter-frequency measurement quantity	Inter-frequency reporting criteria
-CHOICE reporting criteria	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH RSCP
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE~~FALSE~~
-Reporting cell status	FALSE
-CHOICE reported cell	
	Report cells within monitored set on non-used
-Maximum number of reported cells	frequency
-Measurement validity	2
-Inter-frequency set update	Not Present
-CHOICE report criteria	Not Present
-Amount of reporting	Periodical reporting criteria
-Reporting interval	Infinity
	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.4.2.5 Test requirements

Table 8.7.4.2.3 SFN-CFN observed time difference inter frequency accuracy

Parameter	Unit	Accuracy [chip]	Conditions		
			Io [dBm/3.84 MHz]		
			Band I	Band II	Band III
SFN-CFN observed time difference	chip	± 1.5	-94...-50	-92...-50	-91...-50

Table 8.7.4.2.4: SFN-CFN observed time difference Inter frequency tests parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15		-15		-15	
OCNS_Ec/Ior		dB	-1.11		-1.11		-1.11	
Îor/Ioc		dB	10.4		10.4		10.4	
Ioc	Band I	dBm/ 3.84 MHz	-62.1		-82.6		103.5	
	Band II						101.5	
	Band III						100.5	
Io, Note 1	Band I	dBm/3.84 MHz	-51.3		-71.8		-92.7	
	Band II						-90.7	
	Band III						-89.7	
SFN-CFN observed time difference as specified in TS 25.215 [22]		chip	x Note 2					
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: Io level has been calculated from other parameters for information purposes. It is not a settable parameter itself.								
NOTE2: For example, x= 491520 or 9830399. This is a calculated value using parameters ìOFFî and ìTmî as specified in TS 25.215 [22].								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

The accuracy of the SFN-CFN observed time difference measurement value calculated from the reported ìOFFî and ìTmî values shall meet the requirements in table 8.7.4.2.5.

Table 8.7.4.2.5: SFN-CFN observed time difference measurement accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Lowest reported value	SFN_CFN_TIME (X - 2)	SFN_CFN_TIME (X - 2)	SFN_CFN_TIME (X - 2)
Highest reported value	SFN_CFN_TIME (X + 2)	SFN_CFN_TIME (X + 2)	SFN_CFN_TIME (X + 2)
SFN-CFN_TIME (X) is the reported value for the actual SFN-CFN observed time difference value as defined in table 8.7.4.2.4 taking into account that ìOFFî parameter is set to zero.			

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

{Unchanged Sections are clipped here}

Annex I (normative): Default Message Contents

This Annex contains the default values of common messages, other than those described in TS 34.108. The messages are primarily concerning the RRM test cases in clause 8 and unless indicated otherwise in specific test cases, shall be transmitted and checked by the system simulator. The necessary messages are listed in alphabetical order.

In this Annex, decimal values are normally used. However, sometimes, a hexadecimal value, indicated by an "H", or a binary value, indicated by a "B" is used.

Contents of MEASUREMENT REPORT message for Intra frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Not present
- Cell synchronisation information	
- Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
- CPICH Ec/N0	If reporting of ìCPICH Ec/N0ì measurement is configured then check~~Checked~~ that this IE is present. If reporting of ìCPICH Ec/N0 ì measurement is not configured then check that this IE is absent.
- CPICH RSCP	If reporting of ìCPICH RSCP ~~CPICH Ec/N0~~ì measurement is configured then check~~Checked~~ that this IE is present. If reporting of ìCPICH RSCP ì measurement is not configured then check that this IE is absent.
- Pathloss	Checked that this IE is absent~~If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present~~
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

Contents of MEASUREMENT REPORT message for Inter frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Inter-frequency measured results list	
- UTRA Carrier RSSI	If reporting of ìUTRA Carrier RSSI ~~CPICH Ec/N0~~ì measurement is configured then check~~Checked~~ that this IE is present. If reporting of ìUTRA Carrier RSSI ì measurement is not configured then check that this IE is absent.
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Not present
- Cell synchronisation information	
-Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
- CPICH Ec/N0	If reporting of ìCPICH Ec/N0ì measurement is configured then check~~Checked~~ that this IE is present. If reporting of ìCPICH Ec/N0 ì measurement is not configured then check that this IE is absent.
- CPICH RSCP	If reporting of ìCPICH RSCP ~~CPICH Ec/N0~~ì measurement is configured then check~~Checked~~ that this IE is present. If reporting of ìCPICH RSCP ì measurement is not configured then check that this IE is absent.
- Pathloss	Checked that this IE is absent~~If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present~~
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

Contents of MEASUREMENT REPORT message for inter ñ RAT test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Inter-RAT measured results list	
- CHOICE system	GSM
- GSM	
- Measured GSM cells	Checked that this IE is present
- GSM carrier RSSI	If reporting of ìGSM carrier RSSIì measurement is configured then check~~Checked~~ that this IE is present. If reporting of ìGSM carrier RSSI ì measurement is not configured then check that this IE is absent.
- CHOICE *BSIC*	Non verified BSIC
- Non verified BSIC	
- BCCH ARFCN	Checked that this IE is present
- Observed time difference to GSM cell	Checked that this IE is absent~~If reporting of ìObserved time difference to GSM cellì measurement configured then checkChecked that this IE is present~~
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

3GPP TSG-T1 Meeting #25
St Paul's Bay, Malta, 1st - 5th November 2004

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CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	454	⌘ **rev**	**-**	⌘	Current version:	**5.5.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction to SFN-SFN observed time difference type 1 measurement test case		
Source:	⌘	Motorola, NEC		
Work item code:	⌘	TEI	***Date:*** ⌘	03/11/2004
Category:	⌘	**F**	***Release:*** ⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	This change is to configure SFN-SFN observed time difference type 1 measurements in CELL_FACH state.
Summary of change:	⌘	Configured the RACH reporting in SIB 11 and configured a periodic traffic volume measurement through a measurement control procedure.
Consequences if not approved:	⌘	SFN-SFN observed time difference type 1 measurements in CELL_FACH state can not be tested.

Clauses affected:	⌘	8.7.5			
		Y	**N**		
Other specs Affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This CR is applicable for UEís supporting Rel-99 or later.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.7.5 SFN-SFN observed time difference

8.7.5.1 SFN-SFN observed time difference type 1

8.7.5.1.1 Definition and applicability

This measurement is specified in clause 5.1.9 of TS 25.215 [22]. The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.5.1.2 Minimum requirements

The accuracy requirement in table 8.7.5.1.1 is valid under the following conditions:

CPICH_RSCP1,2$|_{dBm}$ ≥ -114 dBm for Band I.

CPICH_RSCP1,2$|_{dBm}$ ≥ -112 dBm for Band II,

CPICH_RSCP1,2$|_{dBm}$ ≥ -111 dBm for Band III.

$$\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \le 20dB$$

$$\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \le 20dB$$

$$\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{P-CCPCH\_E_c}{I_{or}}\right)\right|_{in\ dB}$$ is low enough to ensure successful SFN decoding.

Table 8.7.5.1.1 SFN-SFN observed time difference type 1 measurement accuracy

Parameter	Unit	Accuracy [chip]	Conditions		
			Io [dBm/3.84 MHz]		
			Band I	Band II	Band III
SFN-SFN observed time difference type1	chip	± 1	-94...-50	-92...-50	-91...-50

The normative reference for this requirement is TS 25.133 [2] clause 9.1.8.1.1 and A.9.1.5.1.2.

8.7.5.1.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-SFN observed time difference type 1 is within the limit specified in clause 8.7.5.1.2. This measurement is for identifying time difference between two cells.

8.7.5.1.4 Method of test

8.7.5.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

During the test the timing difference between Cell 1 and 2 can be set to value from 0Ö 9830399 chips.

1) Connect SS to the UE antenna connector as shown in figure A.11

~~2) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.5. The RF parameters for Test 1 are set up according to table 8.7.5.1.2.~~

In this case all cells are in the same frequency. Table 8.7.5.1.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table 8.7.5.1.2: SFN-SFN observed time difference type 1 Intra frequency test parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
S-CCPCH_Ec/Ior		dB	-12		-12		-12	
OCNS_Ec/Ior		dB	-1.29		-1.29		-1.29	
Ĝr/Ioc		dB	10.5		10.5		10.5	
Ioc		dBm/ 3.84 MHz	*Io ñ13.7 dB = Ioc,* Note 1		*Io ñ13.7 dB = Ioc,* Note 1		*Io ñ13.7 dB = Ioc,* Note 1	
Io	Band I	dBm/3.84 MHz	-50		-72		-94	
	Band II						-92	
	Band III						-91	
SFN-SFN observed time difference type 1 as specified in TS 25.215 [22]		chip	x Note 2					
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: *Ioc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor *Ĝr/Ioc*.								
NOTE2: For example, x= 491520 or 9830399. This is a calculated value using the parameters ìOFFî and ìTmî as specified in TS 25.215 [22].								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

8.7.5.1.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.5. The RF parameters for Test 1 are set up according to table 8.7.5.1.4.

2) SS shall transmit MEASUREMENT CONTROL message.

3~~2~~) UE shall transmit periodically MEASUREMENT REPORT messages.

4~~3~~) SS shall check "SFN-SFN observed time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual SFN-SFN observed time difference type 1 value for each MEASUREMENT REPORT message.

5~~4~~) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4~~3~~) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4~~3~~) above is repeated.

6~~5~~) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

7~~6~~) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 6.1.0b of 34.108 [3] and clause 9 of 34.108 [3], with the following exceptions:

~~Editorís note: UE behaviour is not specified for the current MEASUREMENT CONTROL message and therefore it is TBD.~~

Contents of System Information Block type 11 (FDD) (Step 1):

Information Element	Value/Remark
- Intra-frequency measurement system information	
- Intra-frequency reporting quantity for RACH Reporting	
- SFN-SFN observed time difference reporting indicator	type 1
- CHOICE mode	FDD
- Reporting quantity	CPICH RSCP
- Maximum number of reported cells on RACH	current cell + best neighbour

~~MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):~~

~~**Information Element**~~	~~**Value/Remark**~~
~~Message Type~~	
~~UE information elements~~ ~~-RRC transaction identifier~~ ~~-Integrity check info~~ ~~-message authentication code~~ ~~-RRC message sequence number~~	 ~~0~~ ~~-~~ ~~SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.~~ ~~SS provides the value of this IE, from its internal counter.~~
~~Measurement Information elements~~ ~~-Measurement Identity~~ ~~-Measurement Command~~ ~~-Measurement Reporting Mode~~ ~~--Measurement Report Transfer Mode~~ ~~--Periodical Reporting / Event Trigger Reporting Mode~~ ~~-Additional measurement list-CHOICE Measurement Type~~ ~~-Intra-frequency measurement~~ ~~--Intra-frequency measurement objects list~~ ~~--Intra-frequency measurement quantity~~ ~~---Filter coefficient~~ ~~---CHOICE mode~~ ~~----Measurement quantity~~ ~~--Intra-frequency reporting quantity~~ ~~---Reporting quantities for active set cells~~ ~~----Cell synchronisation information reporting indicator~~ ~~----Cell Identity reporting indicator~~ ~~----CHOICE mode~~ ~~-----CPICH Ec/N0 reporting indicator~~ ~~-----CPICH RSCP reporting indicator~~ ~~-----Pathloss reporting indicator~~ ~~---Reporting quantities for monitored set cells~~ ~~----Cell synchronisation information reporting indicator~~ ~~----Cell Identity reporting indicator~~ ~~----CHOICE mode~~ ~~-----CPICH Ec/N0 reporting indicator~~ ~~-----CPICH RSCP reporting indicator~~ ~~-----Pathloss reporting indicator~~ ~~---Reporting quantities for detected set cells~~ ~~--Reporting cell status~~ ~~---CHOICE reported cell~~ ~~----Maximum number of reported cells~~ ~~--Measurement validity~~ ~~--CHOICE *report criteria*~~ ~~---Amount of reporting~~ ~~---Reporting interval~~	 ~~1~~ ~~Modify~~ ~~Acknowledged mode RLC~~ ~~Periodical reporting~~ ~~Not Present~~ ~~Intra-frequency measurement~~ ~~Not Present~~ ~~0~~ ~~FDD~~ ~~CPICH RSCP~~ ~~TRUE~~ ~~TRUE~~ ~~FDD~~ ~~TRUE~~ ~~FALSE~~ ~~FALSE~~ ~~TRUE~~ ~~TRUE~~ ~~FDD~~ ~~FALSE~~ ~~TRUE~~ ~~FALSE~~ ~~Not Present~~ ~~Report all active set cells + cells within monitored set on used frequency~~ ~~Virtual/active set cells + 2~~ ~~Not Present~~ ~~Periodical reporting criteria~~ ~~Infinity~~ ~~250 ms~~
~~Physical channel information elements~~ ~~-DPCH compressed mode status info~~	 ~~Not Present~~

MEASUREMENT CONTROL message for Traffic Volume measurement (Step 2):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements - RRC transaction identifier - Integrity check info - message authentication code - RRC message sequence number	 0 - SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements - Measurement Identity - Measurement Command (10.3.7.46) - Measurement Reporting Mode (10.3.7.49) - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode - Additional measurements list (10.3.7.1)	 4 Setup AM RLC Periodical reporting Not Present
- CHOICE *Measurement type (10.3.7.68)* - Traffic volume measurement Object (10.3.7.70) - Traffic volume measurement objects - Uplink transport channel type - UL Target Transport Channel ID - Traffic volume measurement quantity (10.3.7.71) - Measurement quantity - Time Interval to take an average or a variance - Traffic volume reporting quantity (10.3.7.74) - RLC Buffer Payload for each RB - Average of RLC Buffer Payload for each RB - Variance of RLC Buffer Payload for each RB - Measurement validity (10.3.7.51) - CHOICE *report criteria (10.3.7.53)* - Amount of reporting - Reporting interval	Traffic Volume measurement 1 RACHorCPCH Not Present RLC Buffer Payload Not Present FALSE FALSE FALSE Not Present Periodical reporting criteria Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present

~~MEASUREMENT REPORT message for Intra frequency test cases~~

~~This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.~~

MEASUREMENT REPORT message for SFN-SFN observed time difference type 1 test case (Step 3)

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	4
Measured Results	Checked that this IE is absent
Measured results on RACH	Checked that this IE is present
- Measurement result for current cell	Checked that this IE is present
- CHOICE mode	FDD
- CHOICE measurement quantity	Checked that this IE is present
- Measurement results for monitored cells	1
- SFN-SFN observed time difference	Checked that this IE is present
- CHOICE Type	Type 1
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

8.7.5.1.5 Test requirements

Table 8.7.5.1.3 SFN-SFN observed time difference type 1 measurement accuracy

Parameter	Unit	Accuracy [chip]	Conditions		
			Io [dBm/3.84 MHz]		
			Band I	Band II	Band III
SFN-SFN observed time difference type1	chip	± 1.5	-94...-50	-92...-50	-91...-50

Table 8.7.5.1.4: SFN-SFN observed time difference type 1 Intra frequency test parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
S-CCPCH_Ec/Ior		dB	-12		-12		-12	
OCNS_Ec/Ior		dB	-1.29		-1.29		-1.29	
Îor/Ioc		dB	10.8		10.8		10.8	
Ioc	Band I	dBm/ 3.84 MHz	-65.3 dB		-85.7		-106.7	
	Band II						-104.7	
	Band III						-103.7	
Io, Note 1	Band I	dBm/3.84 MHz	-51.3		-71.7		-92.7	
	Band II						-90.7	
	Band III						-89.7	
SFN-SFN observed time difference type 1 as specified in TS 25.215 [22]		chip	x Note 2					
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: Io level has been calculated from other parameters for information purposes. It is not a settable parameter itself.								
NOTE2: For example, x= 491520 or 9830399. This is a calculated value using the parameters ìOFFî and ìTmî as specified in TS 25.215 [22].								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

The reported values for SFN-SFN observed time difference type 1 accuracy shall meet the requirements in table 8.7.5.1.5.

Table 8.7.5.1.5: SFN-SFN observed time difference type 1 measurement accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Lowest reported value	T1_SFN-SFN_TIME_(X ñ 2)	T1_SFN-SFN_TIME_(X ñ 2)	T1_SFN-SFN_TIME_(X ñ 2)
Highest reported value	T1_SFN-SFN_TIME_(X + 2)	T1_SFN-SFN_TIME_(X + 2)	T1_SFN-SFN_TIME_(X + 2)
T1_SFN-SFN_TIME_(X) is the reporting value corresponding to SFN-SFN observed time difference type 1 measured by system simulator			

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #25
St Paul's Bay, Malta, 1st - 5th November 2004

Tdoc ⌘ T1-041838

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CHANGE REQUEST

⌘	**34.121**	**CR**	455	⌘ **rev**	-	⌘	Current version:	**5.5.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects:	UICC apps⌘ [ ]	ME [X]	Radio Access Network [ ]	Core Network [ ]

Title:	⌘	Corrections to HSDPA test 6.3A (max input power)		
Source:	⌘	Agilent Technologies		
Work item code:	⌘	TEI	***Date:*** ⌘	03/11/2004
Category:	⌘	**F**	***Release:*** ⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Clarification of the text and correction of several incorrect references
Summary of change:	⌘	a) Added definition of regDTX and statDTX in section 3.1 b) Added regDTX and statDTX to section 3.3 abbreviations c) Corrected reference to HSDPA OCNS in 6.3A.2 from E.3.3 to E.5.2 d) Corrected test purpose e) Corrected reference in 6.3A.4 to HSDPA downlink channels from E.3.3 to E.5.1 f) Removed redundant reference to algorithm 2 in method of test ñ this is already part of the initial conditions g) Changed DTX to statDTX in various places h) Added reference in 6.3A.5 test requirements to the specific table in F.6.3 which defines the length of test i) Aligned name of table 6.3A.4 with table 6.3A.1 j) Added missing column name in table 6.3A.4 k) Added missing column heading in table 6.3A.4 l) Added reference to 6.3A in E.5
Consequences if not approved:	⌘	The test conditions will not be correct and the test may fail a good UE.

Clauses affected:	⌘	3.1, 3.3, 6.3A, E.5				
		Y	**N**			
Other specs Affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘

How to create CRs using this form:

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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

3.1 Definitions

For the purpose of the present document, the following additional terms and definitions apply:

Maximum Output Power: This is a measure of the maximum power the UE can transmit (i.e. the actual power as would be measured assuming no measurement error) in a bandwidth of at least (1+ α) times the chip rate of the radio access mode. The period of measurement shall be at least one timeslot.

Nominal Maximum Output Power: This is the nominal power defined by the UE power class.

Mean power: When applied to a W-CDMA modulated signal this is the power (transmitted or received) in a bandwidth of at least (1+ α) times the chip rate of the radio access mode. The period of measurement shall be at least one timeslot unless otherwise stated.

RRC filtered mean power: The mean power as measured through a root raised cosine filter with roll-off factor α and a bandwidth equal to the chip rate of the radio access mode.

NOTE 1: The RRC filtered mean power of a perfectly modulated W-CDMA signal is 0.246 dB lower than the mean power of the same signal.

NOTE 2: The roll-off factor α is defined in 25.101 clause 6.8.1.

RegDTX: Regular DTX. These are the times when the HS-DPCCH ACK/NACK is not expected to be transmitted due to an Inter-TTI period greater than 1

statDTX: Statistical DTX. These are the times when the HS-DPCCH is expected to transmit an ACK or NACK but none is transmitted due to the UE not being able to decode consistent control information from the HS_SCCH.

Throughput: Number of information bits per second excluding CRC bits successfully received on HS-DSCH by a HSDPA capable UE.

3.2 Symbols

For the purposes of the present document, the following symbols apply:

[Ö] Values included in square bracket must be considered for further studies, because it means that a decision about that value was not taken

3.3 Abbreviations

For the purpose of the present document, the following additional abbreviations apply:

AFC	Automatic Frequency Control
ASD	Acceleration Spectral Density
ATT	Attenuator
BER	Bit Error Ratio
BLER	Block Error Ratio
BTFD	Blind Transport Format Detection
CQI	Channel Quality Indicator
EVM	Error Vector Magnitude
FDR	False transmit format Detection Ratio. A false Transport Format detection occurs when the receiver detects a different TF to that which was transmitted, and the decoded transport block(s) for this incorrect TF passes the CRC check(s).
HSDPA	High Speed Downlink Packet Access
HS-DSCH	High Speed Downlink Shared Channel
HS-PDSCH	High Speed Physical Downlink Shared Channel
HARQ	Hybrid ARQ sequence
HYB	Hybrid
IM	Intermodulation
ITP	Initial Transmission Power control mode
OBW	Occupied Bandwidth

OCNS	Orthogonal Channel Noise Simulator, a mechanism used to simulate the users or control signals on the other orthogonal channels of a downlink
PAR	Peak to Average Ratio
P-CCPCH	Primary Common Control Physical Channel
P-CPICH	Primary Common Pilot Channel
PCDE	Peak Code Domain Error
RBW	Resolution Bandwidth
PRBS	Pseudo Random Bit Sequence
regDTX	Regular DTX
RRC	Root-Raised Cosine
S-CCPCH	Secondary Common Control Physical Channel
S-CPICH	Secondary Common Pilot Channel
SCH	Synchronisation Channel consisting of Primary and Secondary synchronisation channels
SS	System Simulator; see Annex A for description
statDTX	Statistical DTX
TGCFN	Transmission Gap Connection Frame Number
TGD	Transmission Gap Distance
TGL	Transmission Gap Length
TGPL	Transmission Gap Pattern Length
TGPRC	Transmission Gap Pattern Repetition Count
TGSN	Transmission Gap Starting Slot Number

6.3A Maximum Input Level for HS-PDSCH Reception (16QAM)

6.3A.1 Definition and applicability

Maximum input level is defined as the maximum mean HS-PDSCH power received at the UE antenna port, which shall not degrade the specified HSDPA throughput performance. The requirements and this test apply to all types of UTRA FDD UE that support HSDPA(16QAM).

6.3A.2 Minimum requirements

For the parameters specified in Table 6.3A.1, the requirements are specified in terms of a minimum information bit throughput R as shown in Table 6.3A.2 for the DL reference channel H-Set 1 specified in Annex C.8. with the addition of the parameters added in the end of Table 6.3A.1.~~,~~

The throughput shall meet or exceed the minimum level the ~~-~~ for the parameters specified in table 6.3A.1.

The reference for this requirement is TS 25.101 [1] clause 7.4.1.

Table 6.3A.1 Minimum requirement parameters for 16QAM Maximum Input Level

Parameter	Unit	Test
Phase reference		P-CPICH
$\hat{I}_{or}$	dBm/3.84 MHz	-25 *
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)
DPCH	DPCH_Ec/Ior	-13
HS-SCCH_1	HS-SCCH_Ec/Ior	-13
Redundancy and constellation version		6
Maximum number of HARQ transmissions		1
Note: The HS-DSCH shall be transmitted continuously with constant power but only every third TTI shall be sent to the UE under test.		

Table 6.3A.2 Minimum throughput requirement

HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) *
-3	700

NOTE: The structure of OCNS signal is defined in clause E.~~3.3~~5.2.

6.3A.3 Test purpose

To verify that the UE HSDPA throughput meets the minimum requirements specified in table 6.3A.2 for the DL reference channel H-Set 1 specified in Annex C.8. with the addition of the parameters specified in table 6.3A.4.

An inadequate ~~-~~ maximum input level causes loss of coverage near the Node B.

6.3A.4 Method of test

6.3A.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

RF parameters are given in tables 6.3A.4 and table E.~~3.3~~5.1.

Table 6.3A.3 Contents of RADIO BEARER SETUP message: AM or UM

Information Element	Value/Remark
CHOICE channel requirement - Power Control Algorithm	Uplink DPCH info Algorithm2

6.3A.4.2 Procedure

Connect the SS to the UE antenna connector as shown in figure A.3.

1) The UE is switched on.

2) An RRC connection is set-up according to the generic HSDPA set-up procedure specified in TS 34.108 [3]. ~~(The Power Control Algorithm for the Uplink is set to algorithm 2).~~ Additional radio bearer message definition is in table 6.3A.3.

3) Set the power level of UE according to the table 6.3A.4 and send power control commands to the UE. The UE output power measured by Test System shall be kept at the specified power level with ±1dB tolerance.

4). Measure the HSDPA throughput received from the UE at the SS, by counting the number of NACK, ACK and statDTX on the UL HS-DPCCH (Throughput = blocksize*number of blocks acknowledged/time).

5) The UE is switched off.

6.3A.5 Test requirements

The measured throughput, as derived in step 4), shall meet or exceed 700Kbit/second. The minimum number of measurements required for a statistically significant result to this test are clarified in annex F.6.3, Table F.6.3.5.1.

Table 6.3A.4: Test ~~conditions~~ requirement parameters for 16QAM Maximum Input Level

Parameter	Unit	Value
Phase reference		P-CPICH
$\hat{I}_{or}$	dBm/3.84 MHz	-25.7
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)
DPCH	DPCH_Ec/Ior	-13
HS-SCCH_1	HS-SCCH_Ec/Ior	-13
Redundancy and constellation version		6
Maximum number of HARQ transmissions		1
Note: The HS-DSCH shall be transmitted continuously with constant power but only every third TTI shall be sent to the UE under test.		

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

E.5 HSDPA DL Physical channels

E.5.1 Downlink Physical Channels connection set-up

Table E.5.1 is applicable for the measurements for tests in subclause 6.3A, 9.2.1 and 9.3. Table E.5.2 is applicable for the measurements for tests in subclause 9.2.2. Table E.5.3 is applicable for the measurements for tests in subclause 9.2.3. Table E.5.4 is applicable for the measurements for tests in subclause 9.4.

3GPP TSG-T1 Meeting #25 **Tdoc ⌘T1-041841**
Malta 1st - 5th November, 2004

CR-Form-v7

CHANGE REQUEST

⌘ 34.121 CR 456 ⌘rev - ⌘	Current version: 5.5.0 ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	CM configuration in FDD inter frequency measurements in TC 8.6.2.1
Source:	⌘	Intel
Work item code:	⌘	TEI — ***Date:*** ⌘ 2/11/2004
Category:	⌘	F — ***Release:*** ⌘ R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	34.121 And 25.331specs are not aligned. In 34.121 8.6.2.1.4.2 clause TGPRC IE is shown as "Not Present", although it is MP according to 25.331.
Summary of change:	⌘	Specify a value for TGPRC IE since it is MP according to 25.331.
Consequences if not approved:	⌘	TGPRC IE will not be configured according to 34.121 spec since ASN.1 is aligned to 25.331 spec

Clauses affected:	⌘	8.6.2.1				
		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR applies to release 99				

8.6.2 FDD inter frequency measurements

8.6.2.1 Correct reporting of neighbours in AWGN propagation condition

8.6.2.1.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit the measurement report over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the FDD UE.

8.6.2.1.2 Minimum requirements

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify inter}} = Max\left\{5000, T_{\text{basic identify FDD,inter}} \cdot \frac{T_{\text{Measurement Period, Inter}}}{T_{\text{Inter}}} \cdot N_{Freq}\right\} ms$$

A cell shall be considered detectable when CPICH Ec/Io $\geq$ -20 dB, SCH_Ec/Io $\geq$ -17 dB for at least one channel tap and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

When transmission gaps are scheduled for FDD inter frequency measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.1 and 9.1.2 of 25.133 with measurement period given by

$$T_{\text{measurement inter}} = Max\left\{T_{\text{Measurement\_Period Inter}}, T_{\text{basic measurement FDD inter}} \cdot \frac{T_{\text{Measurement\_Period Inter}}}{T_{\text{Inter}}} \cdot N_{Freq}\right\} ms$$

If the UE does not need compressed mode to perform inter-frequency measurements, the measurement period for inter frequency measurements is 480 ms.

The UE shall be capable of performing CPICH measurements for $X_{\text{basic measurement FDD inter}}$ inter-frequency cells per FDD frequency of the monitored set or the virtual active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $T_{\text{Measurement\_ Inter.}}$

$X_{\text{basic measurement FDDinter}} = 6$

$T_{\text{Measurement\_Period Inter}}$ = 480 ms. The period used for calculating the measurement period $T_{\text{measurement\_inter}}$ for inter frequency CPICH measurements.

$T_{\text{Inter:}}$ This is the minimum time that is available for inter frequency measurements , during the period $T_{\text{Measurement\_Period inter}}$ with an arbitrarily chosen timing. The minimum time per transmission gap is calculated by using the actual idle length within the transmission gap as given in the table 11 of Annex B in TS 25.212 and by assuming 2*0.5 ms for implementation margin and after that taking only full slots into account in the calculation.

$T_{\text{basic\_identify\_FDD,inter}}$ = 800 ms. This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.

$T_{\text{basic\_measurement\_FDD inter}}$ = 50 ms. This is the time period used in the equation for defining the measurement period for inter frequency CPICH measurements.

N_{Freq}: Number of FDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than T $_{\text{identify inter}}$ defined in Clause 8.1.2.3.1 of 25.133 When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{\text{identify\_inter}}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{\text{Measurement\_Period Inter}}$ provided the timing to that cell has not changed more than +/-32 chips while transmission gap has not been available and the L3 filter has not been used.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.3 and A.8.2.1.

8.6.2.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.2.1.4 Method of test

8.6.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The initial test parameters are given in table 8.6.2.1.1

Table 8.6.2.1.1: Cell specific initial test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	0	-Inf	-Inf
I_{oc}	dBm/3.84 MHz	-70		
CPICH_Ec/Io	dB	-13	-Inf	-Inf
Propagation Condition		AWGN		

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables 8.6.2.1.2 and 8.6.2.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

Table 8.6.2.1.2: General test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Compressed mode		C.5.2 set 1	As specified in C.5.
Active cell		Cell 1	
Threshold non used frequency	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range	dB	4	Applicable for event 1A
Hysteresis	dB	0	
W		1	Applicable for event 1A
W non-used frequency		1	Applicable for event 2C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1 16 on channel 2	NOTE: See Annex I for cell information.The information is sent before the compressed mode pattern starts.
T1	s	10	
T2	s	5	

Table 8.6.2.1.3: Cell Specific parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-17		N/A		N/A	
OCNS_Ec/Ior	dB	-1.049		ñ0.941		ñ0.941	
$\hat{I}_{or}/I_{oc}$	dB	0	5.42	-Infinity	3.92	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/Io	dB	-13	-13	-Infinity	-14.5	-14	-14
Propagation Condition	AWGN						

8.6.2.1.4.2 Procedure

1) The RF parameters are set up according to T0.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
4) SS shall transmit a MEASUREMENT CONTROL message (inter frequency).
5) SS shall transmit a MEASUREMENT CONTROL message (intra frequency).
6) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

7) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

8) 5 seconds after step7 has completed, the SS shall switch the power settings from T0 to T1.

9) UE shall transmit a MEASUREMENT REPORT message (inter frequency) triggered by event 2C. The measurement reporting delay from the beginning of T1 shall be less than 9.08 seconds. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

10) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

11) UE shall transmit a MEASUREMENT REPORT message (intra frequency) triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 1040 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

12) After 5 seconds from the beginning of T2, the UE is switched off.

13) Repeat steps 1-12 until the confidence level according to annex F.6.2 is achieved.

NOTE: The measurement reporting delay is 956.2 ms plus 80 ms delay uncertainty (twice the TTI). This gives a total of 1036.2 ms and rounded off to 1040 ms.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement:

Information Element	Value/Remark
Message Type	
UE Information Elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number -Integrity protection mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. Not Present Not Present Not Present Not Present Not Present CELL_DCH Not Present
CN Information Elements -CN Information info	 Not Present
UTRAN mobility information elements -URA identity	 Not Present
RB information elements -Downlink counter synchronisation info	 Not Present
PhyCH information elements -Frequency info	 Not Present
Uplink radio resources -Maximum allowed UL TX power	 Not Present
Downlink radio resources -CHOICE mode -Downlink PDSCH information -Downlink information common for all radio links -Downlink DPCH info common for all RL -CHOICE mode -DPCH compressed mode info -Transmission gap pattern sequence -TGPSI -TGPS Status Flag -TGCFN -Transmission gap pattern sequence configuration parameters -TGMP -TGPRC -TGSN -TGL1 -TGL2 -TGD -TGPL1 -TGPL2 -RPP -ITP -CHOICE UL/DL mode -Downlink compressed mode method -Uplink compressed mode method -Downlink frame type -DeltaSIR1 -DeltaSIRafter1 -DeltaSIR2 -DeltaSIRafter2 -N Identify abort	 FDD Not Present Not Present FDD 1 Activate (Current CFN + (256 ñ TTI/10msec))mod 256 FDD measurement ~~Not present~~ Infinity 4 7 Not Present UNDEFINED 3 Not Present Mode 0 Mode 0 UL and DL SF/2 SF/2 B 3.0 3.0 Not Present Not Present Not Present

-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
- Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT CONTROL message (inter frequency):

Information Element/Group name	**Value/Remark**
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0
-message authentication code -RRC message sequence number	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 2 Setup AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) - CHOICE Inter-frequency cell removal - New Inter frequency cells - Inter frequency cell id - Frequency info - CHOICE mode - UARFCN uplink(Nu) - UARFCN downlink(Nd) - Cell info - Cell individual offset - Reference time difference to cell - Read SFN indicator - CHOICE mode - Primary CPICH info - Primary scrambling code - Primary CPICH Tx Power - Tx Diversity Indicator - Cell for measurement -Inter-frequency measurement quantity (10.3.7.18) -Intra-frequency reporting criteria -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE mode -Measurement quantity -Inter-frequency reporting criteria -Filter coefficient (10.3.7.9) -CHOICE mode -Measurement quantity for frequency quality estimate -Inter-frequency reporting quantity (10.3.7.21) -UTRA Carrier RSSI -Frequency quality estimate -Non frequency related cell reporting quantities (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	Inter-frequency measurement Not Present 0 FDD Not Present Same frequency as "Channel2" in Table 8.6.2.1.3 Not Present Not Present TRUE FDD Set to Primary scrambling code of Cell3 Set to Primary CPICH Tx Power of Cell3 described in Table 8.6.2.1.3 FALSE Not Present 0 FDD CPICH_Ec/N0 0 FDD CPICH_Ec/N0 FALSE FALSE TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51)	Not Present Not Present

Information Element/Group name	Value/Remark
-CHOICE report criteria -Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event	Inter-frequency measurement reporting criteria 1
-Inter-frequency event identity -Threshold used frequency -W used frequency -Hysteresis -Time to trigger -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Parameters required for each non-used frequency -Threshold non used frequency -W non-used frequency	Event 2C Not present Not present 0 dB 0 ms Report cells within monitored set on non-used frequency 3 -18 dB 1
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present
NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.	

MEASUREMENT CONTROL message (intra frequency):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0
-message authentication code -RRC message sequence number	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity (10.3.7.41)	Intra-frequency measurement Not Present 0 FDD CPICH_Ec/N0
-Reporting quantities for active set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE report criteria -Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event	Not Present Not Present Intra-frequency measurement reporting criteria 1
-Intra-frequency event identity -Triggering condition 2 -Reporting Range Constant -Cells forbidden to affect Reporting Range -CHOICE mode -Primary CPICH info (10.3.6.60) -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status	Event 1A Monitored set cells 4 dB Not Present FDD 1.0 0 dB Not Present 0 Not Present 0 ms Not Present 0 ms (Note 2) Not Present

Information Element/Group name	Value/Remark
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL. Note 2: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message for Inter frequency test cases

MEASUREMENT REPORT message for Intra frequency test cases

These messages are common for all inter and intra frequency test cases and are described in Annex I.

8.6.2.1.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

Tdoc ⌘T1-041843

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CHANGE REQUEST

⌘	**34.121**	**CR**	457	⌘ **rev**	**-**	⌘	Current version:	**5.5.0**	⌘

For ***HELP*** *on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘ Addition of the scheduling information for Cell Re-Selection test cases		
Source:	⌘ Anritsu		
Work item code:	⌘	***Date:*** ⌘	3/11/2004
Category:	⌘ **F** *Use one of the following categories:* ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	***Release:*** ⌘	Rel-5 *Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘ The SIB repetition period is not specified.
Summary of change:	⌘ T_{SI} is clarified in the general test parameters tables, and the scheduling information for Cell Re-Selection test cases is added in Annex I.
Consequences if not approved:	⌘ Test equipment could not configure the SIB repetition period for Cell-Reselection test cases.

Clauses affected:	⌘ 8.2.2,8.3.5,8.3.6,8.3.7				
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘ This CR applies for Rel-99 and later releases.				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2.2 Cell Re-Selection

8.2.2.1 Scenario 1: Single carrier case

8.2.2.1.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the RRC CONNECTION REQUEST message to perform a Location Updating procedure (MM) or Routing Area Updating procedure (GMM) on the new cell.

The requirements and this test apply to the FDD UE.

8.2.2.1.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

$T_{evaluateFDD}$	See table 4.1 in TS 25.133 [2] clause 4.2.2.
T_{SI}	Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2.2 and A.4.2.1.

8.2.2.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.2.1.4 Method of test

8.2.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 1 carrier and 6 cells as given in tables 8.2.2.1.1 to 8.2.2.1.3. The UE is requested to monitor neighbouring cells on 1 carrier. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.1.1: Scenario 1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
SYSTEM INFORMATION BLOCK TYPE 1 - CN common GSM-MAP NAS system information		-	00 80(H) → Cell 1 00 81(H) → Cell 2	This identity should be set as different value from the neigbour cell so that a Location Updating procedure(MM) or a Routing Area Updating procedure(GMM) is performed when UE selects more suitable cell in idle state.
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
T_{SI}		ms	1280	See Annex I for the SIB repetition period of system information blocks.
DRX cycle length		s	1,28	The value shall be used for all cells in the test.
T1		s	15	T1 need to be defined so that cell re-selection reaction time is taken into account.
T2		s	15	T2 need to be defined so that cell re-selection reaction time is taken into account.

Table 8.2.2.1.2: Scenario 1: Test parameters for Cell re-selection single carrier multi cell

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
OCNS_Ec/Ior	dB	-0,941		-0,941		-0,941		-0,941		-0,941		-0,941	
$\hat{I}_{or}/I_{oc}$	dB	7,3	10,27	10,27	7,3	0,27		0,27		0,27		0,27	
$\hat{I}_{or}$ *(Note 1)*	dBm	-62.73	-59.73	-59.73	-62.73	-69.73		-69.73		-69.73		-69.73	
I_{oc}	dBm / 3,84 MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-23		-23		-23		-23	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dB	21		21		21		21		21		21	
$Qoffset2_{s,n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	

Note 1 The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.2.2.1.4.2 Procedure

1) The SS activates cell 1-6 with T1 defined parameters in table 8.2.2.1.3 and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

3) The SS and the UE shall perform a first registration procedure on cell2.

4) 15 s after step 3 has completed, the parameters are changed to that as described for T2 in table 8.2.2.1.3.

5) The SS waits for random access requests from the UE. If the UE responds on cell 1 within 8 s from the beginning of time period T2 then the number of successful tests is increased by one. The SS and the UE shall perform a Location Updating procedure (MM) or a Routing Area Updating procedure (GMM) on cell1.

6) After 15 s from the beginning of time period T2, the parameters are changed to that as described for T1 in table 8.2.2.1.3.

7) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 8 s from the beginning of time period T1 then the number of successful tests is increased by one. The SS and the UE shall perform a Location Updating procedure(MM) or a Routing Area Updating procedure (GMM) on cell2.

8) After 15 s from the beginning of time period T1, the parameters are changed to that as described for T2.

9) Repeat step 5) to 8) until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s.(Minimum requirement + 100ms), allow 8s in the test case.

8.2.2.1.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.2.2.1.3: Scenario 1: Test requirements for Cell re-selection single carrier multi cell

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.5		-10.5		-10.5		-10.5	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.5		-15.5		-15.5		-15.5	
OCNS_Ec/Ior	dB	-1.10		-1.10		-0.83		-0.83		-0.83		-0.83	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	7.00	10.40	10.40	7.00	0.30		0.30		0.30		0.30	
$\hat{I}_{or}$	dBm	-63.0	-59.6	-59.6	-63.0	-69.7		-69.7		-69.7		-69.7	
I_{oc}	dBm / 3,84 MHz	-70											
CPICH_Ec/Io *Note 1*	dB	-15.7	-12.3	-12.3	-15.7	-23.5		-23.5		-23.5		-23.5	

All other parameters and conditions specified in table 8.2.2.1.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.2 Scenario 2: Multi carrier case

8.2.2.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the RRC CONNECTION REQUEST message to perform a Location Updating procedure(MM) or Routing Area Updating procedure (GMM) on the new cell.

The requirements and this test apply to the FDD UE.

8.2.2.2.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

$T_{evaluateFDD}$ See table 4.1 in TS 25.133 [2] clause 4.2.2.
T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2.3 and A.4.2.2.

8.2.2.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.2.2.4 Method of test

8.2.2.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 2 carriers and 6 cells as given in tables 8.2.2.2.1 to 8.2.2.2.3. The UE is requested to monitor neighbouring cells on 2 carriers. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.2.1: Scenario 2: General test parameters for Cell Re-selection in multi carrier case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
SYSTEM INFORMATION BLOCK TYPE 1 - CN common GSM-MAP NAS system information		-	00 80(H) → Cell 1 00 81(H) → Cell 2	This identity should be set as different value from the neigbour cell so that a Location Updating procedure (MM) or a Routing Area Updating procedure (GMM) is performed when UE selects more suitable cell in idle state.
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
T_{SI}		ms	1280	See Annex I for the SIB repetition period of system information blocks.
DRX cycle length		S	1,28	The value shall be used for all cells in the test.
T1		s	30	T1 need to be defined so that cell re-selection reaction time is taken into account.
T2		s	15	T2 need to be defined so that cell re-selection reaction time is taken into account.

Table 8.2.2.2.2: Scenario 2: Test parameters for Cell re-selection multi carrier multi cell

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
OCNS_Ec/Ior	dB	-0.941		-0.941		-0.941		-0.941		-0.941		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	-3.4	2.2	2.2	-3.4	-7.4	-4.8	-7.4	-4.8	-4.8	-7.4	-4.8	-7.4
$\hat{I}_{or}$ *(Note 1)*	dBm	-73.39	-67.75	-67.75	-73.39	-77.39	-74.75	-77.39	-74.75	-74.75	-77.39	-74.75	-77.39
I_{oc}	dBm / 3.84 MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-20		-20		-20		-20	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dB	21		21		21		21		21		21	
Qoffset2$_{s, n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
Sintersearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	

Note 1 The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.2.2.2.4.2 Procedures

1) The SS activates cell 1-6 with T1 defined parameters in table 8.2.2.2.3 and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

3) The SS and the UE shall perform a first location registration procedure on cell2.

4) 30 s after step3 has completed, the parameters are changed to that as described for T2 in table 8.2.2.2.3.

5) The SS waits for random access request from the UE. If the UE responds on cell 1 within 8 s from the beginning of time period T2 then the number of successful tests is increased by one. The SS and the UE shall perform a Location Updating procedure (MM) or a Routing Area Updating procedure (GMM) on cell1.

6) After another 15 s from the beginning of time period T2, the parameters are changed to that as described for T1 in table 8.2.2.2.3.

7) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 8 s from the beginning of time period T1 then the number of successful tests is increased by one. The SS and the UE shall perform a Location Updating procedure (MM) or a Routing Area Updating procedure (GMM) on cell2.

8) After 15 s from the beginning of time period T1, the parameters are changed as described for T2.

9) Repeat step 5) to 8) until the confidence level according to annex F.6.2 is achieved.

NOTE 1: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

NOTE 2: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s.(Minimum requirement + 100ms), allow 8s in the test case.

8.2.2.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.2.2.2.3: Scenario 2: Test parameters for Cell re-selection multi carrier multi cell, test requirements

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-9.3		-9.3		-10.8		-10.8		-10.8		-10.8	
PCCPCH_Ec/Ior	dB	-11.3		-11.3		-12.8		-12.8		-12.8		-12.8	
SCH_Ec/Ior	dB	-11.3		-11.3		-12.8		-12.8		-12.8		-12.8	
PICH_Ec/Ior	dB	-14.3		-14.3		-15.8		-15.8		-15.8		-15.8	
OCNS_Ec/Ior	dB	-1.13		-1.13		-0.77		-0.77		-0.77		-0.77	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	-3.40	+4.80	+4.80	-3.40	-7.40	-3.00	-7.40	-3.00	-3.00	-7.40	-3.00	-7.40
$\hat{I}_{or}$	dBm	-73.4	-67.0	-67.0	-73.4	-77.4	-74.8	-77.4	-74.8	-74.8	-77.4	-74.8	-77.4
I_{oc}	dBm/3.84 MHz	-70.0	-71.8	-71.8	-70.0	-70.0	-71.8	-70.0	-71.8	-71.8	-70.0	-71.8	-70.0
CPICH_Ec/Io *Note 1*	dB	-15.3	-11.5	-11.5	-15.3	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8

All other parameters and conditions specified in table 8.2.2.2.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

{Unchanged Sections are clipped here}

8.3.5 Cell Re-selection in CELL_FACH

8.3.5.1 One frequency present in neighbour list

8.3.5.1.1 Definition and applicability

The cell re-selection delay is defined as the time between the occurrence of an event which will trigger Cell Reselection process and the moment in time when the UE starts sending the the preambles on the PRACH for sending RRC CELL UPDATE message to the UTRAN.

The requirements and this test apply to the FDD UE.

8.3.5.1.2 Minimum requirements

The cell re-selection delay shall be less than 1.6 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

If a cell has been detectable at least $T_{identify,intra}$, the cell reselection delay in CELL_FACH state to a cell in the same frequency shall be less than

$$T_{reselection,\,intra} = T_{Measurement\_Period\ Intra} + T_{IU} + 20 + T_{SI} + T_{RA}\ \text{ms}$$

where

$T_{Measurement\_Period\ Intra}$ = 200 ms.

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. 1280 ms is assumed in this test case.

T_{RA} = The additional delay caused by the random access procedure. T_{RA} is a delay is caused by the physical random access procedure described in TS 25.214 clause 6.1. A persistence value is assumed to be 1 in this test case and therefore T_{RA} in this test case is 40 ms.

These requirements assume radio conditions to be sufficient, so reading of system information can be done without errors.

The normative reference for this requirement is TS 25.133 [2] clauses 5.5.2.1.1 and A.5.5.1.

8.3.5.1.3 Test purpose

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL_FACH state in the single carrier case

8.3.5.1.4 Method of test

8.3.5.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.5.1.1 to 8.3.5.1.5. The UE is requested to monitor neighbouring cells on 1 carrier. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms.

Table 8.3.5.1.1: General test parameters for Cell Re-selection in CELL_FACH, one freq. in neighbour list

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
Access Service Class (ASC#0) ñ Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
T_{SI}		ms	1280	See Annex I for the SIB repetition period of system information blocks.
T1		s	15	
T2		s	15	

The transport and physical parameters of the S-CCPCH carrying the FACH are defined in table 8.3.5.1.2 and table 8.3.5.1.3.

Table 8.3.5.1.2: Physical channel parameters for S-CCPCH, one freq. in neighbour list

Parameter	Unit	Level
Channel bit rate	kbps	60
Channel symbol rate	ksps	30
Slot Format #I	-	4
TFCI	-	OFF
Power offsets of TFCI and Pilot fields relative to data field	dB	0

Table 8.3.5.1.3: Transport channel parameters for S-CCPCH, one freq. in neighbour list

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	Ω
Rate Matching attribute	256
Size of CRC	16
Position of TrCH in radio frame	Fixed

Table 8.3.5.1.4: Cell specific conditions for Cell Re-selection in CELL_FACH, one freq. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
S-CCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
OCNS_Ec/Ior	dB	-1.295		-1.295		-1.295		-1.295		-1.295		-1.295	
$\hat{I}_{or}/I_{oc}$	dB	7.3	10.27	10.27	7.3	0.27		0.27		0.27		0.27	
$\hat{I}_{or}$ (Note 1)	dBm	-62.73	-59.73	-59.73	-62.73	-69.73		-69.73		-69.73		-69.73	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-23		-23		-23		-23	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dBm	21		21		21		21		21		21	
Qoffset $2_{s,n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
IE "FACH Measurement occasion info"		not sent		not sent		not sent		not sent		not sent		not sent	

Note 1 The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.5.1.4.2 Procedure

1) The SS activates cell 1-6 with RF parameters set up according to T1 in table 8.3.5.1.5.

2) The UE is switched on.

3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.5 to place the UE in the CELL_FACH state on Cell 2 and the SS waits for this process to complete.

4) After 15 seconds from completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.1.5.

5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.1.5.

8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved .

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore the cell re-selection delay shall be less than 1.7 s.(Minimum requirement + 100ms). Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Contents of CELL UPDATE CONFIRM message for CELL_FACH

Information Element	Value/remark
RRC transaction identifier Activation time New C-RNTI	0 Not Present 010101010101010 B
RRC State indicator	CELL_FACH

8.3.5.1.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.5.1.5: Cell specific test requirements for Cell Re-selection in CELL_FACH, one freq. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.5		-10.5		-10.5		-10.5	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.5		-15.5		-15.5		-15.5	
S-CCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
OCNS_Ec/Ior	dB	-1.52		-1.52		-1.13		-1.13		-1.13		-1.13	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	7.0	10.4	10.4	7.0	0.3		0.3		0.3		0.3	
$\hat{I}_{or}$	dBm	-63.0	-59.6	-59.6	-63.0	-69.7		-69.7		-69.7		-69.7	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io *Note 1*	dB	-15.7	-12.3	-12.3	-15.7	-23.5		-23.5		-23.5		-23.5	

All other parameters and conditions specified in table 8.3.5.1.4 are unchanged.

Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

Note 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.5.2 Two frequencies present in the neighbour list

8.3.5.2.1 Definition and applicability

The cell re-selection delay is defined as the time between the occurrence of an event which will trigger Cell Reselection process and the moment in time when the UE starts sending the the preambles on the PRACH for sending RRC CELL UPDATE message to the UTRAN.

The requirements and this test apply to the FDD UE.

8.3.5.2.2 Minimum requirements

The cell re-selection delay shall be less than 1.9 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

If a cell has been detectable at least $T_{identify,inter}$, the cell reselection delay in CELL_FACH state to a FDD cell on a different frequency shall be less than

$$T_{reselection,\, inter} = T_{Measurement\ inter} + T_{IU} + 20 + T_{SI} + T_{RA} \text{ ms}$$

where

$T_{Measurement\_inter}$ is 480 ms in this case

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. 1280 ms is assumed in this test case.

T_{RA} = The additional delay caused by the random access procedure. T_{RA} is a delay is caused by the physical random access procedure described in TS 25.214 clause 6.1. A persistence value is assumed to be 1 in this test case and therefore T_{RA} in this test case is 40 ms.

These requirements assume radio conditions to be sufficient, so that reading of system information can be done without errors.

The normative reference for this requirement is TS 25.133 [2] clauses 5.5.2.1.2 and A.5.5.2.

8.3.5.2.3 Test purpose

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL_FACH state in the single carrier case

8.3.5.2.4 Method of test

8.3.5.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.5.2.1 to 8.3.5.2.5. The UE is requested to monitor neighbouring cells on 2 carriers. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms

Table 8.3.5.2.1: General test parameters for Cell Re-selection in CELL_FACH, two freqs. in neighbour list

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
Access Service Class (ASC#0) ñ Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
T_{SI}		ms	1280	See Annex I for the SIB repetition period of system information blocks.
T1		s	15	
T2		s	15	

The transport and physical parameters of the S-CCPCH carrying the FACH are defined in table 8.3.5.2.2 and table 8.3.5.2.3.

Table 8.3.5.2.2: Physical channel parameters for S-CCPCH, two freqs. in neighbour list

Parameter	Unit	Level
Channel bit rate	kbps	60
Channel symbol rate	ksps	30
Slot Format #I	-	4
TFCI	-	OFF
Power offsets of TFCI and Pilot fields relative to data field	dB	0

Table 8.3.5.2.3: Transport channel parameters for S-CCPCH, two freqs. in neighbour list

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	Ω
Rate Matching attribute	256
Size of CRC	16
Position of TrCH in radio frame	Fixed

Table 8.3.5.2.4: Cell specific conditions for Cell re-selection in CELL_FACH state, two freqs. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
S-CCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
OCNS_Ec/Ior	dB	-1.295		-1.295		-1.295		-1.295		-1.295		-1.295	
$\hat{I}_{or}/I_{oc}$	dB	-1.8	2.2	2.2	-1.8	-6.8	-4.8	-6.8	-4.8	-4.8	-6.8	-4.8	-6.8
$\hat{I}_{or}$ (Note 1)	dBm	-71.85	-67.75	-67.75	-71.85	-76.85	-74.75	-76.85	-74.75	-74.75	-76.85	-74.75	-76.85
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-15	-13	-13	-15	-20		-20		-20		-20	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dBm	21		21		21		21		21		21	
$Qoffset2_{s,n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
Sintersearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
IE "FACH Measurement occasion info"		sent		sent		sent		sent		Sent		sent	
FACH Measurement occasion cycle length coefficient		3		3		3		3		3		3	
Inter-frequency FDD measurement indicator		TRUE		TRUE		TRUE		TRUE		TRUE		TRUE	
Inter-frequency TDD measurement indicator		FALSE		FALSE		FALSE		FALSE		FALSE		FALSE	

Note 1 The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.5.2.4.2 Procedure

1) The RF parameters for cell 1 are set up according to T1 in table 8.3.5.2.5.

2) The UE is switched on.

3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.5 to place the UE in the CELL_FACH state on Cell 2 and the SS waits for this process to complete.

4) After 15 seconds from completion of step3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.2.5.

5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 2.0 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.2.5.

8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 2.0 s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore the cell re-selection delay shall be less than 2.0 s.(Minimum requirement + 100ms).

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Contents of CELL UPDATE CONFIRM message for CELL_FACH

Information Element	Value/remark
RRC transaction identifier Activation time New C-RNTI	0 Not Present 010101010101010 B
RRC State indicator	CELL_FACH

8.3.5.2.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.5.2.5: Cell specific test requirements for Cell re-selection in CELL_FACH state, two freqs. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2

UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.7		-10.7		-10.7		-10.7	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.7		-15.7		-15.7		-15.7	
S-CCPCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
OCNS_Ec/Ior	dB	-1.52		-1.52		-1.08		-1.08		-1.08		-1.08	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	-1.80	+4.64	+4.64	-1.80	-6.80	-3.16	-6.80	-3.16	-3.16	-6.80	-3.16	-6.80
$\hat{I}_{or}$	dBm	-71.8	-67.0	-67.0	-71.8	-76.8	-74.8	-76.8	-74.8	-74.8	-76.8	-74.8	-76.8
I_{oc}	dBm/3.84 MHz	-70.0	-71.6	-71.6	-70.0	-70.0	-71.6	-70.0	-71.6	-71.6	-70.0	-71.6	-70.0
CPICH_Ec/Io *Note 1*	dB	-14.4	-11.6	-11.6	-14.4	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7

All other parameters and conditions specified in table 8.3.5.2.4 are unchanged.

Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

Note 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.5.3 Cell Reselection to GSM

8.3.5.3.1 Definition and applicability

The cell re-reselection delay is defined as the time from the beginning of time period T2, to the moment when the UE starts to transmit the random access in Cell 2 (the GSM cell).

This requirements and this test apply to UE supporting FDD PS and GSM GPRS.

8.3.5.3.2 Minimum requirements

The cell re-selection delay shall be less than 5.5 + $\mathbf{T_{RA}}$ s.

The rate of correct reselections observed during repeated tests shall be at least 90%.

NOTE: The cell re-selection delay can be expressed

$$T_{reselection,GSM} = T_{identify,GSM} + T_{measurement,GSM} + 40 + T_{BCCH} + T_{RA} \text{ ms}$$

where:

$T_{identify,GSM}$ Specified in TS 25.133 [2] clause 8.4.2.5.2.1, here it is 2880 ms

$T_{measurement,GSM}$ Specified in TS 25.133 [2] clause 5.5.2.1.4, here it is 640 ms

T_{BCCH} According to TS 05.08 [20], the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.

T_{RA} The additional delay caused by the random access procedure in the GSM cell, is 10 ms (2 GSM radio frames).

These requirements assume radio conditions to be sufficient, so reading of system information can be done without errors.

The normative reference for this requirement is TS 25.133 [2] clauses 5.5.2.1.4 and A.5.5.3.

8.3.5.3.3 Test purpose

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL_FACH state.

8.3.5.3.4 Method of test

8.3.5.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.5.3.1 to 8.3.5.3.5. This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected. The UTRAN cell and the GSM cell are set to belong to different location areas. The GSM cell shall be set up to allow UE to transmit radio access burst in every GSM radio frame. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 6 GSM cells.

Table 8.3.5.3.1: General test parameters for UTRAN to GSM Cell Re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cell		Cell2	
Final condition	Active cell		Cell2	
HCS				Not used
Neighbour cell list size			24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	
T1		s	5	
T2		s	10	

The transport and physical parameters of the S-CCPCH carrying the FACH are defined in Table 8.3.5.3.2 and Table Table 8.3.5.3.3.

Table 8.3.5.3.2: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	kbps	60
Channel symbol rate	ksps	30
Slot Format #I	-	4
TFCI	-	OFF
Power offsets of TFCI and Pilot fields relative to data field	dB	0

Table 8.3.5.3.3: Transport channel parameters for S-CCPCH

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	Ω
Rate Matching attribute	256
Size of CRC	16
Position of TrCH in radio frame	Fixed

Table 8.3.5.3.4: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
PCCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
S-CCPCH_Ec/Ior	dB	-12	
OCNS_Ec/Ior	dB	-1.295	
$\hat{I}_{or}/I_{oc}$	dB	0	-5
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io	dB	-13	-16.2
CPICH_RSCP	dBm	-80	-85
Propagation Condition		AWGN	
Cell_selection_and_ reselection_quality_mea sure		CPICH Ec/Io	
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_ RACH	dBm	21	
Qoffset1$_{s, n}$	dB	C1, C2: 0	
Qhyst1	dB	0	
Treselection	s	0	
Ssearch$_{RAT}$	dB	Not sent	
IE ìFACH Measurement occasion infoî		Sent	
FACH Measurement occasion cycle length coefficient		3	
Inter-frequency FDD measurement indicator		FALSE	
Inter-frequency TDD measurement indicator		FALSE	
Inter-RAT measurement indicators		Included	
>RAT type		GSM	

Table 8.3.5.3.5: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-90	-75
RXLEV_ACCESS_ MIN	dBm	-104	
MS_TXPWR_MAX_ CCH	dBm	33	

8.3.5.3.4.2 Procedure

1) The SS activates cell 1-2 with RF parameters set up according to T1 in tables 8.3.5.3.6 and 8.3.5.3.7.

2) The UE is switched on.

3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.5 to place the UE in CELL_FACH and the SS waits for this process to complete.

4) After 5 seconds from completion of step3 or the beginning of T1, the parameters are changed to those defined for T2 in tables 8.3.5.3.6 and 8.3.5.3.7.

5) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 5.51 s (=5.5 s + T_{RA}s) from the beginning of time period T2 then a success is recorded and the SS completes the location update procedure in GSM and the procedure continues with step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 10s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS completes the location update procedure in GSM and the procedure continues with step 7.

7) After 10 s from the beginning of time period T2, the parameters are changed to those defined for T1 in tables 8.3.5.3.6 and 8.3.5.3.6.

8) The SS waits for random access requests from the UE on cell 1. The SS completes the location update procedure in UTRA

9) Repeat step 3) to 8) until the confidence level according to annex F.6.2 is achieved.

8.3.5.3.5 Test requirements

Table 8.3.5.3.6: Cell re-selection UTRAN to GSM cell case (cell 1) Test Requirements

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-9.9	-10.1
PCCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
S-CCPCH_Ec/Ior	dB	-12	
OCNS_Ec/Ior	dB	-1.309	-1.282
$\hat{I}_{or}/I_{oc}$	dB	0.3	-5.3
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io	dB	-12.8	-16.5
CPICH_RSCP	dBm	-79.6	-85.4
Propagation Condition		AWGN	
Cell_selection_and_reselection_quality_measure		CPICH Ec/Io	
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
$Qoffset1_{s,n}$	dB	C1, C2: 0	
Qhyst1	dB	0	
Treselection	s	0	
$Ssearch_{RAT}$	dB	Not sent	
IE ìFACH Measurement occasion infoî		Sent	
FACH Measurement occasion cycle length coefficient		3	
Inter-frequency FDD measurement indicator		FALSE	
Inter-frequency TDD measurement indicator		FALSE	
Inter-RAT measurement indicators		Included	
>RAT type		GSM	

Table 8.3.5.3.7: Cell re-selection UTRAN to GSM cell case (cell 2) Test Requirements

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-90.3	-74.7
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

NOTE 1: CPICH_Ec/Io and CPICH_RSCP levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95 %.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.6 Cell Re-selection in CELL_PCH

8.3.6.1 One frequency present in the neighbour list

8.3.6.1.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the FDD UE.

8.3.6.1.2 Minimum requirements

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

$T_{evaluateFDD}$ See table 4.1 in TS 25.133 [2] clause 4.2.2.
T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 5.6.2 and A.5.6.1.

8.3.6.1.3 Test purpose

To verify that the UE meets the minimum requirements and is capable of camping on to a new cell, within the required time, when the preferred cell conditions change.

8.3.6.1.4 Method of test

8.3.6.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 1 carrier and 6 cells as given in tables 8.3.6.1.1 to 8.3.6.1.3. The UE is requested to monitor neighbouring cells on 1 carrier. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms.

Table 8.3.6.1.1: General test parameters for Cell Re-selection in CELL_PCH, one freq. in neighbour list

Parameter		Unit	Value	Comment
initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
final condition	Active cell		Cell1	
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
T_{SI}		ms	1280	See Annex I for the SIB repetition period of system information blocks.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	T1 need to be defined so that cell re-selection reaction time is taken into account.
T2		s	15	T2 need to be defined so that cell re-selection reaction time is taken into account.

Table 8.3.6.1.2: Cell specific test parameters for Cell re-selection in CELL_PCH state, one freq. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
OCNS_Ec/Ior	dB	-0.941		-0.941		-0.941		-0.941		-0.941		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	7.3	10.27	10.27	7.3	0.27		0.27		0.27		0.27	
$\hat{E}_{or}$ (Note 1)	dBm	-62.73	-59.73	-59.73	-62.73	-69.73		-69.73		-69.73		-69.73	
I_{oc}	dBm/ 3.84MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-23		-23		-23		-23	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dBm	21		21		21		21		21		21	
$Qoffset2_{s,\ n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	

Note 1 The nominal $\hat{E}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.6.1.4.2 Procedure

1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.6.1.3 and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

3) An RRC connection is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the CELL_PCH state on Cell 2 and then the SS waits for this process to complete.

4) After 15 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.6.1.3.

5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

7) After a total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.6.1.3.

8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s (Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION (Step 3)

Information Element	Value/remark
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	7
Downlink information for each radio link - Primary CPICH info - Primary scrambling code	 Reference to TS 34.108 clause 6.1 ìDefault settings (FDD)î

Contents of CELL UPDATE CONFIRM message for CELL_PCH

Information Element	Value/remark
RRC transaction identifier Activation time RRC State indicator UTRAN DRX cycle length coefficient	0 Not Present CELL_PCH 7

8.3.6.1.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.6.1.3: Cell specific test requirements for Cell re-selection in CELL_PCH state, one freq. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.5		-10.5		-10.5		-10.5	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.5		-15.5		-15.5		-15.5	
OCNS_Ec/Ior	dB	-1.10		-1.10		-0.83		-0.83		-0.83		-0.83	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	7.00	10.40	10.40	7.00	0.30		0.30		0.30		0.30	
$\hat{I}_{or}$	dBm	-63.0	-59.6	-59.6	-63.0	-69.7		-69.7		-69.7		-69.7	
I_{oc}	dBm / 3,84 MHz	-70											
CPICH_Ec/Io *Note 1*	dB	-15.7	-12.3	-12.3	-15.7	-23.5		-23.5		-23.5		-23.5	

All other parameters and conditions specified in table 8.3.6.1.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.6.2 Two frequencies present in the neighbour list

8.3.6.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the FDD UE.

8.3.6.2.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

$T_{evaluateFDD}$ See table 4.1 in TS 25.133 [2] clause 4.2.2.
T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 5.6.2 and A.5.6.2.

8.3.6.2.3 Test purpose

To verify that the UE meets the minimum requirement and is capable of camping on to a new cell, within the required time, when the preferred cell conditions change.

8.3.6.2.4 Method of test

8.3.6.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 2 carriers and 6 cells as given in tables 8.3.6.2.1 to 8.3.6.2.3. The UE is requested to monitor neighbouring cells on 2 carriers. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms.

Table 8.3.6.2.1: General test parameters for Cell Re-selection in CELL_PCH, two freqs. in neighbour list

Parameter		Unit	Value	Comment
initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
final condition	Active cell		Cell1	
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
T_{SI}		ms	1280	See Annex I for the SIB repetition period of system information blocks.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	30	T1 need to be defined so that cell re-selection reaction time is taken into account.
T2		s	15	T2 need to be defined so that cell re-selection reaction time is taken into account.

Table 8.3.6.2.2: Cell specific test parameters for Cell re-selection in CELL_PCH state, two freqs. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
OCNS_Ec/Ior	dB	-0.941		-0.941		-0.941		-0.941		-0.941		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	-3.4	2.2	2.2	-3.4	-7.4	-4.8	-7.4	-4.8	-4.8	-7.4	-4.8	-7.4
$\hat{I}_{or}$ *(Note 1)*	dBm	-73.39	-67.75	-67.75	-73.39	-77.39	-74.75	-77.39	-74.75	-74.75	-77.39	-74.75	-77.39
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-20		-20		-20		-20	
Propagation Condition		AWGN											
Cell_selection_ and_reselection_ quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_ MAX_RACH	dBm	21		21		21		21		21		21	
Qoffset2$_{s, n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
Sintersearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	

Note 1 The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.6.2.4.2 Procedure

1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.6.2.3 and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

3) A RRC connection is set up according the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in CELL_PCH state on cell 2. The SS waits for this process to complete.

4) After 30 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.6.2.3.

5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

7) After a total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.6.2.3.

8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) After a total of 15 s from the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.6.2.3.

11) Steps 5 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE 1: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

NOTE 2: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION (Step 3)

Information Element	Value/remark
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	7
Downlink information for each radio link - Primary CPICH info - Primary scrambling code	Reference to TS 34.108 clause 6.1 ìDefault settings (FDD)î

Contents of CELL UPDATE CONFIRM message for CELL_PCH

Information Element	Value/remark
RRC transaction identifier Activation time RRC State indicator UTRAN DRX cycle length coefficient	0 Not Present CELL_PCH 7

8.3.6.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.6.2.3: Cell specific test requirements for Cell re-selection in CELL_PCH state, two freqs. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2

UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-9.3		-9.3		-10.8		-10.8		-10.8		-10.8	
PCCPCH_Ec/Ior	dB	-11.3		-11.3		-12.8		-12.8		-12.8		-12.8	
SCH_Ec/Ior	dB	-11.3		-11.3		-12.8		-12.8		-12.8		-12.8	
PICH_Ec/Ior	dB	-14.3		-14.3		-15.8		-15.8		-15.8		-15.8	
OCNS_Ec/Ior	dB	-1.13		-1.13		-0.77		-0.77		-0.77		-0.77	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	-3.40	+4.80	+4.80	-3.40	-7.40	-3.00	-7.40	-3.00	-3.00	-7.40	-3.00	-7.40
$\hat{I}_{or}$	dBm	-73.4	-67.0	-67.0	-73.4	-77.4	-74.8	-77.4	-74.8	-74.8	-77.4	-74.8	-77.4
I_{oc}	dBm/3.84 MHz	-70.0	-71.8	-71.8	-70.0	-70.0	-71.8	-70.0	-71.8	-71.8	-70.0	-71.8	-70.0
CPICH_Ec/Io *Note 1*	dB	-15.3	-11.5	-11.5	-15.3	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8

All other parameters and conditions specified in table 8.3.6.2.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.7 Cell Re-selection in URA_PCH

8.3.7.1 One frequency present in the neighbour list

8.3.7.1.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the URA UPDATE message with cause value "URA reselection" in the new cell.

The requirements and this test apply to the FDD UE.

8.3.7.1.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

$T_{evaluateFDD}$	See table 4.1 in TS 25.133 [2] clause 4.2.2.
T_{SI}	Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 5.7.2 and A.5.7.1.

8.3.7.1.3 Test purpose

To verify that the UE meets the minimum requirement and is capable of camping on to a new cell, within the required time, when the preferred cell conditions change.

8.3.7.1.4 Method of test

8.3.7.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 1 carrier and 6 cells as given in tables 8.3.7.1.1 to 8.3.7.1.3. The UE is requested to monitor neighbouring cells on 1 carrier. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms. In System Information Block Type 2 cell1 and cell 2 URA identity is set to a different value.

Table 8.3.7.1.1: General test parameters for Cell Re-selection in URA_PCH, one freq. in neighbour list

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
SYSTEM INFORMATION BLOCK TYPE 2 - URA identity list - URA identity		-	0000 0000 0000 0001(B) (Cell 1) 0000 0000 0000 0010(B) (Cell 2)	
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
T_{SI}		ms	1280	See Annex I for the SIB repetition period of system information blocks.
DRX cycle length		s	1,28	The value shall be used for all cells in the test.
T1		s	15	T1 need to be defined so that cell re-selection reaction time is taken into account.
T2		s	15	T2 need to be defined so that cell re-selection reaction time is taken into account.

Table 8.3.7.1.2: Cell specific test parameters for Cell re-selection in URA_PCH state, one freq. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
OCNS_Ec/Ior	dB	-0,941		-0,941		-0,941		-0,941		-0,941		-0,941	
$\hat{I}_{or}/I_{oc}$	dB	7,3	10,27	10,27	7,3	0,27		0,27		0,27		0,27	
$\hat{I}_{or}$ (Note 1)	dBm	-62.73	-59.73	-59.73	-62.73	-69.73		-69.73		-69.73		-69.73	
I_{oc}	dBm / 3,84 MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-23		-23		-23		-23	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dB	21		21		21		21		21		21	
Qoffset2$_{s, n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	S	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	

Note 1 The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.7.1.4.2 Procedure

1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.7.1.3 and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

3) An RRC connection is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the URA_PCH state on Cell 2 and then the SS waits for this process to complete.

4) After 15 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.7.1.3.

5) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 7.

7) After a total of another 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.7.1.3.

8) If the UE responds on Cell 2 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION (Step 3)

Information Element	Value/remark
RRC State Indicator	URA PCH
UTRAN DRX cycle length coefficient	7

Contents of URA UPDATE CONFIRM message for URA_PCH

Information Element	Value/remark
RRC transaction identifier RRC state indicator UTRAN DRX cycle length coefficient URA identity	0 URA_PCH 7 0000000000000010 B

8.3.7.1.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of 95 % of the cases.

Table 8.3.7.1.3: Cell specific test requirements for Cell re-selection in URA_PCH state, one freq. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.5		-10.5		-10.5		-10.5	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.5		-15.5		-15.5		-15.5	
OCNS_Ec/Ior	dB	-1.10		-1.10		-0.83		-0.83		-0.83		-0.83	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	7.00	10.40	10.40	7.00	0.30		0.30		0.30		0.30	
$\hat{I}_{or}$	dBm	-63.0	-59.6	-59.6	-63.0	-69.7		-69.7		-69.7		-69.7	
I_{oc}	dBm / 3,84 MHz	-70											
CPICH_Ec/Io *Note 1*	dB	-15.7	-12.3	-12.3	-15.7	-23.5		-23.5		-23.5		-23.5	

All other parameters and conditions specified in table 8.3.7.1.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.7.2 Two frequencies present in the neighbour list

8.3.7.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the URA UPDATE message with cause value "URA reselection" in the new cell.

The requirements and this test apply to the FDD UE.

8.3.7.2.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

$T_{evaluateFDD}$ See table 4.1 in TS 25.133 [2] clause 4.2.2.
T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 5.7.2 and A.5.7.2.

8.3.7.2.3 Test purpose

To verify that the UE meets the minimum requirement and is capable of camping on to a new cell, within the required time, when the preferred cell conditions change.

8.3.7.2.4 Method of test

8.3.7.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 2 carriers and 6 cells as given in tables 8.3.7.2.1 to 8.3.7.2.3. The UE is requested to monitor neighbouring cells on 2 carriers. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms. In System Information Block Type 2 in cell 1 and cell 2 URA identity is set to different value.

Table 8.3.7.2.1: General test parameters for Cell Re-selection in URA_PCH, two freqs. in neighbour list

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Initial condition	Active cell Cell2		Cell1	
SYSTEM INFORMATION BLOCK TYPE 2 - URA identity list - URA identity		-	0000 0000 0000 0001(B) (Cell 1) 0000 0000 0000 0010(B) (Cell 2)	
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
T_{SI}		ms	1280	See Annex I for the SIB repetition period of system information blocks.
DRX cycle length		s	1,28	The value shall be used for all cells in the test.
T1		s	30	T1 need to be defined so that cell re-selection reaction time is taken into account.
T2		s	15	T2 need to be defined so that cell re-selection reaction time is taken into account.

Table 8.3.7.2.2: Cell specific test parameters for Cell Re-selection in URA_PCH state, two freqs. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
OCNS_Ec/Ior	dB	-0.941		-0.941		-0.941		-0.941		-0.941		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	-3.4	2.2	2.2	-3.4	-7.4	-4.8	-7.4	-4.8	-4.8	-7.4	-4.8	-7.4
$\hat{I}_{or}$ (Note 1)	dBm	-73.39	-67.75	-67.75	-73.39	-77.39	-74.75	-77.39	-74.75	-74.75	-77.39	-74.75	-77.39
I_{oc}	dBm / 3.84 MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-20		-20		-20		-20	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dB	21		21		21		21		21		21	
$Qoffset2_{s,n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
Sintersearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	

Note 1 The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.7.2.4.2 Procedures

1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.7.2.3 and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

3) An RRC connection is set up according the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in URA_PCH state on cell 2. The SS waits for this process to complete.

4) After 30 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.7.2.3.

5) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 7.

7) After a total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.7.2.3.

8) If the UE responds on Cell 2 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 10.

10) After a total of 15 s from the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.7.2.3.

11) Steps 5 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE 1: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

NOTE 2: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION (Step 3)

Information Element	Value/remark
RRC State Indicator	URA PCH
UTRAN DRX cycle length coefficient	7

Contents of URA UPDATE CONFIRM message for URA_PCH

Information Element	Value/remark
RRC transaction identifier RRC state indicator UTRAN DRX cycle length coefficient URA identity	0 URA_PCH 7 0000000000000010 B

8.3.7.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Table 8.3.7.2.3: Cell specific test requirements for Cell re-selection in URA_PCH state, two freqs. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-9.3		-9.3		-10.8		-10.8		-10.8		-10.8	
PCCPCH_Ec/Ior	dB	-11.3		-11.3		-12.8		-12.8		-12.8		-12.8	
SCH_Ec/Ior	dB	-11.3		-11.3		-12.8		-12.8		-12.8		-12.8	
PICH_Ec/Ior	dB	-14.3		-14.3		-15.8		-15.8		-15.8		-15.8	
OCNS_Ec/Ior	dB	-1.13		-1.13		-0.77		-0.77		-0.77		-0.77	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	-3.40	+4.80	+4.80	-3.40	-7.40	-3.00	-7.40	-3.00	-3.00	-7.40	-3.00	-7.40
$\hat{I}_{or}$	dBm	-73.4	-67.0	-67.0	-73.4	-77.4	-74.8	-77.4	-74.8	-74.8	-77.4	-74.8	-77.4
I_{oc}	dBm/3.84 MHz	-70.0	-71.8	-71.8	-70.0	-70.0	-71.8	-70.0	-71.8	-71.8	-70.0	-71.8	-70.0
CPICH_Ec/Io *Note 1*	dB	-15.3	-11.5	-11.5	-15.3	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8

All other parameters and conditions specified in table 8.3.7.2.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

{Unchanged Sections are clipped here}

Annex I (normative): Default Message Contents

This Annex contains the default values of common messages, other than those described in TS 34.108. The messages are primarily concerning the RRM test cases in clause 8 and unless indicated otherwise in specific test cases, shall be transmitted and checked by the system simulator. The necessary messages are listed in alphabetical order.

In this Annex, decimal values are normally used. However, sometimes, a hexadecimal value, indicated by an "H", or a binary value, indicated by a "B" is used.

Contents of MEASUREMENT REPORT message for Intra frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Not present
- Cell synchronisation information	
- Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
- CPICH Ec/N0	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
- CPICH RSCP	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
- Pathloss	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

Contents of MEASUREMENT REPORT message for Inter frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Inter-frequency measured results list	
- UTRA Carrier RSSI	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Not present
- Cell synchronisation information	
-Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
- CPICH Ec/N0	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
- CPICH RSCP	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
- Pathloss	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

Contents of MEASUREMENT REPORT message for inter ñ RAT test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Inter-RAT measured results list	
- CHOICE system	GSM
- GSM	
- Measured GSM cells	Checked that this IE is present
- GSM carrier RSSI	If reporting of ìGSM carrier RSSIì measurement is configured then checkChecked that this IE is present
- CHOICE *BSIC*	Non verified BSIC
- Non verified BSIC	
- BCCH ARFCN	Checked that this IE is present
- Observed time difference to GSM cell	If reporting of ìObserved time difference to GSM cellì measurement configured then checkChecked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

Contents of Master Information Block PLMN type is the case of GSM-MAP

The following information element is exception of TS34.108 based on 8.2.2, 8.3.5, 8.4.1,8.3.6, 8.3.7 test cases.

Information Element	**Value/Remark**
- SIB_REP	128
- SIB_POS	44
- SIB and SB type	System Information Type 1
- SIB_REP	128
- SIB_POS	44
- SIB and SB type	System Information Type 2
- SIB_REP	128
- SIB_POS	40
- SIB and SB type	System Information Type 3
- SIB_REP	128
- SIB_POS	104
- SIB and SB type	System Information Type 4
- SIB_REP	128
- SIB_POS	76
- SIB and SB type	System Information Type 5

Contents of Scheduling Block 1 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.2.2, 8.3.5, 8.4.1, 8.3.6, 8.3.7 test cases.

Information Element	**Value/Remark**
- SIB_REP	128
- SIB_POS	12
- SIB type SIBs only	System Information Type 6
- SIB_REP	128
- SIB_POS	116
- SIB type SIBs only	System Information Type 11

- SIB_REP - SIB_POS - SIB type SIBs only - SIB_REP - SIB_POS - SIB type SIBs only	128 52 System Information Type 12 128 72 System Information Type 18

Contents of Master Information Block PLMN type is the case of GSM-MAP

The following information element is exception of TS34.108 based on monitorlist size for 8.3.4, 8.4.1.1, 8.4.1.2, 8.6.1.1, 8.6.1.2, 8.6.1.3, 8.6.1.4, 8.6.2.1 test cases.

Information Element	Value/Remark
- SIB_POS	1
- SIB_POS offset info	Not Present
- SIB and SB type	Scheduling Block 1
- SIB_REP	128
- SIB_POS	11
- SIB_POS offset info	Not Presen
- SIB and SB type	System Information Type 1
- SIB_REP	128
- SIB_POS	11
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 2
- SIB_REP	128
- SIB_POS	10
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 3
- SIB_REP	128
- SIB_POS	26
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 4
- SIB_REP	128
- SIB_POS	19
- SIB_POS offset info	3
- SIB and SB type	System Information Type 5

Contents of Scheduling Block 1 (FDD) ~~size~~

The following information element is exception of TS34.108 based on monitorlist size for 8.4.1.1,8.4.1.2,8.6.1.1,8.6.1.4 test cases.

Information Element	Value/Remark
- References to other system information blocks	
- SIB_REP	128
- SIB_POS	3
- SIB_POS offset info	3
- SIB type SIBs only	System Information Type 6
- SIB_POS	2
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	4
- SIB_REP	128
- SIB_POS	27
- SIB_POS offset info	3
- SIB_OFF	4
- SIB type SIBs only	System Information Type 11
- SIB_REP	128
- SIB_POS	13
- SIB_POS offset info	2
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SIB_REP	128
- SIB_POS	18
- SIB type SIBs only	System Information Type 18

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.4.1.1,8.4.1.2,8.6.1.1,8.6.1.4

Information Element	Value/Remark
- Intra-frequency measurement system information	
- New intra-frequency cells	24
- Intra-frequency cell id	9+n (n=0 to 18)
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlaped values.
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present

CR-Form-v7

CHANGE REQUEST

⌘ **34.121**	**CR** 458	⌘**rev**	**-** ⌘	Current version:	**5.5.0**	⌘

For ***HELP*** *on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘ Correction to 8.3.1 UE FDD/FDD Soft Handover
Source:	⌘ Anritsu
Work item code:	⌘
Date:	⌘ 3/11/2004
Category:	⌘ **F** *Use one of the following categories:* ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.
Release:	⌘ Rel-5 *Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘ 1) According to TS25.331: 8.6.7.9, if îReporting cell is statusî is ìNot Presentì in Measurement Control Message, Measurement Report Message will be sent with no "Measured Results". 2) T5 value is not aligned with TS25.133.
Summary of change:	⌘ 1)"Reporting cell status" is configured in Measurement Control Message. 2)T5 value is corrected to 10 ms in Table 8.3.1.1.1
Consequences if not approved:	⌘ UE will not be tested properly.

Clauses affected:	⌘ 8.3.1			
		Y	**N**	
Other specs affected:	⌘		X	Other core specifications ⌘
			X	Test specifications
			X	O&M Specifications
Other comments:	⌘ This CR applies for Rel-99 and later releases.			

How to create CRs using this form:
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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3 UTRAN Connected Mode Mobility

8.3.1 FDD/FDD Soft Handover

8.3.1.1 Definition and applicability

The active set update delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying soft handover to the switch off of the old downlink DPCH.

The requirements and this test apply to the FDD UE.

8.3.1.2 Minimum requirement

The active set update delay is defined as the time from when the UE has received the ACTIVE SET UPDATE message from UTRAN, or at the time stated through the activation time when to perform the active set update, to the time when the UE successfully uses the set of radio links stated in that message for power control.

The active set update delay is depending on the number of known cells referred to in the ACTIVE SET UPDATE message. A cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set.
- the cell has been measured by the UE during the last 5 seconds and the SFN of the cell has been decoded by the UE.

And the phase reference is the primary CPICH.

The active set update delay shall be less than 50+10*KC+100*OC ms, where

KC is the number of known cells in the active set update message.

OC is the number of cells that are not known in the active set update message.

If the UE have radio links in the active set that it can not use for data detection (due to low signal level), the UE shall at least every 150 ms search for the radio link.

The normative reference for this requirement is TS 25.133 [2] clauses 5.1.2 and A.5.1.1. The active set update delay shall be less than 60 ms in CELL_DCH state when using test parameters as given in table 8.3.1.1.1.

8.3.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.1.4 Method of test

8.3.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1.1.1 and 8.3.1.1.2 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A shall be used, and that CPICH Ec/Io and SFN-CFN observed time difference shall be reported together with Event 1A. The test consists of six successive time periods, with a time duration of T1, T2, T3, T4, T5 and T6 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

Table 8.3.1.1.1: General test parameters for Soft handover

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in clause C.3.1 and C.2.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range		dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting deactivation threshold			0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	5	
T2		s	3	
T3		s	0.5	
T4		ms	60	This is the requirement on active set update delay, see clause 8.3.1.2, where KC=1 and OC=0.
T5		ms	10	
T6		s	2	

Table 8.3.1.1.2: Cell specific test parameters for Soft handover

Parameter	Unit	Cell 1						Cell 2					
		T1	T2	T3	T4	T5	T6	T1	T2	T3	T4	T5	T6
CPICH_Ec/Ior	dB	-10						-10					
PCCPCH_Ec/Ior	dB	-12						-12					
SCH_Ec/Ior	dB	-12						-12					
PICH_Ec/Ior	dB	-15						-15					
DPCH_Ec/Ior	dB	Note1	Note1	Note1		N/A	N/A	N/A	N/A	Note3	Note1	Note1	
OCNS_Ec/Ior	dB	Note2	Note2	Note2		-0.94	-0.94	-0.94	-0.94	Note2	Note2	Note2	
$\hat{I}_{or}/I_{oc}$	dB	0	2.91	2.91		2.91	2.91	-Inf	2.91	2.91	2.91	2.91	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-13	-14	-14		-14	-14	-Inf	-14	-14	-14	-14	
Propagation Condition		AWGN											
Relative delay of paths received from cell 2 with respect to cell 1	chips	{-148 Ô 148} Note 4											

Note 1: The DPCH level is controlled by the power control loop
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}
Note 3: The DPCH level is controlled by the power control loop. The initial power shall be set equal to the DPCH_Ec/Ior of Cell 1 at the end of T2.
Note 4: The relative delay of the path from cell 2 with respect to cell 1 shall always be within ±148 chip.

8.3.1.4.2 Procedure

1) The RF parameters are set up according to T1 in table 8.3.1.1.3 .

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 without Compressed mode parameters.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) 5 seconds after step4 has completed, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1A containing the CFN-SFN observed time difference between cell 1 and cell 2.

7) At the beginning of T3 the downlink DPCH of cell 2 shall be activated.

8) SS shall send an ACTIVE SET UPDATE message with activation time "now ", adding cell 2 to the active set. The ACTIVE SET UPDATE message shall be sent to the UE so that the whole message is available at the UE at the beginning of T4.

9) At the beginning of T5 the DPCH from cell 1 shall be switched off.

10) The UE downlink BLER shall be measured during time period T6.

11) 5 seconds after step10 has completed, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

12) BLER is measured during concatenated time periods T6.Repeat step 1-11 until the confidence level for BLER is achieved. This is defined in annex F.6.1.10

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity (10.3.7.41)	Intra-frequency measurement Not Present 0 FDD CPICH_Ec/N0
-Reporting quantities for active set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE report criteria -Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event	Not Present Not Present Intra-frequency measurement reporting criteria 2
-Intra-frequency event identity -Triggering condition 2 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status - CHOICE reported cell - Maximum number of reported cells	Event 1A Active set cells and monitored set cells 3 dB Not Present 1.0 0 dB Not Present 0 Not Present 0 ms Infinity 0 ms (Note 2) ~~Not Present~~ Report cell within active set and/or monitored set cells on used frequency 3
-Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant	Event 1B Active set cells and monitored set cells 3 dB

Information Element/Group name	Value/Remark
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	Not Present
-Reporting cell status	~~Not Present~~
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL. Note 2: Reporting interval = 0 ms means no periodical reporting	

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	"now"
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE mode	FDD
-UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 2
-UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE *channel requirement*	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE mode	FDD
-DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
-CHOICE mode	FDD
-Scrambling code type	Long
-Scrambling code number	0 (0 to 16777215)
-Number of DPDCH	Not Present(1)
-Spreading factor	64
-TFCI existence	TRUE
-Number of FBI bit	Not Present(0)
-Puncturing Limit	1
Downlink radio resources	
-CHOICE *mode*	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-DPC mode	0 (single)
-CHOICE mode	FDD
-Power offset $P_{Pilot\text{-}DPDCH}$	0
-DL rate matching restriction information	Not Present
-Spreading factor	128
-Fixed or Flexible Position	Fixed
-TFCI existence	TRUE
-CHOICE SF	128
-Number of bits for Pilot bits(SF=128,256)	8
-CHOICE mode	FDD

Information Element	Value/Remark
-DPCH compressed mode info (10.3.6.33)	Not Present
-TX Diversity mode (10.3.6.86)	None
-SSDT information (10.3.6.77)	Not Present
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
-Primary scrambling code	350
-PDSCH with SHO DCH info (10.3.6.47)	Not Present
-PDSCH code mapping (10.3.6.43)	Not Present
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	0 chips
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No change
-TPC combination index	0
- SSDT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH (10.3.6.70)	Not Present

3GPP TSG-T1 Meeting #25 **Tdoc ⌘T1-041845**
Malta, 1st November ñ 5th November

CR-Form-v7

CHANGE REQUEST

⌘ 34.121	CR 459	⌘ rev - ⌘	Current version: 5.5.0 ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘ Correction to 8.7.1.1 CPICH RSCP Intra frequency measurements accuracy
Source:	⌘ Anritsu
Work item code:	⌘ ***Date:*** ⌘ 3/11/2004
Category:	⌘ **F** ***Release:*** ⌘ Rel-5

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(addition of feature),*
- ***C*** *(functional modification of feature)*
- ***D*** *(editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
- *2 (GSM Phase 2)*
- *R96 (Release 1996)*
- *R97 (Release 1997)*
- *R98 (Release 1998)*
- *R99 (Release 1999)*
- *Rel-4 (Release 4)*
- *Rel-5 (Release 5)*
- *Rel-6 (Release 6)*

Reason for change:	⌘ ìMeasurement Commandî is not already configured in System information for this test case. In addition, at T1#22, T1-040292 was incorrectly reflected to Measurement Control Message in 8.7.1.
Summary of change:	⌘ Measurement Command is changed to Modify, and also the Measurement Identity is changed to 1.
Consequences if not approved:	⌘ UE will not be tested properly.

Clauses affected:	⌘ 8.7.1				
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘ This CR applies for Rel-99 and later releases.				

How to create CRs using this form:
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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.7.1 CPICH RSCP

8.7.1.1 Intra frequency measurements accuracy

8.7.1.1.1 Absolute accuracy requirement

8.7.1.1.1.1 Definition and applicability

The absolute accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the actual CPICH RSCP power from same cell.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.1.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

- $CPICH\_RSCP1|_{dBm} \geq -114$ dBm for Band I.
- $CPICH\_RSCP1|_{dBm} \geq -112$ dBm for Band II,
- $CPICH_RSCP1|_{dBm} \geq -111$dBm for Band III.
- $\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$

Table 8.7.1.1.1.1: CPICH_RSCP Intra frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_RSCP	dBm	±6	±9	-94...-70	-92...-70	-91...-70
	dBm	±8	±11	-70...-50	-70...-50	-70...-50

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.1 and A.9.1.1.2.

8.7.1.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP absolute measurement accuracy is within the specified limits in clause 8.7.1.1.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.1.1.4 Method of test

8.7.1.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. CPICH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Table 8.7.1.1.1.2: CPICH RSCP Intra frequency parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-75.54		-59.98		-97.47	
	Band II						-95.47	
	Band III						-94.47	
Îor/Ioc		dB	4	0	9	0	0	-6.53
CPICH RSCP, Note 1	Band I	dBm	-81.5	-85.5	-60.98	-69.88	-107.47	-114.0
	Band II						-105.47	-112.0
	Band III						-104.47	-111.0
Io, Note 1	Band I	dBm/3.84 MHz	-69		-50		-94	
	Band II						-92	
	Band III						-91	
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

8.7.1.1.1.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.4.

2) SS shall transmit MEASUREMENT CONTROL message.

3) UE shall transmit periodically MEASUREMENT REPORT messages.

4) SS shall check CPICH_RSCP value in MEASUREMENT REPORT messages. CPICH RSCP power of Cell 1 ~~r~~ and Cell 2 reported by UE is compared to actual CPICH RSCP power for each MEASUREMENT REPORT message.

5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated.

6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement (Step ~~1~~2):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	~~5~~1
-Measurement Command	~~SETUP~~Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells	
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells	Not Present
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-CHOICE *report criteria*	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.1.1.5 Test requirements

Table 8.7.1.1.1.3: CPICH_RSCP Intra frequency absolute accuracy, test requirement

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_RSCP	dBm	±7.4	±10.4	-94...-70	-92...-70	-91...-70
	dBm	±9.4	±12.4	-70...-50	-70...-50	-70...-50

Table 8.7.1.1.1.4: CPICH RSCP Intra frequency test parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-74.54		-61,6		-96.47	
	Band II						-94.47	
	Band III						-93.47	
Îor/Ioc		dB	4.3	0.3	9.3	0.3	0.3	-6.23
CPICH RSCP, Note 1	Band I	dBm	-80.2	-84.2	-62.3	-71.3	-106.17	-112.7
	Band II						-104.17	-110.7
	Band III						-103.17	-109.7
Io, Note 1	Band I	dBm / 3.84 MHz	-67.8		-51,4		-92,8	
	Band II						-90.8	
	Band III						-89.8	
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

The reported values for the absolut intra frequency CPICH RSCP measurement shall meet the requirements in table 8.7.1.1.1.5.

Table 8.7.1.1.1.5: CPICH_RSCP Intra frequency absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3 (Band I)	Test 3 (Band II)	Test 3 (Band III)
Normal Conditions					
Lowest reported value (Cell 1)	CPICH_RSCP_26	CPICH_RSCP_44	CPICH_RSCP_2	CPICH_RSCP_4	CPICH_RSCP_5
Highest reported value (Cell 1)	CPICH_RSCP_45	CPICH_RSCP_63	CPICH_RSCP_17	CPICH_RSCP_19	CPICH_RSCP_20
Lowest reported value (Cell 2)	CPICH_RSCP_22	CPICH_RSCP_35	CPICH_RSCP_0	CPICH_RSCP_0	CPICH_RSCP_0
Highest reported value (Cell 2)	CPICH_RSCP_41	CPICH_RSCP_54	CPICH_RSCP_10	CPICH_RSCP_12	CPICH_RSCP_13
Extreme Conditions					
Lowest reported value (Cell 1)	CPICH_RSCP_23	CPICH_RSCP_41	CPICH_RSCP_0	CPICH_RSCP_1	CPICH_RSCP_2
Highest reported value (Cell 1)	CPICH_RSCP_48	CPICH_RSCP_66	CPICH_RSCP_20	CPICH_RSCP_22	CPICH_RSCP_23
Lowest reported value (Cell 2)	CPICH_RSCP_19	CPICH_RSCP_32	CPICH_RSCP_0	CPICH_RSCP_0	CPICH_RSCP_0
Highest reported value (Cell 2)	CPICH_RSCP_44	CPICH_RSCP_57	CPICH_RSCP_13	CPICH_RSCP_15	CPICH_RSCP_16

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T WG1 Meeting #25 **Tdoc ⌘T1-041858**
St Paulís Bay, Malta, November 1st - 5th, 2004

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CHANGE REQUEST

⌘	**34.121**	**CR**	461	⌘ **rev**	**-**	⌘	Current version:	**5.5.0** ⌘

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Proposed change affects:	UICC apps⌘	[ ]	ME	[X]	Radio Access Network	[ ]	Core Network	[ ]

Title:	⌘	Correction to measurement configurations in section 7		
Source:	⌘	Nokia		
Work item code:	⌘	TEI	***Date:*** ⌘	2004-11-04
Category:	⌘	**F**	***Release:*** ⌘	REL-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change: ⌘ The current requirement of performing the section 7 test cases with UE maximum output power has caused problems for a good UE to pass section 7 test cases. When UE is operating with maximum output power it can send only TFCs that belong to minimum set of TFCs that are given in Annex C of TS 34.121. This has caused problems at least in following test cases

- TC 7.10 Blind transport format detection: UE fails the TC since it is not able to send the required TFCs in uplink
- TC 7.7.1 In a generic call set procedure UE is configured to send measurement reports to SS. When operating at the maximum power TFC selection rules are such that UE sends DCCH but not DTCH since DCCH may have the higher priority than DTCH. This has caused test failures when UE has sent requested reports to SS since the BLER calculation has stopped due to missing DTCH in uplink.

In order to allow a good UE to pass these test cases it is proposed that current requirement of perfoming the section 7 test cases with maximum UE output power is removed. This requirement did not come from core specification TS 25.101 but it was specified by T1 in order to allow error free uplink. It is now expected that error free uplink is true even UE is not at maximum output power.

In order to give guidance to SS vendors, it is proposed that a new note is being added indicating problems with test cases in section 7.7 and 7.10 when UE is operating at maximum UE output power. This note can be used to resolve the possible conflicts with SS and UE vendors.

Also in TC 7.6.3 (SSDT) there are two cells for which UE is configured to do measurements in a generic call set up. It is expected that similar problems may occur in this test case as in section 7.7 test cases when performing the test case

		at maximum UE output power.
Summary of change:	⌘	Requirement of performing the Section 7 test cases with maximum UE output power is deleted from section 7.1.1. A following note has been added into section 7.1.1: ìIf tests are performed with maximum UE output power it is known that this may cause a good UE to fail at least for tests in sections 7.7 and 7.10.î A new note has been added saying that ìthe UE output power needs to be high enough so that uplink transmission can be received error free in the SS.î Chip rate 3.84 MHz was removed from section 7.1.1 as there is no need to mention it this section. The side condition releted to maximum output power was deleted from Section C.6.2. Forward channels was replaces with downlink channels
Consequences if not approved:	⌘	A good UE may not pass the tests in section 7.7 and it will not pass the test in section 7.10.

Clauses affected:	⌘	7.1.1, Annex C.6.2				
		Y	**N**			
Other specs Affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR is applicable for UEís supporting Rel-99 or later.				

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7 Performance requirements

7.1 General

The performance requirements for the UE in this clause are specified for the measurement channels specified in annex C and table 7.1.1, the propagation conditions specified in clause 7.1.2 and the Down link Physical channels specified in annex D. Unless stated otherwise, DL power control is OFF.

For loopback tests, DCCH Data shall be continuously transmitted on downlink DCH during the measurement period.

The method for Block Error Ratio (BLER) measurement is specified in 3GPP TS 34.109 [4].

Table 7.1.1: Bit / Symbol rate for Test Channel

Type of User Information	User bit rate	DL DPCH symbol rate	DL DPCH bit rate	TTI (ms)
12,2 kbps reference measurement channel	12,2 kbps	30 ksps	60 kbps	20
64/144/384 kbps reference measurement channel	64 kbps	120 ksps	240 kbps	20
144kbps reference measurement channel	144 kbps	240 ksps	480 kbps	20
384 kbps reference measurement channel	384 kbps	480 ksps	960 kbps	10

The common RF test conditions of Performance requirement are defined in clause E.3.3, and each test conditions in this clause (clause 7) should refer clause E.3.3. Individual test conditions are defined in the paragraph of each test.

All Block Error ratio (BLER) measurements in clause 7 shall be performed according to the general rules for statistical testing in Annex F.6

7.1.1 Measurement Configurations

~~In all measurements UE should transmit with maximum power while receiving signals from Node B. This is guaranteed by the measurement configurations defined in Annex C (i.e. if the DTCH-DCH TFS consists of a single transport format, it is not blocked by the UE as stated in 3GPP TS 25.331). Chip Rate is specified to be 3,84 MHz.~~

It as assumed that fields inside DPCH have the same energy per PN chip. Also, if the power of S-CCPCH is not specified in the test parameter table, it should be set to zero. The power of OCNS should be adjusted that the power ratios (E_c/I_{or}) of all specified downlink~~forward~~ channels add up to one.

Measurement configurations for different scenarios are shown in figure A.9, figure A.10 and figure A.11.

Note 1: If tests are performed with maximum UE output power it is known that this may cause a good UE to fail at least for tests in sections 7.7 and 7.10.

Note 2: The UE output power needs to be high enough so that uplink transmission can be received error free in the SS.

C.6.2 Channel combinations for BLER measurements

Table C.6.2 Measurement channels for BLER tests for UL DL data rate combinations

UL: DL:	RMC 12.2kbit/s	RMC 64kbit/s	RMC 144kbit/s	RMC 384kbit/s
RMC 12.2kbit/s 1)	RLC TM, TL2, (UL CRC off, see C.6.3)	RLC TM, TL2	RLC TM, TL2	RLC TM, TL2
RMC 64kbit/s	RLC AM using AUXMC, See C.6.7 (ACK/NACK count)	RLC TM, TL2, (UL CRC off, see C.6.4)	RLC TM, TL2	RLC TM, TL2
RMC 144kbit/s	RLC AM using AUXMC, See C.6.7 (ACK/NACK count)	RLC AM (ACK/NACK count)	RLC TM, TL2, (UL CRC off, see C.6.5)	RLC TM, TL2
RMC 384kbit/s	RLC AM using AUXMC, See C.6.7 (ACK/NACK count)	RLC AM (ACK/NACK count)	RLC AM (ACK/NACK count)	RLC TM, TL2, (UL CRC off, see C.6.6)

Note : In the red and blue area BLER is tested by ACK/NACK counting.

~~The side condition in all Performance Tests, maximum uplink power, can be fulfilled by closing TL1~~.

In the grey and green area BLER is tested by observing the looped back data field containing the DL Data and DL CRC closing TL2.

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Malta 1st - 5th November, 2004

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CHANGE REQUEST

⌘	**34.121**	**CR**	**462**	⌘ **rev**	**-**	⌘	Current version:	**5.5.0** ⌘

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Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Change of notes position in TS34.121 Annex E.3	
Source:	⌘	Intel	
Work item code:	⌘	TEI	***Date:*** ⌘ 2/11/2004
Category:	⌘	**F**	***Release:*** ⌘ R99
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Notes in Annex E.3 are hidden and not appear in the printed version
Summary of change:	⌘	copy the hidden notes to the associated table in the section
Consequences if not approved:	⌘	Notes in Annex E.3 can be disregard

Clauses affected:	⌘	Annex E.3.3, E.3.4 & E.3.5			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This CR applies to release 99 and later releases			

E.3 During connection

The following clauses describe the downlink Physical Channels that are transmitted during a connection i.e., when measurements are done. For these measurements the offset between DPCH and SCH shall be zero chips at base station meaning that SCH is overlapping with the first symbols in DPCH in the beginning of DPCH slot structure.

E.3.1 Measurement of Tx Characteristics

Table E.3.1 is applicable for measurements on the Transmitter Characteristics (clause 5) with the exception of clauses 5.3, 5.4.1, 5.4.4 and 5.5.2.

NOTE: Applicability to clause 5.7 (Power setting in uplink compressed mode) is FFS.

Table E.3.1: Downlink Physical Channels transmitted during a connection

Physical Channel	Power
Îor	ñ93 dBm / 3,84MHz
CPICH	CPICH_Ec / DPCH_Ec = 7 dB
P-CCPCH	P-CCPCH_Ec / DPCH_Ec = 5 dB
SCH	SCH_Ec / DPCH_Ec = 5 dB
PICH	PICH_Ec / DPCH_Ec = 2 dB
DPCH	ñ103,3 dBm / 3,84MHz

E.3.2 Measurement of Rx Characteristics

Table E.3.2.1 is applicable for measurements on the Receiver Characteristics (clause 6) with the exception of clauses 6.3 and 6.8.

Table E.3.2.1: Downlink Physical Channels transmitted during a connection

Physical Channel	Power
CPICH	CPICH_Ec / DPCH_Ec = 7 dB
P-CCPCH	P-CCPCH_Ec/ DPCH_Ec = 5 dB
SCH	SCH_Ec / DPCH_Ec = 5 dB
PICH	PICH_Ec / DPCH_Ec = 2 dB
DPCH	Test dependent power

Table E.3.2.2 describes the downlink Physical Channels that are required for the test of Spurious Emissions (clause 6.8). The UE is in the CELL_FACH state during the measurement.

Table E.3.2.2: Downlink Physical Channels transmitted during the Rx Spurious Emissions test

Physical Channel	Power
CPICH	ñ86dBm / 3,84MHz
P-CCPCH	P-CCPCH_Ec/ CPICH_Ec = -2 dB
SCH	SCH_Ec / CPICH_Ec = -2 dB
PICH	PICH_Ec / CPICH_Ec = -5 dB
S-CCPCH	S-CCPCH_Ec / CPICH_Ec = -2 dB

E.3.3 Measurement of Performance requirements

Table E.3.3 is applicable for measurements on the Performance requirements (clause 7), including clauses 6.3 and 5.4.4, excluding clauses 7.6.1 and 7.6.2.

Table E.3.3: Downlink Physical Channels transmitted during a connection[1]

Physical Channel	Power	Note
P-CPICH	P-CPICH_Ec/Ior = –10 dB	Use of P-CPICH or S-CPICH as phase reference is specified for each requirement and is also set by higher layer signalling.
S-CPICH	S-CPICH_Ec/Ior = –10 dB	When S-CPICH is the phase reference in a test condition, the phase of S-CPICH shall be 180 degrees offset from the phase of P-CPICH. When S-CPICH is not the phase reference, it is not transmitted.
P-CCPCH	P-CCPCH_Ec/Ior = –12 dB	
SCH	SCH_Ec/Ior = –12 dB	This power shall be divided equally between Primary and Secondary Synchronous channels
PICH	PICH_Ec/Ior = –15 dB	
DPCH	Test dependent power	When S-CPICH is the phase reference in a test condition, the phase of DPCH shall be 180 degrees offset from the phase of P-CPICH.
OCNS	Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	OCNS interference consists of 16 dedicated data channels as specified in table E.3.6.
NOTE 1: For dynamic power correction required to compensate for the presence of transient channels, e.g. control channels, a subset of the DPCH channels may be used. NOTE 2: Power levels are based on the assumption that multipath propagation conditions and noise source representing interference from other cells Ioc are turned on after the call-set-up phase.		

[1] Power levels are based on the assumption that multipath propagation conditions and noise source representing interference from other cells Ioc are turned on after the call set-up phase.

E.3.4 Connection with open-loop transmit diversity mode

Table E.3.4 is applicable for measurements for clause 7.6.1.

Table E.3.4: Downlink Physical Channels transmitted during a connection[2]

Physical Channel	Power	Note
P-CPICH (antenna 1)	P-CPICH_E_{c1}/I_{or} = –13 dB	1. Total P-CPICH_E_c/I_{or} = –10 dB
P-CPICH (antenna 2)	P-CPICH_E_{c2}/I_{or} = –13 dB	
P-CPICH (antenna 1)	P-CPICH_E_{c1}/I_{or} = –13 dB	1. Total P-CPICH_E_c/I_{or} = –10 dB
P-CPICH (antenna 2)	P-CPICH_E_{c2}/I_{or} = –13 dB	
P-CCPCH (antenna 1)	P-CCPCH_Ec_1/I_{or} = –15 dB	1. STTD applied 2. Total P-CCPCH_Ec/I_{or} = –12 dB
P-CCPCH (antenna 2)	P-CCPCH_Ec_2/I_{or} = –15 dB	
SCH (antenna 1 / 2)	SCH_E_c/I_{or} = –12 dB	1. TSTD applied. 2. This power shall be divided equally between Primary and Secondary Synchronous channels
PICH (antenna 1)	PICH_E_{c1}/I_{or} = –18 dB	1. STTD applied 2. Total PICH_E_c/I_{or} = –15 dB
PICH (antenna 2)	PICH_E_{c2}/I_{or} = –18 dB	
DPCH	Test dependent power	1. STTD applied 2. Total power from both antennas
OCNS	Necessary power so that total transmit power spectral density of Node B (I_{or}) adds to one	1. This power shall be divided equally between antennas 2. OCNS interference consists of 16 dedicated data channels as specified in Table E.3.6.
NOTE 1: For dynamic power correction required to compensate for the presence of transient channels, e.g. control channels, a subset of the DPCH channels may be used. NOTE 2: Power levels are based on the assumption that multipath propagation conditions and noise source representing interference from other cells Ioc are turned on after the call-set-up phase.		

[2] Power levels are based on the assumption that multipath propagation conditions and noise source representing interference from other cells Ioc are turned on after the call set-up phase.

E.3.5 Connection with closed loop transmit diversity mode

table E.3.5 is applicable for measurements for clause 7.6.2.

Table E.3.5: Downlink Physical Channels transmitted during a connection[3]

Physical Channel	Power	Note
P-CPICH (antenna 1)	P-CPICH_Ec1/Ior = –13 dB	1. Total P-CPICH_Ec/Ior = –10 dB
P-CPICH (antenna 2)	P-CPICH_Ec2/Ior = –13 dB	
P-CCPCH (antenna 1)	P-CCPCH_Ec1/Ior = –15 dB	1. STTD applied
P-CCPCH (antenna 2)	P-CCPCH_Ec2/Ior = –15 dB	1. STTD applied, total P-CCPCH_Ec/Ior = –12 dB
SCH (antenna 1 / 2)	SCH_Ec/Ior = –12 dB	1. TSTD applied
PICH (antenna 1)	PICH_Ec1/Ior = –18 dB	1. STTD applied 2. STTD applied, total PICH_Ec/Ior = –15 dB
PICH (antenna 2)	PICH_Ec2/Ior = –18 dB	
DPCH	Test dependent power	1. Total power from both antennas
OCNS	Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	1. This power shall be divided equally between antennas 2. OCNS interference consists of 16 dedicated data channels as specified in Table E.3.6.
NOTE 1: For dynamic power correction required to compensate for the presence of transient channels, e.g. control channels, a subset of the DPCH channels may be used. NOTE 2: Power levels are based on the assumption that multipath propagation conditions and noise source representing interference from other cells Ioc are turned on after the call-set-up phase.		

Table E.3.6: DPCH Channelization Code and relative level settings for OCNS signal.

Channelization Code at SF=128[1]	Relative Level setting (dB)[1,2]	DPCH Data
2	-1	The DPCH data for each channelization code shall be uncorrelated with each other and with any wanted signal over the period of any measurement.
11	-3	
17	-3	
23	-5	
31	-2	
38	-4	
47	-8	
55	-7	
62	-4	
69	-6	
78	-5	
85	-9	
94	-10	
125	-8	
113	-6	
119	0	

NOTE 1: The DPCH Channelization Codes and relative level settings are chosen to simulate a signal with realistic Peak to Average Ratio.

NOTE 2: The relative level setting specified in dB refers only to the relationship between the OCNS channels. The level of the OCNS channels relative to the Ior of the complete signal is a function of the power of the other channels in the signal with the intention that the power of the group of OCNS channels is used to make the total signal add up to 1.

---

[3] Power levels are based on the assumption that multipath propagation conditions and noise source representing interference from other cells Ioc are turned on after the call set-up phase.

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⌘	34.121	CR	463	⌘rev	-	⌘	Current version:	5.5.0	⌘

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Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘ BLER testing for UEs with asymmetrical UL/DL data rates		
Source:	⌘ Nokia		
Work item code:	⌘ TEI	***Date:***	⌘ 2004-11-04
Category:	⌘ **F** *Use one of the following categories:* ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	***Release:***	⌘ REL-5 *Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change: ⌘ It has been unclear whether Section 7 test cases can be validated in GCF using asymmetrical data rates (UL data rate < DL data rate). The currect TS 34.121 has following points:

- Section 7.2.1.4.1 the method of test specifies that ìEnter the UE into loopback test mode and start the loopback testî
- Annex C.6.2. says ìNote: In the red and blue area BLER is tested by ACK/NACK counting.î

So the method of test does not say anything about ACK/NACK method and neither the note in Annex C.6.2 say that ACK/NACK method can be used while being in loopback mode. This has caused uncertainty whether high DL data rates can be validated using smaller uplink data rates in GCF where the current status is that DL 144 kbps and 384 kbps have been not been validated possibly due to reason that no UE support symmetrical data rates up to 144 kbps or 384 kbps.

There exists many WCDMA terminals in markets that support 384 kbps in DL but not in UL. Also in future there will be WCDMA terminals that support higher data rates in DL than in UL due to complexity and cost reasons.

It is important that receiver performance of these kind of terminals can be tested using GCF validated test cases. Therefore TS 34.121 has to be clear enough that BLER ACK/NACK testing can be used also in TC validation.

Summary of change: ⌘ The note in Annex C.6.2 has been modified to allow ACK/NACK method while being in loopback

Consequences if not approved: ⌘ It is unclear whether receiver performance of UEs supporting asymmetrical data rates can be validated in GCF.

Clauses affected:	⌘	Annex C.6.2		
		Y	**N**	
Other specs Affected:	⌘		**X**	Other core specifications ⌘
			X	Test specifications
			X	O&M Specifications
Other comments:	⌘	This CR is applicable for UEís supporting Rel-99 or later.		

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

C.6 Auxiliary measurement channels (informative)

C.6.1 Introduction

BLER tests with (UL data rate ≤ DL data rate) need special attention. This annex defines a choice of measurement channels for all UL-DL ñdata-rate combinations.

C.6.2 Channel combinations for BLER measurements

Table C.6.2 Measurement channels for BLER tests for UL DL data rate combinations

UL: / DL:	RMC 12.2kbit/s	RMC 64kbit/s	RMC 144kbit/s	RMC 384kbit/s
RMC 12.2kbit/s 1)	RLC TM, TL2, (UL CRC off, see C.6.3)	RLC TM, TL2	RLC TM, TL2	RLC TM, TL2
RMC 64kbit/s	RLC AM using AUXMC, See C.6.7 (ACK/NACK count)	RLC TM, TL2, (UL CRC off, see C.6.4)	RLC TM, TL2	RLC TM, TL2
RMC 144kbit/s	RLC AM using AUXMC, See C.6.7 (ACK/NACK count)	RLC AM (ACK/NACK count)	RLC TM, TL2, (UL CRC off, see C.6.5)	RLC TM, TL2
RMC 384kbit/s	RLC AM using AUXMC, See C.6.7 (ACK/NACK count)	RLC AM (ACK/NACK count)	RLC AM (ACK/NACK count)	RLC TM, TL2, (UL CRC off, see C.6.6)

Note : In the red and blue area BLER is tested by ACK/NACK counting. This method can be used while being in loopback mode.

The side condition in all Performance Tests, maximum uplink power, can be fulfilled by closing TL1.

In the grey and green area BLER is tested by observing the looped back data field containing the DL Data and DL CRC closing TL2.

3GPP TSG-T1 Meeting #25
St Paulís Bay, Malta, 1st ñ 5th November 2004

Tdoc ⌘T1-041861

CR-Form-v7.1

CHANGE REQUEST

⌘ **34.121**	**CR** 464	⌘ **rev**	**-** ⌘	Current version:	**5.5.0** ⌘

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Proposed change affects:	UICC apps⌘		ME	X	Radio Access Network		Core Network	

Title:	⌘	Invalid MAC header for downlink dummy DCCH		
Source:	⌘	NEC		
Work item code:	⌘	TEI	***Date:*** ⌘	04/11/2004
Category:	⌘	F	***Release:*** ⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *Ph2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)* *Rel-7 (Release 7)*

Reason for change:	⌘	Recently downlink dummy DCCH has been defined for the BTFD test case. The RAN4 LS R4-040567 indicates that downlink dummy DCCH is also required for other test cases and that the use of an invalid MAC header is the preferred method.
Summary of change:	⌘	The continous DCCH data transmission on downlink DCH is clarified for clauses 5.1, 6.1 and 7.1. The continous DCCH data transmission on downlink DCH is added for clauses 8.1 and 9.1. Annex C.9 is extended to apply an invalid MAC header as dummy DCCH for all test cases.
Consequences if not approved:	⌘	Good UEs might fail.

Clauses affected:	⌘	5.1, 6.1, 7.1, 8.1, 9.1, C.9			
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Appliable for terminals supporting R99 and later.			

How to create CRs using this form:

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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5 Transmitter Characteristics

5.1 General

Transmitting performance test of the UE is implemented during communicating with the SS via air interface. The procedure is using normal call protocol until the UE is communicating on traffic channel basically. On the traffic channel, the UE provides special function for testing that is called Logical Test Interface and the UE is tested using this function. (Refer to TS 34.109 [4]).

Transmitting or receiving bit/symbol rate for test channel is shown in table 5.1.

Table 5.1: Bit / Symbol rate for Test Channel

Type of User Information	User bit rate	DL DPCH symbol rate	UL DPCH bit rate	Remarks
12,2 kbps reference measurement channel	12,2 kbps	30 ksps	60 kbps	Standard Test

Unless detailed the transmitter characteristic are specified at the antenna connector of the UE. For UE with integral antenna only, a reference antenna with a gain of 0 dBi is assumed. Transmitter characteristics for UE(s) with multiple antennas/antenna connectors are FFS.

The UE antenna performance has a significant impact on system performance, and minimum requirements on the antenna efficiency are therefore intended to be included in future versions of the present document. It is recognised that different requirements and test methods are likely to be required for the different types of UE.

All the parameters in clause 5 are defined using the UL reference measurement channel (12,2 kbps) specified in clause C.2.1 and unless stated otherwise, with the UL power control ON.

The common RF test conditions of Tx Characteristics are defined in clause E.3.1, and each test conditions in this clause (clause 5) should refer clause E.3.1. Individual test conditions are defined in the paragraph of each test.

When DCCH has been configured on downlink DCH then~~For loopback tests,~~ DCCH Data shall be continuously transmitted on downlink DCH during the measurement period. When there is no signalling to transmit on downlink DCCH then dummy DCCH transmission as described in Annex C.9 shall be used.

6 Receiver Characteristics

6.1 General

Receiving performance test of the UE is implemented during communicating with the SS via air interface. The procedure is using normal call protocol until the UE is communicating on traffic channel basically. On the traffic channel, the UE provides special function for testing that is called Logical Test Interface and the UE is tested using this function (Refer to TS 34.109 [4])

Transmitting or receiving bit/symbol rate for test channel is shown in table 6.1.

Table 6.1: Bit / Symbol rate for Test Channel

Type of User Information	User bit rate	DL DPCH symbol rate	UL DPCH bit rate	Remarks
12,2 kbps reference measurement channel	12,2 kbps	30 ksps	60 kbps	Standard Test

Unless otherwise stated the receiver characteristics are specified at the antenna connector of the UE. For UE(s) with an integral antenna only, a reference antenna with a gain of 0 dBi is assumed. UE with an integral antenna may be taken into account by converting these power levels into field strength requirements, assuming a 0 dBi gain antenna. Receiver characteristics for UE(s) with multiple antennas/antenna connectors are FFS.

The UE antenna performance has a significant impact on system performance, and minimum requirements on the antenna efficiency are therefore intended to be included in future versions of the present document. It is recognised that different requirements and test methods are likely to be required for the different types of UE.

With the exception of clause 6.8, all the parameters in clause 6 are defined using the DL reference measurement channel (12,2 kbps) specified in clause C.3.1 and unless stated otherwise, with DL power control OFF.

The common RF test conditions of Rx Characteristics are defined in clause E.3.2, and each test conditions in this clause (clause 6) should refer clause E.3.2. Individual test conditions are defined in the paragraph of each test.

When DCCH has been configured on downlink DCH then ~~For loopback tests,~~ DCCH Data shall be continuously transmitted on downlink DCH during the measurement period. When there is no signalling to transmit on downlink DCCH then dummy DCCH transmission as described in Annex C.9 shall be used.

All Bit Error ratio (BER) measurements in clause 6 shall be performed according to the general rules for statistical testing in Annex F.6

7 Performance requirements

7.1 General

The performance requirements for the UE in this clause are specified for the measurement channels specified in annex C and table 7.1.1, the propagation conditions specified in clause 7.1.2 and the Down link Physical channels specified in annex D. Unless stated otherwise, DL power control is OFF.

When DCCH has been configured on downlink DCH then~~For loopback tests,~~ DCCH Data shall be continuously transmitted on downlink DCH during the measurement period. When there is no signalling to transmit on downlink DCCH then dummy DCCH transmission as described in Annex C.9 shall be used.

The method for Block Error Ratio (BLER) measurement is specified in 3GPP TS 34.109 [4].

Table 7.1.1: Bit / Symbol rate for Test Channel

Type of User Information	User bit rate	DL DPCH symbol rate	DL DPCH bit rate	TTI (ms)
12,2 kbps reference measurement channel	12,2 kbps	30 ksps	60 kbps	20
64/144/384 kbps reference measurement channel	64 kbps	120 ksps	240 kbps	20
144kbps reference measurement channel	144 kbps	240 ksps	480 kbps	20
384 kbps reference measurement channel	384 kbps	480 ksps	960 kbps	10

The common RF test conditions of Performance requirement are defined in clause E.3.3, and each test conditions in this clause (clause 7) should refer clause E.3.3. Individual test conditions are defined in the paragraph of each test.

All Block Error ratio (BLER) measurements in clause 7 shall be performed according to the general rules for statistical testing in Annex F.6

8 Requirements for support of RRM

8.1 General

The cell configuration mapping between cells as defined in TS 34.121 and cells as defined in TS 34.108 section 6.1.4 is described in Annex K.

When DCCH has been configured on downlink DCH then DCCH Data shall be continuously transmitted on downlink DCH. When there is no signalling to transmit on downlink DCCH then dummy DCCH transmission as described in Annex C.9 shall be used.

The downlink dummy DCCH is optional in this version of the specification. It will become mandatory in T1#26.

9 Performance requirements for HSDPA

9.1 General

The performance requirements for the UE in this clause are specified for the measurement channels specified in Annex C, the propagation conditions specified in Annex D and the Down link Physical channels specified in Annex E.

When DCCH has been configured on downlink DCH then DCCH Data shall be continuously transmitted on downlink DCH during the measurement period. When there is no signalling to transmit on downlink DCCH then dummy DCCH transmission as described in Annex C.9 shall be used.

C.9 Downlink reference channel dummy DCCH transmission on DCH

~~Several~~ Many test cases have been designed to have continuous downlink DCCH transmission on DCH. The DCCH is carrying SRBs. When there are no signalling messages to be transmitted on downlink DCCH then dummy DCCH messages shall be transmitted on the downlink.

For all test cases ~~using Blind Transport Format Detection~~with continuous downlink DCCH transmission on DCH the format of the dummy DCCH message is using an invalid MAC header with the value ì1111î for the C/T field. The UE shall discard PDUís with this invalid MAC header according to TS 25.321. This applies for cases where a MAC header is used to distinguish between several logical channels. In the case of the reference measurement channels the SRBs on DCH use a 4 bit MAC header.

~~For other test cases the format of the dummy DCCH is TBD.~~

For all test cases except Blind Transport Format Detection (section 7.10) using an invalid MAC header with the value ì1111î for the C/T field for downlink dummy DCCH is optional in this version of the specification. It will become mandatory in T1#26. For Blind Transport Format Detection using an invalid MAC header with the value ì1111î for the C/T field for downlink dummy DCCH is mandatory in this version of the specification.

Tdoc ⌘T1-041869

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR** 469	⌘ **rev**	**-**	⌘ Current version:	**5.5.0** ⌘

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Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Corrections to TC 8.2.3.1 and 8.2.3.2		
Source:	⌘	Nokia		
Work item code:	⌘	TEI	***Date:*** ⌘	2004-11-04
Category:	⌘	**F**	***Release:*** ⌘	REL-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	The purpose of TC 8.2.3.1 and 8.2.3.2 is to verify that UE fulfils the UTRAN-GSM cell re-selection delay requirements that have been specified in idle mode. However, in current tests UE gets stuck into CELL_FACH state since SS does not response to UE random access burst that are needed for a location registration procedure. Therefore UE keeps sending random access burst during T1 and it is not in idle mode when T2 starts. Due to this UE is not able to make a cell re-selection to GSM cell during T2 and it fails the test. The same errors were also in FDD/FDD cell re-selection tests (TC 8.2.1 and TC 8.2.2) but these errors were corrected already with a CR in T1-020460 of T1#16 meeting, August 2002. Now it is the time to do the same for UTRAN-GSM cell re-selection test cases. Similarly during T2 SS and UE shall complete a location update in GSM mode to avoid problems due to UE not being in idle mode before T2 ends. The timing is unclear in test procedures
Summary of change:	⌘	Step 3 and step 7 in test procedures in sections 8.2.3.1.4.2 and 8.2.3.2.4.2 have been modified so that SS and UE shall finalise the location registration procedure on cell 1. Step 5 has been revised so that SS shall wait for a location registration on cell 2. Other steps in test procedure have been clarified in order to know the exact time when to change test parameters from T1 to T2 and vice versa. Note that in a first test run T1 starts after location registration procedure. This is due to unknown time for UE to be up and running after power has been switched ON and due to unknown and unspecified time to make a cell selection to UTRAN cell. The time period T2 and also T1 and T2 for following test runs include the time needed for

		UE and SS to complete a location registration procedure that happens when UE makes cell re-selections.
Consequences if not approved:	⌘	UE gets stucked in CELL_FACH state and it will not be able to make a cell re-selection to GSM cell thus it will not pass the test case. Unclear timing in test procedure may result in different implementation among SS vendors.

Clauses affected:	⌘	Section 8.2.3.1.4.2 and 8.2.3.2.4.2				
		Y	**N**			
Other specs Affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR is applicable for UEís supporting Rel-99 or later.				

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8.2.3 UTRAN to GSM Cell Re-Selection

8.2.3.1 Scenario 1: Both UTRA and GSM level changed

8.2.3.1.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell and starts to send the RR Channel Request message for location update to the new cell.

The requirements and this test apply to the combined FDD and GSM UE.

8.2.3.1.2 Minimum requirement

The cell re-selection delay shall be less than 26 s + T_{BCCH}, where TBCCH is the maximum time allowed to read BCCH data from GSM cell TS 05.08 [20].

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: 4* $T_{measureGSM}$ + T_{BCCH}, where:

$T_{measureGSM}$ See table 4.1 in TS 25.133 [2] clause 4.2.2.

T_{BCCH} Maximum time allowed to read BCCH data from GSM cell TS 05.08 [20]. According to [20], the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.

This gives a total of 25.6 s + T_{BCCH}, allow 26 s + T_{BCCH} in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2 and A.4.3.1.

8.2.3.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.3.1.4 Method of test

8.2.3.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected, as given in tables 8.2.3.1.1 to 8.2.3.1.5. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 12 GSM cells. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.3.1.1: Scenario 1: General test parameters for UTRAN to GSM Cell Re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cell		Cell2	
Final condition	Active cell		Cell2	
HCS				Not used
DRX cycle length		s	1.28	
T1		s	45	
T2		s	35	

Table 8.2.3.1.2: Scenario 1: Test parameters for Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
PCCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
OCNS_Ec/Ior	dB	-0.941	
$\hat{I}_{or}/I_{oc}$	dB	0	-5
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io	dB	-13	-16.2
CPICH_RSCP	dBm	-80	-85
Propagation Condition		AWGN	
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0	
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
Qoffset1$_{s,n}$	dB	C1, C2: 0	
Qhyst1	dB	0	
Treselection	s	0	
Ssearch$_{RAT}$	dB	not sent	

Table 8.2.3.1.3: Scenario 1: Test parameters for Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-90	-75
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

8.2.3.1.4.2 Procedure

1) The SS activates cell 1 and 2 with T1 defined parameters in tables 8.2.3.1.4 and 8.2.3.1.5 and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

3) The SS and the UE shall perform a location registration procedure on cell 1.~~The SS waits for random access requests from the UE on cell 1~~.

4) After 45 s from the end of step 3, the parameters are changed as described for T2 in tables 8.2.3.1.4 and 8.2.3.1.5.

5) The SS waits for ~~random access requests~~ a location registration procedure from the UE. If the UE ~~responds~~begins transmitting on cell 2 within 28 s then the number of successful tests is increased by one.

6) After 35 s from the beginning of T2, the parameters are changed as described for T1 in tables 8.2.3.1.4 and 8.2.3.1.5.

7) The SS and the UE shall perform a location registration procedure on cell 1.~~The SS waits for random access requests from the UE on cell 1.~~

8) After 45 s from the end of step 6, the parameters are changed as described for T2 in tables 8.2.3.1.4 and 8.2.3.1.5.

9~~8~~) Repeat step 5~~4~~) to 8~~7~~) until the confidence level according to annex F.6.2 is achieved.

8.2.3.1.5 Test requirements

Table 8.2.3.1.4: Scenario 1: Cell re-selection UTRAN to GSM cell case (cell 1), test requirements

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-9.9	-10.1
PCCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
OCNS_Ec/Ior	dB	-0.953	-0,928
$\hat{I}_{or}/I_{oc}$	dB	0.3	-5.3
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io (Note 1)	dB	-12.8	-16.5
CPICH_RSCP (Note1)	dBm	-79.6	-85.4
Propagation Condition		AWGN	
Cell_selection_and_ reselection_quality_measure		CPICH E_c/N_0	
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
$Qoffset1_{s, n}$	dB	C1, C2: 0	
Qhyst1	dB	0	
Treselection	s	0	
$Ssearch_{RAT}$	dB	not sent	

Table 8.2.3.1.5: Scenario 1: Cell re-selection UTRAN to GSM cell case (cell 2), test requirements

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-90.3	-74.7
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

NOTE 1: CPICH_Ec/Io and CPICH_RSCP levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95 %.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.3.2 Scenario 2: Only UTRA level changed

8.2.3.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell and starts to send the RR Channel Request message for location update to the new cell.

The requirements and this test apply to the combined FDD and GSM UE.

8.2.3.2.2 Minimum requirement

The cell re-selection delay shall be less than 7.7 s + T_{BCCH}, where TBCCH is the maximum time allowed to read BCCH data from GSM cell TS 05.08 [20].

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: Max (3* $T_{measureFDD}$, $T_{measureGSM}$+DRX cycle length) + T_{BCCH}, where:

$T_{measureFDD}$	See table 4.1 in TS 25.133 [2] clause 4.2.2.
$T_{measureGSM}$	See table 4.1 in TS 25.133 [2] clause 4.2.2.
DRX cycle length	1.28s see Table A.4.7.A in TS 25.133 [2] clause A.4.3.2.
T_{BCCH}	Maximum time allowed to read BCCH data from GSM cell TS 05.08 [20]. According to [20], the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.

This gives a total of 7.68 s + T_{BCCH}, allow 7.7 s + T_{BCCH} in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2 and A.4.3.2.

8.2.3.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.3.2.4 Method of test

8.2.3.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected, as given in tables 8.2.3.2.1 to 8.2.3.2.5. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 12 GSM cells. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.3.2.1: Scenario 2: General test parameters for UTRAN to GSM Cell Re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cell		Cell2	
Final condition	Active cell		Cell2	
HCS				Not used
DRX cycle length		s	1.28	
T1		s	45	
T2		s	12	

Table 8.2.3.2.2: Scenario 2: Test parameters for Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
PCCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
OCNS_Ec/Ior	dB	-0.941	
$\hat{I}_{or}/I_{oc}$	dB	20	-9
I_{oc}	dBm/3.84 MHz	-81	
CPICH_Ec/Io	dB	-10.0	-19.5
CPICH_RSCP	dBm	-70	-100
Propagation Condition		AWGN	
Cell_selection_and_ reselection_quality_measure		CPICH E_c/N_0	
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
Qoffset1$_{s,n}$	dB	C1, C2: 0	
Qhyst1	dB	0	
Treselection	s	0	
Ssearch$_{RAT}$	dB	not sent	

Table 8.2.3.2.3: Scenario 2: Test parameters for Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-80	-80
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

8.2.3.2.4.2 Procedure

1) The SS activates cell 1 and 2 with T1 defined parameters in tables 8.2.3.2.4 and 8.2.3.2.5 and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

3) The SS and the UE shall perform a location registration procedure on cell 1.~~The SS waits for random access requests from the UE on cell 1.~~

4) After 45 s from the end of step 3, the parameters are changed as described for T2 in tables 8.2.3.2.4 and 8.2.3.2.5.

5) The SS waits for ~~random access requests~~a location registration procedure from the UE. If the UE ~~responds~~begins transmitting on cell 2 within 9.7 s then the number of successful tests is increased by one.

6) After 12 s from the beginning of T2, the parameters are changed as described for T1 in tables 8.2.3.2.4 and 8.2.3.2.5.

7) The SS and the UE shall perform a location registration procedure on cell 1. ~~The SS waits for random access requests from the UE on cell 1.~~

8) After 45 s from the end of step 6, the parameters are changed as described for T2 in tables 8.2.3.2.4 and 8.2.3.2.5.

9~~8~~)Repeat step 5~~4~~) to 8~~7~~) until the confidence level according to annex F.6.2 is achieved.

8.2.3.2.5 Test requirements

Table 8.2.3.2.4: Scenario 2: Cell re-selection UTRAN to GSM cell case (cell 1), test requirements

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-9.9	-10.1
PCCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
OCNS_Ec/Ior	dB	-0.953	-0.941
$\hat{I}_{or}/I_{oc}$	dB	20.3	-9.3
I_{oc}	dBm/3.84 MHz	-81	
CPICH_Ec/Io (Note1)	dB	-9.9	-19.9
CPICH_RSCP (Note1)	dBm	-70.6	-100.4
Propagation Condition		AWGN	
Cell_selection_and_ reselection_quality_measure		CPICH E_c/N_0	
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
Qoffset1$_{s, n}$	dB	C1, C2: 0	
Qhyst1	dB	0	
Treselection	s	0	
Ssearch$_{RAT}$	dB	not sent	

Table 8.2.3.2.5: Scenario 2: Cell re-selection UTRAN to GSM cell case (cell 2), test requirements

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-80.3	-79.7
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

NOTE 1: CPICH_Ec/Io and CPICH_RSCP levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95 %.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #25 **Tdoc ⌘ T1-041870**
St Paul's Bay, Malta, 1st - 5th November 2004

CR-Form-v7

CHANGE REQUEST

⌘ **34.121 CR** 470 ⌘ **rev** - ⌘ Current version: **5.5.0** ⌘

For ***HELP*** *on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction to MEASUREMENT CONTROL Message for 8.6.2.1: Correct reporting of neighbours in AWGN propagation condition and 8.3.2.2: FDD/FDD Hard Handover to inter-frequency cell test cases
Source:	⌘	Motorola
Work item code:	⌘	TEI
Date:	⌘	04/11/2004
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change: ⌘ The MEASUREMENT CONTROL Message is not correct for test cases 8.6.2.1 and 8.3.2.2. Based on 25.331 section 8.6.7.14 it states:

1> if IE ìInter-frequency measurementî is received by the UE in a MEASUREMENT CONTROL message, where IE ìmeasurement commandî has the value ìsetupî, if an inter-frequency event is configured that is different from event 2d or 2f, and if the IE ìInter-frequency SET UPDATEî is not received in that same message:

2> set the variable CONFIGURATION_INCOMPLETE to TRUE.

The current specification do not have the ìInter-frequency SET UPDATEî IE in the message.

Summary of change: ⌘ The ìInter-frequency SET UPDATEî IE is added to the message and the reporting cell status have been changed to include virtual active set on non-used frequency since there may be an possibility that no cells are in the monitored set to report cell measurement results.

Consequences if not approved: ⌘ Ambiguity in the test requirement specification could lead to false test case implementation

Clauses affected: ⌘ 8.6.2.1, 8.3.2.2

		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR is applicable for UEís supporting Rel-99 or later.				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.2.2 FDD/FDD Hard Handover to inter-frequency cell

8.3.2.2.1 Definition and applicability

The hard handover delay is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCCH.

The requirements and this test apply to the FDD UE.

8.3.2.2.2 Minimum requirement

The interruption time shall be less than 140 ms in CELL_DCH state in the dual carrier case. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95 %.

The hard handover delay $D_{handover}$ equals the RRC procedure delay defined in TS 25.331 clause 13.5.2 plus the interruption time stated in TS 25.133 clause 5.2.2.2 as follows:

If inter-frequency hard handover is commanded and the UE needs compressed mode to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt2}$

$T_{interrupt2} = T_{IU}+40+50*KC+150*OC + 10*F_{max}$ ms

In the interruption requirement $T_{interrupt2}$ a cell is known if:

- the cell has been measured by the UE during the last 5 seconds.

The phase reference is the primary CPICH.

The normative reference for this requirement is TS 25.133 [2] clauses 5.2.2 and A.5.2.2.

8.3.2.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.2.2.4 Method of test

8.3.2.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in tables 8.3.2.2.1 to 8.3.2.2.3 below. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a PHYSICAL CHANNEL RECONFIGURATION with activation time "now" with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined in TS 25.331 [8].

N312 shall have the smallest possible value i.e. only one insync is required.

Table 8.3.2.2.1: General test parameters for Handover to inter-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in clause C.3.1 and C.2.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 1	As specified in TS 34.121 clause C.5.
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold non used frequency		dB	-18	Absolute Ec/I0 threshold for event 2C
Hysteresis		dB	0	
W non-used frequency			1	Applicable for event 2C
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	5	
T2		s	10	
T3		s	5	

Table 8.3.2.2.2: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1			Channel 2		
CPICH_Ec/Ior	dB	-10			-10		
PCCPCH_Ec/Ior	dB	-12			-12		
SCH_Ec/Ior	dB	-12			-12		
PICH_Ec/Ior	dB	-15			-15		
DPCH_Ec/Ior	dB	Note1	Note1	Note3	N/A	N/A	Note1
OCNS_Ec/Ior	dB	Note2	Note2	Note2	-0.941	-0.941	Note2
$\hat{I}_{or}/I_{oc}$	dB	0			-Infinity	-1.8	-1.8
$\hat{I}_{or}$ *(Note 4)*	dBm	-70.0			-Infinity	-71.8	-71.8
I_{oc}	dBm/ 3.84 MHz	-70					
CPICH_Ec/Io	dB	-13			-Infinity	-14	
Propagation Condition		AWGN					

Note 1: The DPCH level is controlled by the power control loop
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or} .
Note 3: The DPCH may not be power controlled by the power control loop.
Note 4: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.2.2.4.2 Procedure

1) The RF parameters are set up according to T1 in table 8.3.2.2.3.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 with Compressed mode parameters as in Table 8.3.2.2.1.
4) SS shall transmit a MEASUREMENT CONTROL messages.
5) 5 seconds after step 4 has completed, the SS shall switch the power settings from T1 to T2 in table 8.3.2.2.3.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C

7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time "now". SS shall transmit the whole message such that will be is available at the UE no later than a period equals to the RRC procedure delay (= 80 ms) prior to the beginning of T3.

8) After 10 seconds from the beginning of time period T2, the SS shall switch the power settings from T2 to T3 in table 8.3.2.2.3.

9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCCH to cell 2 less than 140 ms from the beginning of time period T3 then the number of successful tests is increased by one.

10) After 5 seconds from the beginning of time period T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

11) Repeat step 1-10 until the confidence level according to annex F.6.2 is achieved

Specific Message Contents

All messages indicated belowabove shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message, event 2C (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 2 Setup AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) - CHOICE Inter-frequency cell removal - New Inter frequency cells - Inter frequency cell id - Frequency info - CHOICE mode - UARFCN uplink(Nu) - UARFCN downlink(Nd) - Cell info - Cell individual offset - Reference time difference to cell - Read SFN indicator - CHOICE mode - Primary CPICH info - Primary scrambling code - Primary CPICH Tx Power - Tx Diversity Indicator - Cell for measurement -Inter-frequency measurement quantity (10.3.7.18) -CHOICE reporting criteria -Inter-frequency reporting criteria -Filter coefficient -CHOICE mode -Measurement quantity for frequency quality estimate	Inter-frequency measurement Not Present 0 FDD Not Present Same frequency as "Channel2" in Table 8.3.2.2.2 Not Present Not Present TRUE FDD Set to Primary scrambling code of Cell2 Set to Primary CPICH Tx Power of Cell2 described in Table 8.3.2.2.2 FALSE Not Present Inter-frequency reporting criteria 0 FDD CPICH Ec/N0
-Inter-frequency reporting quantity (10.3.7.21) -UTRA Carrier RSSI -Frequency quality estimate -Non frequency related cell reporting quantities (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 FALSE FALSE TRUE TRUE FDD TRUE TRUE FALSE
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -Inter-frequency set update (10.3.7.22) -UE autonomous update mode	Not Present Not Present ~~Not Present~~ On with no reporting
-CHOICE report criteria	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event -Inter-frequency event identity (10.3.7.14) -Threshold used frequency	 1 Event 2C Not Present

Information Element/Group name	Value/Remark
-W used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	~~Report cells within monitored set on non-used frequency~~ Report cells within monitored and/or virtual active set on non-used frequency
-Maximum number of reported cells per reported non-used frequency	1
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-18 dB
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	"now"
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
>RB with PDCP information list	Not Present
>>RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE mode	FDD
-UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 2
-UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE *channel requirement*	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE mode	FDD
-DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
-CHOICE mode	FDD
-Scrambling code type	Long
-Scrambling code number	0 (0 to 16777215)
-Number of DPDCH	Not Present(1)
-Spreading factor	64
-TFCI existence	TRUE
-Number of FBI bit	Not Present(0)
-Puncturing Limit	1
Downlink radio resources	
-CHOICE *mode*	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-DPC mode	0 (single)
-CHOICE mode	FDD
-Power offset $P_{Pilot\text{-}DPDCH}$	0
-DL rate matching restriction information	Not Present
-Spreading factor	128
-Fixed or Flexible Position	Fixed
-TFCI existence	TRUE
-CHOICE SF	128

Information Element	Value/Remark
-Number of bits for Pilot bits(SF=128,256)	8
-CHOICE mode	FDD
-DPCH compressed mode info (10.3.6.33)	
- Transmission gap pattern sequence	1
- TGPSI	1
- TGPS Status Flag	deactivate
- TGCFN	Not Present
- Transmission gap pattern sequence configuration parameters	Not Present
-TX Diversity mode (10.3.6.86)	None
-SSDT information (10.3.6.77)	Not Present
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
-Primary scrambling code	350
-PDSCH with SHO DCH info (10.3.6.47)	Not Present
-PDSCH code mapping (10.3.6.43)	Not Present
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	0 chips
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No change
-TPC combination index	0
- SSDT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Inter-frequency measured results	
- Frequency Info	Checked that this IE is present
- Inter-freqcell measured results list	
- Cell measured results	
- Cell Identity	Not present
- Cell synchronisation information	
- Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
- CPICH Ec/N0	Checked that this IE is present
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is present

8.3.2.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.2.2.3: Test requirements for Handover to inter-frequency cell

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1			Channel 2		
CPICH_Ec/Ior	dB	-9.2			-9.2		
PCCPCH_Ec/Ior	dB	-11.2			-11.2		
SCH_Ec/Ior	dB	-11.2			-11.2		
PICH_Ec/Ior	dB	-14.2			-14.2		
DPCH_Ec/Ior	dB	Note1	Note1	Note3	N/A	N/A	Note1
OCNS_Ec/Ior	dB	Note2	Note2	Note2	-1.16	-1.16	Note2
$\hat{I}_{or}/I_{oc}$ *(Note 4)*	dB	0			-Infinity	-1.8	-1.8
$\hat{I}_{or}$	dBm	-70.0			-Infinity	-71.8	-71.8
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/Io *(Note 4)*	dB	-12.2			-Infinity	-13.2	
Propagation Condition		AWGN					

Note 1: The DPCH level is controlled by the power control loop
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.
Note 3: The DPCH may not be power controlled by the power control loop.
Note 4: These parameters are not directly settable, but are derived by calculation from the settable parameters.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.2 FDD inter frequency measurements

8.6.2.1 Correct reporting of neighbours in AWGN propagation condition

8.6.2.1.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit the measurement report over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the FDD UE.

8.6.2.1.2 Minimum requirements

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$\mathrm{T}_{\text{identify inter}} = Max\left\{5000, \mathrm{T}_{\text{basic identify FDD,inter}} \cdot \frac{\mathrm{T}_{\text{Measurement Period, Inter}}}{\mathrm{T}_{\text{Inter}}} \cdot N_{Freq}\right\} ms$$

A cell shall be considered detectable when CPICH Ec/Io $\geq$ -20 dB, SCH_Ec/Io $\geq$ -17 dB for at least one channel tap and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

When transmission gaps are scheduled for FDD inter frequency measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.1 and 9.1.2 of 25.133 with measurement period given by

$$\mathrm{T}_{\text{measurement inter}} = Max\left\{\mathrm{T}_{\text{Measurement\_Period Inter}}, \mathrm{T}_{\text{basic measurement FDD inter}} \cdot \frac{\mathrm{T}_{\text{Measurement\_Period Inter}}}{\mathrm{T}_{\text{Inter}}} \cdot N_{Freq}\right\} ms$$

If the UE does not need compressed mode to perform inter-frequency measurements, the measurement period for inter frequency measurements is 480 ms.

The UE shall be capable of performing CPICH measurements for $X_{\text{basic measurement FDD inter}}$ inter-frequency cells per FDD frequency of the monitored set or the virtual active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $T_{\text{Measurement\_ Inter.}}$

$X_{\text{basic measurement FDDinter}}$ = 6

$T_{\text{Measurement\_Period Inter}}$ = 480 ms. The period used for calculating the measurement period $T_{\text{measurement\_inter}}$ for inter frequency CPICH measurements.

$T_{\text{Inter:}}$ This is the minimum time that is available for inter frequency measurements , during the period $T_{\text{Measurement\_Period inter}}$ with an arbitrarily chosen timing. The minimum time per transmission gap is calculated by using the actual idle length within the transmission gap as given in the table 11 of Annex B in TS 25.212 and by assuming 2*0.5 ms for implementation margin and after that taking only full slots into account in the calculation.

$T_{\text{basic\_identify\_FDD,inter}}$ = 800 ms. This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.

$T_{\text{basic\_measurement\_FDD inter}}$ = 50 ms. This is the time period used in the equation for defining the measurement period for inter frequency CPICH measurements.

N_{Freq}: Number of FDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{identify\ inter}$ defined in Clause 8.1.2.3.1 of 25.133 When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{identify\_inter}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement\_Period\ Inter}$ provided the timing to that cell has not changed more than +/-32 chips while transmission gap has not been available and the L3 filter has not been used.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.3 and A.8.2.1.

8.6.2.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.2.1.4 Method of test

8.6.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The initial test parameters are given in table 8.6.2.1.1

Table 8.6.2.1.1: Cell specific initial test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	0	-Inf	-Inf
I_{oc}	dBm/3.84 MHz	-70		
CPICH_Ec/Io	dB	-13	-Inf	-Inf
Propagation Condition	AWGN			

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables 8.6.2.1.2 and 8.6.2.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

Table 8.6.2.1.2: General test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Compressed mode		C.5.2 set 1	As specified in C.5.
Active cell		Cell 1	
Threshold non used frequency	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range	dB	4	Applicable for event 1A
Hysteresis	dB	0	
W		1	Applicable for event 1A
W non-used frequency		1	Applicable for event 2C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1 16 on channel 2	NOTE: See Annex I for cell information.The information is sent before the compressed mode pattern starts.
T1	s	10	
T2	s	5	

Table 8.6.2.1.3: Cell Specific parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-17		N/A		N/A	
OCNS_Ec/Ior	dB	-1.049		ñ0.941		ñ0.941	
$\hat{I}_{or}/I_{oc}$	dB	0	5.42	-Infinity	3.92	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/Io	dB	-13	-13	-Infinity	-14.5	-14	-14
Propagation Condition	AWGN						

8.6.2.1.4.2 Procedure

1) The RF parameters are set up according to T0.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.

4) SS shall transmit a MEASUREMENT CONTROL message (inter frequency).

5) SS shall transmit a MEASUREMENT CONTROL message (intra frequency).

6) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

7) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

8) 5 seconds after step7 has completed, the SS shall switch the power settings from T0 to T1.

9) UE shall transmit a MEASUREMENT REPORT message (inter frequency) triggered by event 2C. The measurement reporting delay from the beginning of T1 shall be less than 9.08 seconds. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

10) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

11) UE shall transmit a MEASUREMENT REPORT message (intra frequency) triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 1040 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

12) After 5 seconds from the beginning of T2, the UE is switched off.

13) Repeat steps 1-12 until the confidence level according to annex F.6.2 is achieved.

NOTE: The measurement reporting delay is 956.2 ms plus 80 ms delay uncertainty (twice the TTI). This gives a total of 1036.2 ms and rounded off to 1040 ms.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement:

Information Element	Value/Remark
Message Type	
UE Information Elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number -Integrity protection mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. Not Present Not Present Not Present Not Present Not Present CELL_DCH Not Present
CN Information Elements -CN Information info	 Not Present
UTRAN mobility information elements -URA identity	 Not Present
RB information elements -Downlink counter synchronisation info	 Not Present
PhyCH information elements -Frequency info	 Not Present
Uplink radio resources -Maximum allowed UL TX power	 Not Present
Downlink radio resources -CHOICE mode -Downlink PDSCH information -Downlink information common for all radio links -Downlink DPCH info common for all RL -CHOICE mode -DPCH compressed mode info -Transmission gap pattern sequence -TGPSI -TGPS Status Flag -TGCFN -Transmission gap pattern sequence configuration parameters -TGMP -TGPRC -TGSN -TGL1 -TGL2 -TGD -TGPL1 -TGPL2 -RPP -ITP -CHOICE UL/DL mode -Downlink compressed mode method -Uplink compressed mode method -Downlink frame type -DeltaSIR1 -DeltaSIRafter1 -DeltaSIR2 -DeltaSIRafter2 -N Identify abort -T Reconfirm abort -TX Diversity Mode -SSDT information -Default DPCH Offset Value	 FDD Not Present Not Present FDD 1 Activate (Current CFN + (256 ñ TTI/10msec))mod 256 FDD measurement Not present 4 7 Not Present UNDEFINED 3 Not Present Mode 0 Mode 0 UL and DL SF/2 SF/2 B 3.0 3.0 Not Present Not Present Not Present Not Present Not Present Not Present Not Present

-Downlink information per radio link list	
- Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT CONTROL message (inter frequency):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
- CHOICE Inter-frequency cell removal	Not Present
- New Inter frequency cells	
- Inter frequency cell id	0
- Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Not Present
- UARFCN downlink(Nd)	Same frequency as "Channel2" in Table 8.6.2.1.3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to Primary scrambling code of Cell3
- Primary CPICH Tx Power	Set to Primary CPICH Tx Power of Cell3 described in Table 8.6.2.1.3
- Tx Diversity Indicator	FALSE
- Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE reporting criteria ~~-Intra-frequency reporting criteria~~	Inter-frequency reporting criteria
~~-Intra-frequency measurement quantity (10.3.7.38)~~	
~~-Filter coefficient (10.3.7.9)~~	~~0~~
~~-CHOICE mode~~	~~FDD~~
~~-Measurement quantity~~	~~CPICH_Ec/N0~~
~~-Inter-frequency reporting criteria~~	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH_Ec/N0
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
- Inter-frequency set update (10.3.7.22)	
-UE autonomous update mode	On with no reporting
-CHOICE report criteria	Inter-frequency measurement reporting

Information Element/Group name	Value/Remark
-Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event	criteria 1
-Inter-frequency event identity -Threshold used frequency -W used frequency -Hysteresis -Time to trigger -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Parameters required for each non-used frequency -Threshold non used frequency -W non-used frequency	Event 2C Not present Not present 0 dB 0 ms Report cells within monitored and/or virtual active set on non-used frequency~~Report cells within monitored set on non-used frequency~~ 3 -18 dB 1
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present
NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.	

MEASUREMENT CONTROL message (intra frequency):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0
-message authentication code -RRC message sequence number	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity (10.3.7.41)	Intra-frequency measurement Not Present 0 FDD CPICH_Ec/N0
-Reporting quantities for active set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE report criteria -Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event	Not Present Not Present Intra-frequency measurement reporting criteria 1
-Intra-frequency event identity -Triggering condition 2 -Reporting Range Constant -Cells forbidden to affect Reporting Range -CHOICE mode -Primary CPICH info (10.3.6.60) -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status	Event 1A Monitored set cells 4 dB Not Present FDD 1.0 0 dB Not Present 0 Not Present 0 ms Not Present 0 ms (Note 2) Not Present
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present

Information Element/Group name	Value/Remark
Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL. Note 2: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message for Inter frequency test cases

MEASUREMENT REPORT message for Intra frequency test cases

These messages are common for all inter and intra frequency test cases and are described in Annex I.

8.6.2.1.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #25
St Paul's Bay, Malta, 1st - 5th November 2004

Tdoc ⌘ T1-041872

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	471	⌘ **rev**	-	⌘	Current version:	**5.5.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Corrections to HSDPA test 9.2 (Demod of HS-DSCH)		
Source:	⌘	Agilent Technologies, NEC		
Work item code:	⌘	TEI	***Date:*** ⌘	~~03~~05/11/2004
Category:	⌘	**F**	***Release:*** ⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change: ⌘ Clarification of the text and correction of several incorrect references

Summary of change: ⌘

a) Corrected reference to 25.101 in 6.3A.2.
b) Changed the connection diagram in 9.2.1.4.1 procedure from A.16 to A.17 which is the one with the AMC included.
c) Added missing reference in 9.2.1.4.1 procedure to E.5.1 for channel setup
d) Added ìstatî to DTX in 9.2.1.4.2, 9.2.2.4.2 and 9.2.3.4.2 procedures
e) Added more detailed references in 9.2.1.4.2, 9.2.2.4.2 and 9.2.3.4.2 procedures to tables in F.6.3 for statistical testing
f) Corrected references to new diversity connection diagram for 9.2.2.4.1 and 9.2.3.4.1
g) Added more detailed references in 9.2.2.4.2 procedure to tables in F.6.3 for statistical testing
h) Corrected numbering of 9.2.2.4.3 Test requirements which should have been level 3 heading 9.2.2.5
i) Corrected titles of tables 9.2.2.12, 9.2.2.14, 9.2.2.16 & 9.2.2.17
j) Corrected initial step number in 9.2.3.4.1
k) Corrected numbering of 9.2.3.4.3 Test requirements which should have been level 3 heading 9.2.3.5
l) Corrected titles of tables 9.2.3.12, 9.2.3.14, 9.2.3.16 & 9.2.3.17
m) Corrected error with connection diagrams A.16 and A.17 which have the wrong titles. A.16 is used for tests without MC or diversity. A.17 is used for tests with AMC and without diversity.
n) Corrected title of figure A.17 which applies to both CQI tests
o) Added new connection diagram A.19 for open and closed loop diversity
p) Corrected spaces in numbering of Table F.6.3.5.2.2 and F.6.3.5.2.3
q) Removed duplicate numbering of tables in F.6.3
r) Added descriptive names to tables in F.6.3

		s) Further update of 9.2.1.4.1 to correct and clarify references to parameter and requirements tables t) Removed redundant information from Table 9.2.1.16
Consequences if not approved:	⌘	The test conditions will not be correct and the test may fail a good UE.

Clauses affected:	⌘	6.3A, 9.2, Annex A, Annex F.6.3				
		Y	**N**			
Other specs Affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

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Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.3A Maximum Input Level for HS-PDSCH Reception (16QAM)

6.3A.1 Definition and applicability

Maximum input level is defined as the maximum mean HS-PDSCH power received at the UE antenna port, which shall not degrade the specified HSDPA throughput performance. The requirements and this test apply to all types of UTRA FDD UE that support HSDPA(16QAM).

6.3A.2 Minimum requirements

For the parameters specified in Table 6.3A.1, the requirements are specified in terms of a minimum information bit throughput R as shown in Table 6.3A.2 for the DL reference channel H-Set 1 specified in Annex C.8. with the addition of the parameters added in the end of Table 6.3A.1,

The throughput shall meet or exceed the minimum level the for the parameters specified in table 6.3A.1.

The reference for this requirement is TS 25.101 [1] clause 7.4.~~1~~2.

9 Performance requirements for HSDPA

9.1 General

The performance requirements for the UE in this clause are specified for the measurement channels specified in Annex C, the propagation conditions specified in Annex D and the Down link Physical channels specified in Annex E.

9.2 Demodulation of HS-DSCH (Fixed Reference Channel)

9.2.1 Single Link Performance

9.2.1.1 Definition and applicability

The receiver single link performance of the High Speed Physical Downlink Shared Channel (HS-DSCH) in different multi-path fading environments are determined by the information bit throughput R.

The UE shall be tested only according to the data rate, supported. The data-rate corresponding requirements shall apply to the UE.

The requirements and this test apply to all types of UTRA for the FDD UE that support HSDPA.

9.2.1.2 Minimum requirements

Requirements for a particular UE belonging to certain HS-DSCH category are determined according to Table 9.2.1.1. During the Fixed Reference Channel (FRC) tests the behaviour of the Node-B emulator in response to the ACK/NACK signalling field of the HS-DPCCH is specified in Table 9.2.1.2.

Table 9.2.1.1: Mapping between HS-DSCH category and FRC

HS-DSCH category	Corresponding requirement
Category 1	H-Set 1
Category 2	H-Set 1
Category 3	H-Set 2
Category 4	H-Set 2
Category 5	H-Set 3
Category 6	H-Set 3
Category 11	H-Set 4
Category 12	H-Set 5

Table 9.2.1.2: Node-B Emulator Behaviour in response to ACK/NACK/DTX

HS-DPCCH ACK/NACK Field State	Node-B Emulator Behaviour
ACK	ACK: new transmission using 1st redundancy version (RV)
NACK	NACK: retransmission using the next RV (up to the maximum permitted number or RVís)
DTX	DTX: retransmission using the RV previously transmitted to the same H-ARQ process

For the parameters specified in Table 9.2.1.3, 9.2.1.5, 9.2.1.7 the requirements are specified in terms of minimum information bit throuhput R as shown in Table 9.2.1.4, 9.2.1.6,9.2.1.8, and 9.2.1.9 for QPSK and 16QAM and for the DL reference channels specified in Annex C.8.1.

Table 9.2.1.3: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference	dBm/3.84 MHz	P-CPICH			
I_{oc}		-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

Table 9.2.1.4: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} **(dB)**	**T-put** R **(kbps) *** $\hat{I}_{or} / I_{oc}$ **= 0 dB**	**T-put** R **(kbps) *** $\hat{I}_{or} / I_{oc}$ **= 10 dB**
1	PA3	-6	65	309
		-3	N/A	423
2	PB3	-6	23	181
		-3	138	287
3	VA30	-6	22	190
		-3	142	295
4	VA120	-6	13	181
		-3	140	275
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)			

Table 9.2.1.5: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference	dBm/3.84 MHz	P-CPICH			
I_{oc}		-60			
Redundancy and constellation version coding sequence		{6,2,1,5}			
Maximum number of HARQ transmission		4			

Table 9.2.1.6: Minimum requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c / I_{or} **(dB)**	**T-put** R **(kbps) *** $\hat{I}_{or} / I_{oc}$ **= 10 dB**
1	PA3	-6	198
		-3	368
2	PB3	-6	34
		-3	219
3	VA30	-6	47
		-3	214
4	VA120	-6	28
		-3	167

* Notes:	1)The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)

Table 9.2.1.7: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

Table 9.2.1.8: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} **(dB)**	**T-put** R **(kbps) *** $\hat{I}_{or} / I_{oc}$ **= 0 Db**	**T-put** R **(kbps) *** $\hat{I}_{or} / I_{oc}$ **= 10 dB**
1	PA3	-6	72	340
		-3	N/A	439
2	PB3	-6	24	186
		-3	142	299
3	VA30	-6	19	183
		-3	148	306
4	VA120	-6	11	170
		-3	144	284
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.2.1.9: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} **(dB)**	**T-put** R **(kbps) *** $\hat{I}_{or} / I_{oc}$ **= 0 dB**	**T-put** R **(kbps) *** $\hat{I}_{or} / I_{oc}$ **= 10 dB**
1	PA3	-6	98	464
		-3	N/A	635
2	PB3	-6	35	272
		-3	207	431
3	VA30	-6	33	285
		-3	213	443
4	VA120	-6	20	272
		-3	210	413
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

The reference for this requirement is TS 25.101 [1] clauses 9.2.1.1, 9.2.1.2 and 9.2.1.3.

9.2.1.3 Test purpose

To verify the ability of the receiver to receive a predefined test signal, representing a multi-path fading channel with information bit throughput R not falling below a specified value. The test stresses the multicode reception and channel decoding with incremental redundancy.

9.2.1.4 Method of test

9.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS (node B emulator) and fader and AWGN noise source to the UE antenna connector as shown in ~~annex A~~ figure A.17~~6~~.

2) Set up an HSDPA call according to TS 34.108 [3] clause 7.3.6.3. ~~Set test conditions according to test 1 according table 9.2.1.3 (Category 1-6) or 9.2.1.7 (Category 11,12).~~

3) Set the test parameters for tests 1-4 according to tables 9.2.1.2, 9.2.1.3~~—~~9.2.1.5~~,~~ (Category 1-6) or ~~—~~9.2.1.7 (Category 11,12)~~—~~and levels according to tables 9.2.1.12 to 9.2.1.15 (Category 1-6) or 9.2.1.16 to 9.2.1.18 (Category 11,12)~~8~~. The configuration of the downlink channels is defined in table E.5.1.

4) The information bit data shall be pseudo random and not repeated not before 10 different information bit payload blocks are processed. (e.g. Fixed reference Channel Definition H-set 1 (16 QAM): The information bit payload block is 4664 bits long. Hence the PRBSequence must be at least 4664 * 10 bits long.) Use a PRBS from ITU-R O.153 Ref [26]

5) The SS shall not time the transmission freely. It shall time the transmission strictly according to the reference measurement channels: i.e. Process number i is continued exactly after 6 TTIs.

6) Setup fading simulators as fading conditions , which are described in table D.2.2.1.A

9.2.1.4.2 Procedure

1) Start transmitting HSDPA Data.

2) For all relevant propagation conditions, for all relevant Ioc levels, for all relevant Ec/Ior, for all relevant Îor/Ioc, for all relevant H-sets in tables 9.2.1.12 to 9.2.1.18 count the number of NACK, ACK and statDTX on the UL HS-DPCCH during the test interval and decide pass or fail according to Annex F.6.3 tables F.6.3.5.2.1, F.6.3.5.2.2, F.6.3.5.2.3 and F.6.3.5.2.4.

9.2.1.5 Test Requirements

Tables 9.2.1.12 to 9.2.1.18 define the level settings including test tolerance for all relevant throughput tests. The pass / fail decision for throughput is done according to Annex F.6.3.

Table 9.2.1.12: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60 (no test tolerance applied)			

Table 9.2.1.13: Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0.3 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10.3 dB
1	PA3	-5.9	65	309
		-2.9	N/A	423
2	PB3	-5.9	23	181
		-2.9	138	287
3	VA30	-5.9	22	190
		-2.9	142	295
4	VA120	-5.9	13	181
		-2.9	140	275
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)			

Table 9.2.1.14: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60 (no test tolerance applied)			

Table 9.2.1.15: Test requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10.3 dB
1	PA3	-5.9	198
		-2.9	368
2	PB3	-5.9	34
		-2.9	219
3	VA30	-5.9	47
		-2.9	214
4	VA120	-5.9	28
		-2.9	167
* Notes:	1)The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)		

Table 9.2.1.16: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60 (no test tolerance applied)			
~~Redundancy and constellation version coding sequence~~		~~{0,2,5,6}~~			
~~Maximum number of HARQ transmission~~		4			

Table 9.2.1.17: Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0.3 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10.3 dB
1	PA3	-5.9	72	340
		-2.9	N/A	439
2	PB3	-5.9	24	186
		-2.9	142	299
3	VA30	-5.9	19	183
		-2.9	148	306
4	VA120	-5.9	11	170
		-2.9	144	284
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.2.1.18: Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0.3 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10.3 dB
1	PA3	-5.9	98	464
		-2.9	N/A	635
2	PB3	-5.9	35	272
		-2.9	207	431
3	VA30	-5.9	33	285
		-2.9	213	443
4	VA120	-5.9	20	272
		-2.9	210	413
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

9.2.2 Open Loop Diversity Performance

9.2.2.1 Definition and applicability

The receiver single open loop transmit diversity performance of the High Speed Physical Downlink Shared Channel (HS-DSCH) in multi-path fading environments are determined by the information bit throughput R.

The UE shall be tested only according to the data rate, supported. The data-rate corresponding requirements shall apply to the UE.

The requirements and this test apply to all types of UTRA for FDD UE that support HSDPA.

9.2.2.2 Minimum requirements

Requirements for a particular UE belonging to certain HS-DSCH category are determined according to Table 9.2.2.1. During the Fixed Reference Channel (FRC) tests the behaviour of the Node-B emulator in response to the ACK/NACK signalling field of the HS-DPCCH is specified in Table 9.2.2.2.

Table 9.2.2.1: Mapping between HS-DSCH category and FRC

HS-DSCH category	Corresponding requirement
Category 1	H-Set 1
Category 2	H-Set 1
Category 3	H-Set 2
Category 4	H-Set 2
Category 5	H-Set 3
Category 6	H-Set 3
Category 11	H-Set 4
Category 12	H-Set 5

Table 9.2.2.2: Node-B Emulator Behaviour in response to ACK/NACK/DTX

HS-DPCCH ACK/NACK Field State	Node-B Emulator Behaviour
ACK	ACK: new transmission using 1st redundancy version (RV)
NACK	NACK: retransmission using the next RV (up to the maximum permitted number or RVís)
DTX	DTX: retransmission using the RV previously transmitted to the same H-ARQ process

For the parameters specified in Tables 9.2.2.3, 9.2.2.5, 9.2.2.7 the requirements are specified in terms of minimum information bit throughput R as shown in Table 9.2.2.4, 9.2.2.6,9.2.2.8, and 9.2.2.9 for QPSK and 16QAM and for the DL reference channels specified in Annex C.8.1.

Table 9.2.2.3: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

Table 9.2.2.4: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	77	375
		-3	180	475
2	PB3	-6	20	183
		-3	154	274
3	VA30	-6	15	187
		-3	162	284
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)			

Table 9.2.2.5: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{6,2,1,5}			
Maximum number of HARQ transmission		4			

Table 9.2.2.6: Minimum requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	295
		-3	463
2	PB3	-6	24
		-3	243
3	VA30	-6	35
		-3	251
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)		

Table 9.2.2.7: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	DBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

Table 9.2.2.8: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	70	369
		-3	171	471
2	PB3	-6	14	180
		-3	150	276
3	VA30	-6	11	184
		-3	156	285
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.2.2.9: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	116	563
		-3	270	713
2	PB3	-6	30	275
		-3	231	411
3	VA30	-6	23	281
		-3	243	426
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

The reference for this requirement is TS 25.101 [1] clauses 9.2.2.1, 9.2.2.2 and 9.2.2.3.

9.2.2.3 Test purpose

To verify the ability of the receiver to receive a predefined test signal, representing a multi-path fading channel with information bit throughput R not exceeding a specified value. The test stresses the multi-code reception and channel decoding with incremental redundancy.

9.2.2.4 Method of test

9.2.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1. Connect the SS (Note: This is the Node B Emulator) and fader and AWGN noise source to the UE antenna connector as shown in figure A.19~~6~~.

2. Set the test parameters for test as specified in tableís 9.2.2.11, 9.2.2.13 and 9.2.2.15 and levels as specified in tables 9.2.2.12, 9.2.2.14, 9.2.2.16 and 9.2.2.17. Setup fading simulators as fading condition, which are described in table D.2.2.1A. ~~Power~~ The configuration of the downlink channels is defined in table E.5.2.

Table 9.2.2.10: Specific Message Contents for open-loop transmit diversity mode

SYSTEM INFORMATION BLOCK TYPE5

Information Element	Value/remark
PRACH system information list - AICH info - STTD Indicator	 TRUE
Secondary CCPCH system information - PICH info - STTD Indicator - Secondary CCPCH info - STTD Indicator	 TRUE TRUE
Primary CCPCH info - CHOICE mode - TX Diversity indicator	 FDD TRUE

RRC CONNECTION SETUP

Information Element	Value/remark
Downlink information common for all radio links - CHOICE mode - TX Diversity Mode	 FDD STTD
Downlink DPCH info for each RL - CHOICE mode - Downlink DPCH info for each RL - Closed loop timing adjustment mode	 FDD 1

RADIO BEARER SETUP

Information Element	Value/remark
Downlink information common for all radio links - CHOICE mode - TX Diversity Mode	 FDD STTD
Downlink DPCH info for each RL - CHOICE mode - Downlink DPCH info for each RL - Closed loop timing adjustment mode	 FDD 1

9.2.2.4.2 Procedure

1. Set up a HSDPA connection according to the generic HSDPA set-up procedure specified in TS 34.108 [3].

2. Start transmitting HSDPA Data.

3. The information bit data shall be pseudo random and not repeated before 10 different information bit payload blocks are processed. (e.g. Fixed reference Channel Definition H-set 1 (16 QAM): The information bit payload block is 4664 bits long. Hence the PRBS must be at least 4664 * 10 bits long [27]).

4. Count the number of NACK, ACK and statDTX on the UL HS-DPCCH during the test interval and decide pass or fail according to Annex F.6.3 tables F.6.3.5.3.1, F.6.3.5.3.2, F.6.3.5.3.3 and F.6.3.5.3.4. ACK is counted as a pass. NACK and statDTX are counted as a failure.

9.2.2.~~4.3~~5 Test Requirements

The parameters and requirements are specified in tableís 9.2.2.11 to 9.2.2.17. The pass / fail decision for throughput is done according to Annex F.6.3.

Table 9.2.2.11: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	DBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

Table 9.2.2.12: ~~Minimum~~ Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	77	375
		-3	180	475
2	PB3	-6	20	183
		-3	154	274
3	VA30	-6	15	187
		-3	162	284
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)			

Table 9.2.2.13: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{6,2,1,5}			
Maximum number of HARQ transmission		4			

Table 9.2.2.14: ~~Minimum~~ Test requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c/I_{or} **(dB)**	**T-put** R **(kbps) *** $\hat{I}_{or}/I_{oc}$ **= 10 dB**
1	PA3	-6	295
		-3	463
2	PB3	-6	24
		-3	243
3	VA30	-6	35
		-3	251
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)		

Table 9.2.2.15: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	DBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

Table 9.2.2.16: ~~Minimum~~ Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} **(dB)**	**T-put** R **(kbps) *** $\hat{I}_{or}/I_{oc}$ **= 0 dB**	**T-put** R **(kbps) *** $\hat{I}_{or}/I_{oc}$ **= 10 dB**
1	PA3	-6	70	369
		-3	171	471
2	PB3	-6	14	180
		-3	150	276
3	VA30	-6	11	184
		-3	156	285
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 4			

Table 9.2.2.17: ~~Minimum~~ Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} **(dB)**	**T-put** R **(kbps) *** $\hat{I}_{or}/I_{oc}$ **= 0 dB**	**T-put** R **(kbps) *** $\hat{I}_{or}/I_{oc}$ **= 10 dB**
1	PA3	-6	116	563
		-3	270	713
2	PB3	-6	30	275
		-3	231	411
3	VA30	-6	23	281
		-3	243	426
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 5			

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

9.2.3 Closed Loop Diversity Performance

9.2.3.1 Definition and applicability

The receiver single closed loop transmit diversity performance of the High Speed Physical Downlink Shared Channel (HS-DSCH) in multi-path fading environments are determined by the information bit throughput R.

The UE shall be tested only according to the data rate, supported. The data-rate corresponding requirements shall apply to the UE.

The requirements and this test apply to all types of UTRA for FDD UE that support HSDPA.

9.2.3.2 Minimum requirements

Requirements for a particular UE belonging to certain HS-DSCH category are determined according to Table 9.2.3.1. During the Fixed Reference Channel (FRC) tests the behaviour of the Node-B emulator in response to the ACK/NACK signalling field of the HS-DPCCH is specified in Table 9.2.3.2.

Table 9.2.3.1: Mapping between HS-DSCH category and FRC

HS-DSCH category	Corresponding requirement
Category 1	H-Set 1
Category 2	H-Set 1
Category 3	H-Set 2
Category 4	H-Set 2
Category 5	H-Set 3
Category 6	H-Set 3
Category 11	H-Set 4
Category 12	H-Set 5

Table 9.2.3.2: Node-B Emulator Behaviour in response to ACK/NACK/DTX

HS-DPCCH ACK/NACK Field State	Node-B Emulator Behaviour
ACK	ACK: new transmission using 1st redundancy version (RV)
NACK	NACK: retransmission using the next RV (up to the maximum permitted number or RVís)
DTX	DTX: retransmission using the RV previously transmitted to the same H-ARQ process

For the parameters specified in Tables 9.2.3.3, 9.2.3.5, 9.2.3.7 the requirements are specified in terms of minimum information bit throughput R as shown in Table 9.2.3.4, 9.2.3.6, 9.2.3.8, and 9.2.3.9 for QPSK and 16QAM and for the DL reference channels specified in Annex C.8.1.

Table 9.2.3.3: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference		P-CPICH		
I_{oc}	dBm/3.84 MHz	-60		
DPCH frame offset ($\tau_{DPCH,n}$)	Chip	0		
Redundancy and constellation version coding sequence		{0,2,5,6}		
Maximum number of HARQ transmission		4		
Feedback Error Rate	%	4		
Closed loop timing adjustment mode		1		

Table 9.2.3.4: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10 dB
1	PA3	-6	118	399
		-3	225	458
2	PB3	-6	50	199
		-3	173	301
3	VA30	-6	47	204
		-3	172	305
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integers) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)			

Table 9.2.3.5: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference		P-CPICH		
I_{oc}	dBm/3.84 MHz	-60		
DPCH frame offset ($\tau_{DPCH,n}$)	Chip	0		
Redundancy and constellation version coding sequence		{6,2,1,5}		
Maximum number of HARQ transmission		4		
Feedback Error Rate	%	4		
Closed loop timing adjustment mode		1		

Table 9.2.3.6 Minimum requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c/I_{or} **(dB)**	**T-put** R **(kbps) *** $\hat{I}_{or}/I_{oc}$ **= 10 dB**
1	PA3	-6	361
		-3	500
2	PB3	-6	74
		-3	255
3	VA30	-6	84
		-3	254
* Notes:	1)The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)		

Table 9.2.3.7: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference		P-CPICH		
I_{oc}	dBm/3.84 MHz	-60		
DPCH frame offset ($\tau_{DPCH,n}$)	Chip	0		
Redundancy and constellation version coding sequence		{0,2,5,6}		
Maximum number of HARQ transmission		4		
Feedback Error Rate	%	4		
Closed loop timing adjustment mode		1		

Table 9.2.3.8: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} **(dB)**	**T-put** R **(kbps) *** $\hat{I}_{or}/I_{oc}$ **= 0 dB**	**T-put** R **(kbps) *** $\hat{I}_{or}/I_{oc}$ **= 10 dB**
1	PA3	-6	114	398
		-3	223	457
2	PB3	-6	43	196
		-3	167	292
3	VA30	-6	40	199
		-3	170	305
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 4			

Table 9.2.3.9: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	177	599
		-3	338	687
2	PB3	-6	75	299
		-3	260	452
3	VA30	-6	71	306
		-3	258	458
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

The reference for this requirement is TS 25.101 [1] clauses 9.2.3.1, 9.2.3.2 and 9.2.3.3.

9.2.3.3 Test purpose

To verify the ability of the receiver to receive a predefined test signal, representing a multi-path fading channel with information bit throughput R not exceeding a specified value. The test stresses the multi-code reception and channel decoding with incremental redundancy.

9.2.3.4 Method of test

9.2.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

~~2.~~1. Connect the SS (Note: This is the Node B Emulator) and fader and AWGN noise source to the UE antenna connector as shown in figure A.19~~6~~.

2. Set the test parameters for tests as specified in tableís 9.2.3.11, 9.2.3.13 and 9.2.3.15 and levels as specified in tableís 9.2.3.12, 9.2.3.14, 9.2.3.16 and 9.2.3.17. Setup fading simulators as fading condition, which are described in table D.2.2.1A. The configuration ~~Power~~ of the downlink channels is defined in table E.5.3.

Table 9.2.3.10: Specific Message Contents for closed loop transmit diversity mode

SYSTEM INFORMATION BLOCK TYPE5

Information Element	Value/remark
PRACH system information list - AICH info - STTD Indicator	 TRUE
Secondary CCPCH system information - PICH info - STTD Indicator - Secondary CCPCH info - STTD Indicator	 TRUE TRUE
Primary CCPCH info - CHOICE mode - TX Diversity indicator	 FDD TRUE

RRC CONNECTION SETUP for Closed loop mode1

Information Element	Value/remark
Downlink information common for all radio links - CHOICE mode - TX Diversity Mode	 FDD Closed loop mode1
Downlink DPCH info for each RL - CHOICE mode - Downlink DPCH info for each RL - Closed loop timing adjustment mode	 FDD 1

RADIO BEARER SETUP for Closed loop mode1

Information Element	Value/remark
Downlink information common for all radio links - CHOICE mode - TX Diversity Mode	 FDD Closed loop mode1
Downlink DPCH info for each RL - CHOICE mode - Downlink DPCH info for each RL - Closed loop timing adjustment mode	 FDD 1

9.2.3.4.2 Procedure

1. Set up a HSDPA connection according to the generic HSDPA set-up procedure specified in TS 34.108 [3].
2. Start transmitting HSDPA Data.
3. The information bit data shall be pseudo random and not repeated before 10 different information bit payload blocks are processed. (e.g. Fixed reference Channel Definition H-set 1 (16 QAM): The information bit payload block is 4664 bits long. Hence the PRBS must be at least 4664 * 10 bits long [26].)
4. Count the number of NACK, ACK and statDTX on the UL HS-DPCCH during the test interval and decide pass or fail according to Annex F.6.3 tables F.6.3.5.4.1, F.6.3.5.4.2, F.6.3.5.4.3 and F.6.3.5.4.4.. ACK is counted as a pass. NACK and statDTX are counted as a failure.

9.2.3.5~~4.3~~ Test Requirements

The parameters and requirements are specified in tableís 9.2.3.11 to 9.2.3.17. The pass / fail decision for throughput is done according to Annex F.6.3.

Table 9.2.3.11: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference		P-CPICH		
I_{oc}	dBm/3.84 MHz	-60		
DPCH frame offset ($\tau_{DPCH,n}$)	Chip	0		
Redundancy and constellation version coding sequence		{0,2,5,6}		
Maximum number of HARQ transmission		4		
Feedback Error Rate	%	4		
Closed loop timing adjustment mode		1		

Table 9.2.3.12: ~~Minimum~~ Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10 dB
1	PA3	-6	118	399
		-3	225	458
2	PB3	-6	50	199
		-3	173	301
3	VA30	-6	47	204
		-3	172	305
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integers) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)			

Table 9.2.3.13: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference		P-CPICH		
I_{oc}	dBm/3.84 MHz	-60		
DPCH frame offset ($\tau_{DPCH,n}$)	Chip	0		
Redundancy and constellation version coding sequence		{6,2,1,5}		
Maximum number of HARQ transmission		4		
Feedback Error Rate	%	4		
Closed loop timing adjustment mode		1		

Table 9.2.3.14 ~~Minimum~~ Test requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10 dB
1	PA3	-6	361
		-3	500
2	PB3	-6	74
		-3	255
3	VA30	-6	84
		-3	254
* Notes:	1)The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)		

Table 9.2.3.15: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference		P-CPICH		
I_{oc}	dBm/3.84 MHz	-60		
DPCH frame offset ($\tau_{DPCH,n}$)	Chip	0		
Redundancy and constellation version coding sequence		{0,2,5,6}		
Maximum number of HARQ transmission		4		
Feedback Error Rate	%	4		
Closed loop timing adjustment mode		1		

Table 9.2.3.16: ~~Minimum~~ Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10 dB
1	PA3	-6	114	398
		-3	223	457
2	PB3	-6	43	196
		-3	167	292
3	VA30	-6	40	199
		-3	170	305
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.2.3.17: ~~Minimum~~ Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10 dB
1	PA3	-6	177	599
		-3	338	687
2	PB3	-6	75	299
		-3	260	452
3	VA30	-6	71	306
		-3	258	458
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4

Annex A (informative): Connection Diagrams

Definition of Terms

System Simulator or SS ñ A device or system, that is capable of generating simulated Node B signalling and analysing UE signalling responses on one or more RF channels, in order to create the required test environment for the UE under test. It will also include the following capabilities:

1. Measurement and control of the UE Tx output power through TPC commands
2. Measurement of Rx BLER and BER
3. Measurement of signalling timing and delays
4. Ability to simulate UTRAN and/or GERAN signalling

Test System ñ A combination of devices brought together into a system for the purpose of making one or more measurements on a UE in accordance with the test case requirements. A test system may include one or more System Simulators if additional signalling is required for the test case. The following diagrams are all examples of Test Systems.

Note: The above terms are logical definitions to be used to describe the test methods used in this document (TS34.121), in practice, real devices called 'System Simulators' may also include additional measurement capabilities or may only support those features required for the test cases they are designed to perform.

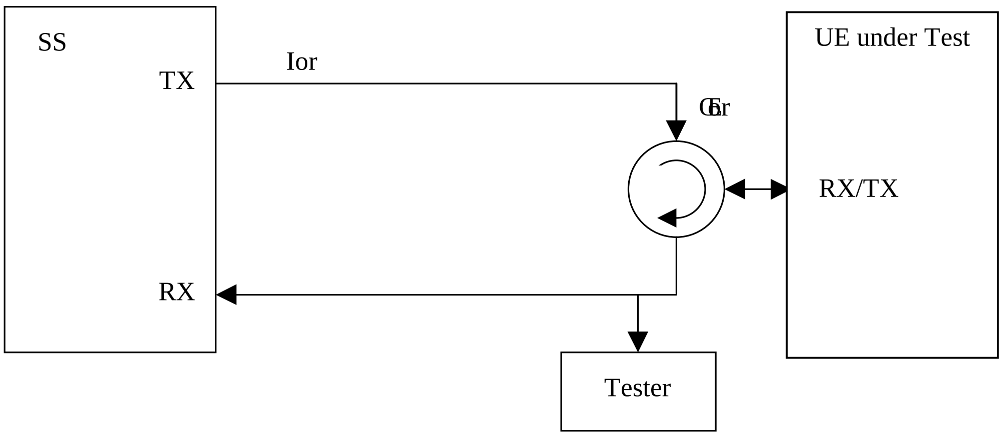

Figure A.1: Connection for Basic TX Test

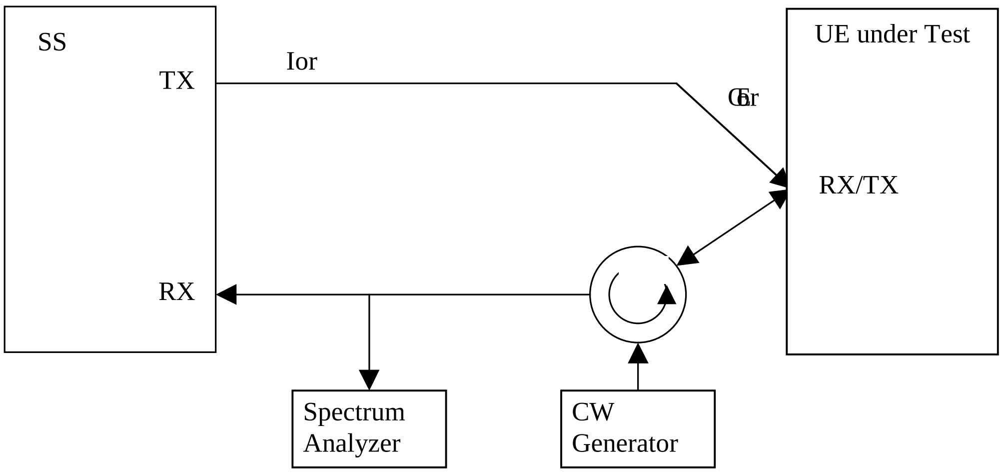

Figure A.2: Connection for TX Intermodulation Test

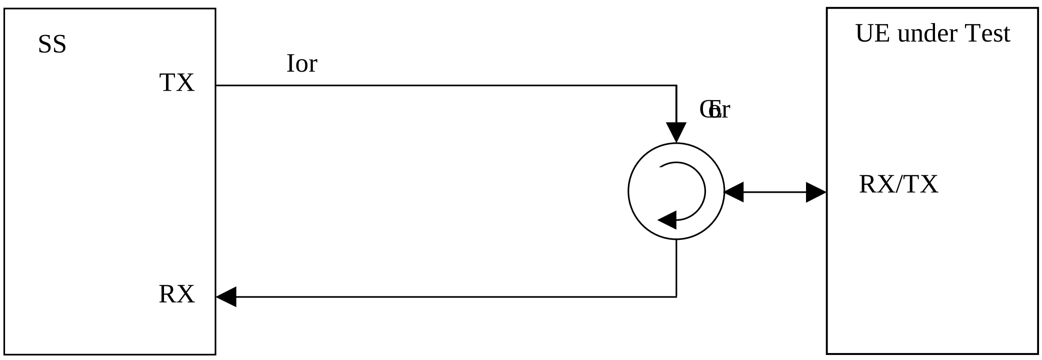

Figure A.3: Connection for Basic RX Test

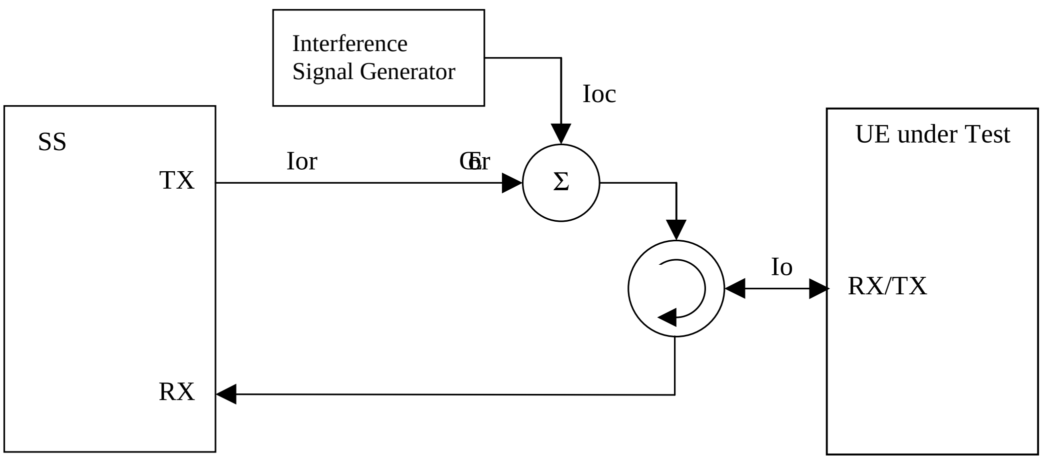

Figure A.4: Connection for RX Test with Interference

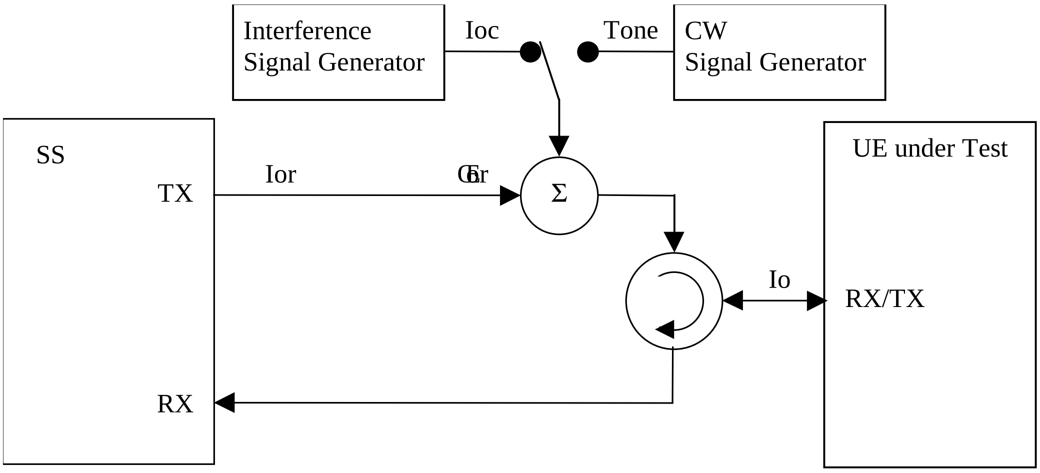

Figure A.5: Connection for RX Test with Interference or additional CW

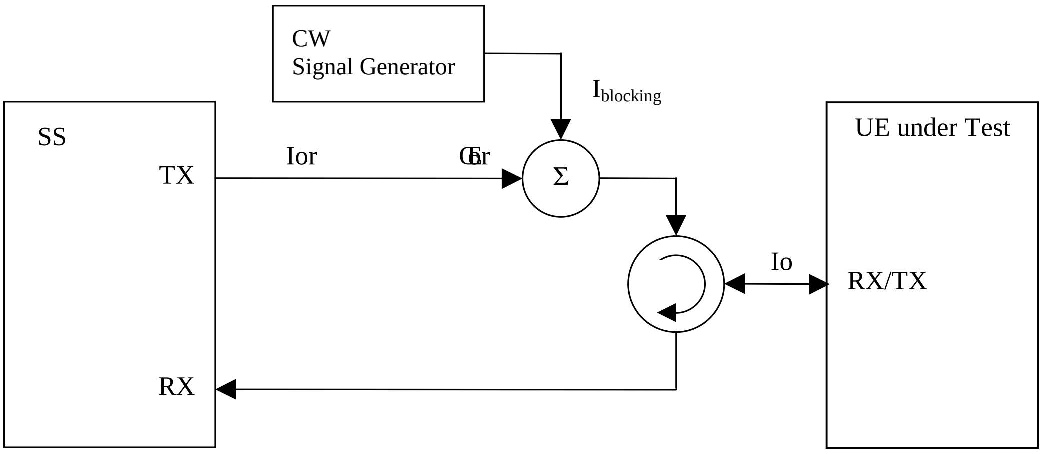

Figure A.6: Connection for RX Test with additional CW

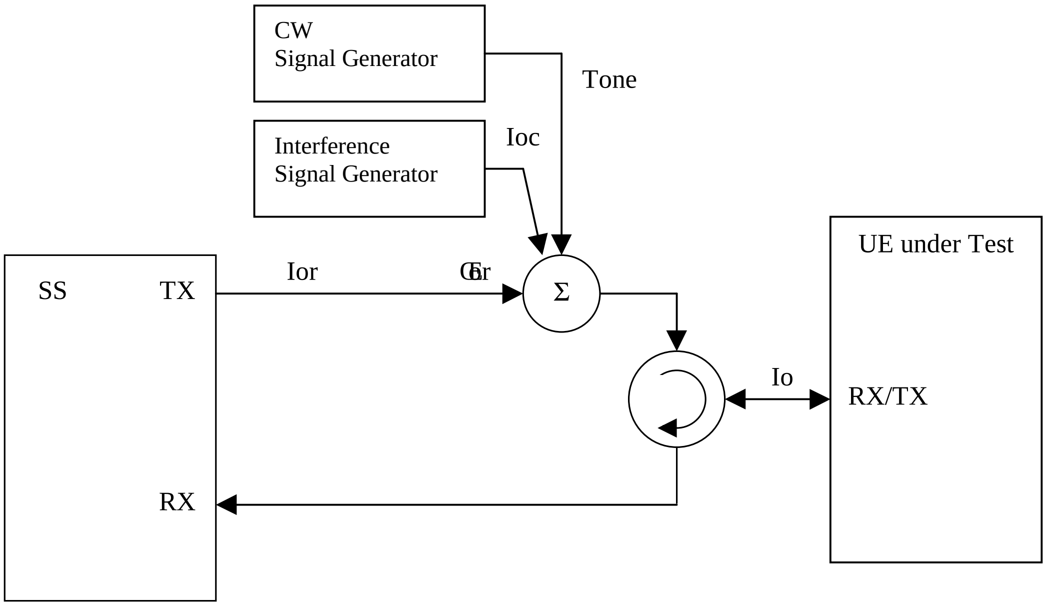

Figure A.7: Connection for RX Test with both Interference and additional CW

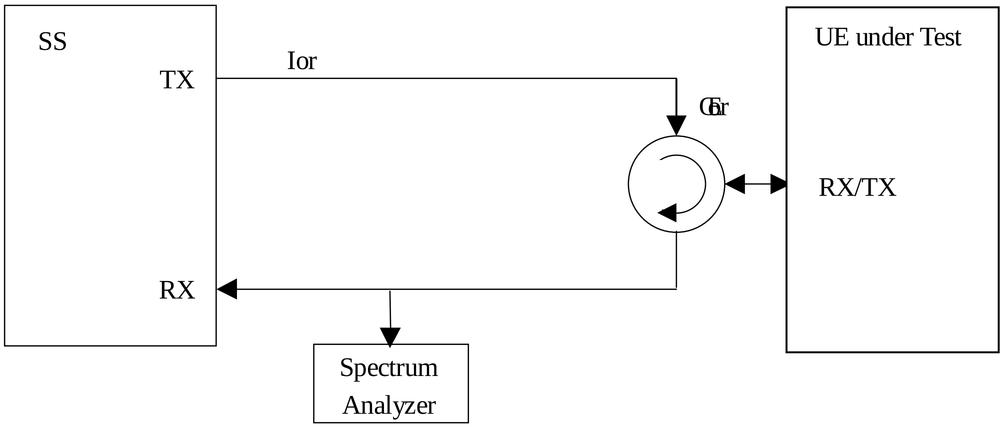

Figure A.8: Connection for Spurious Emission Test

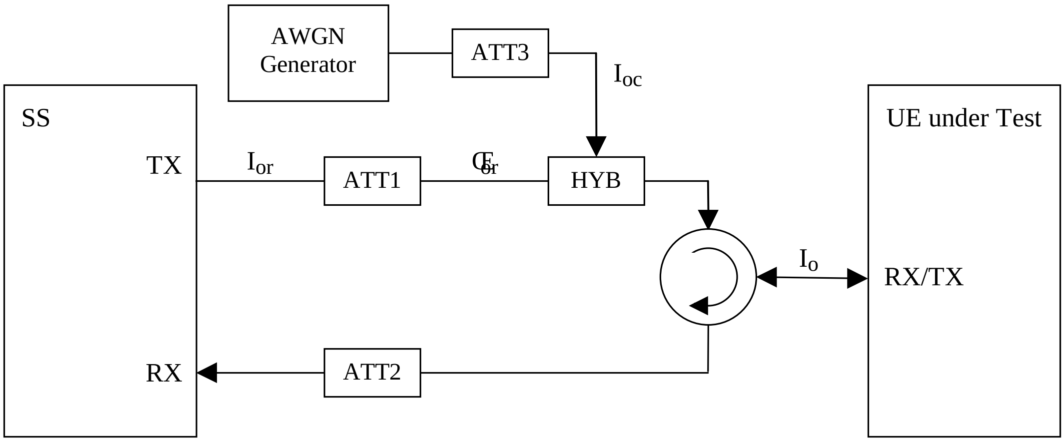

Figure A.9: Connection for Static Propagation Test

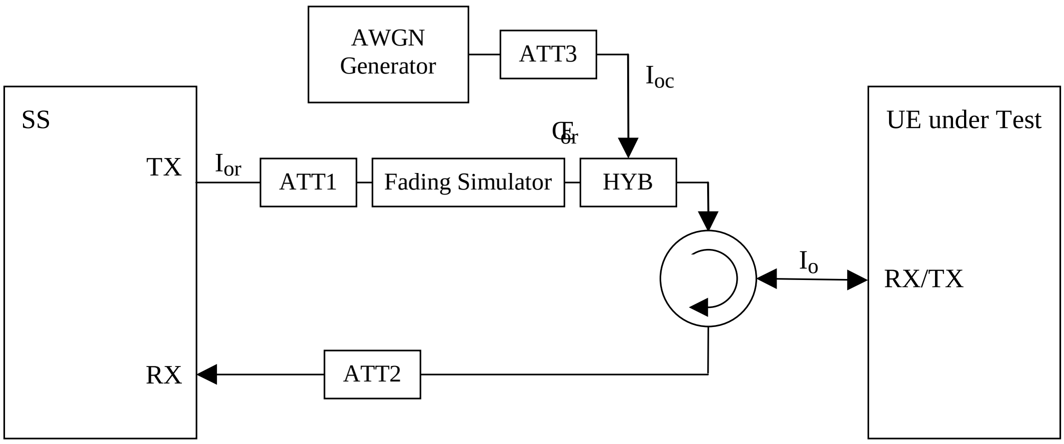

Figure A.10: Connection for Multi-path Fading Propagation Test

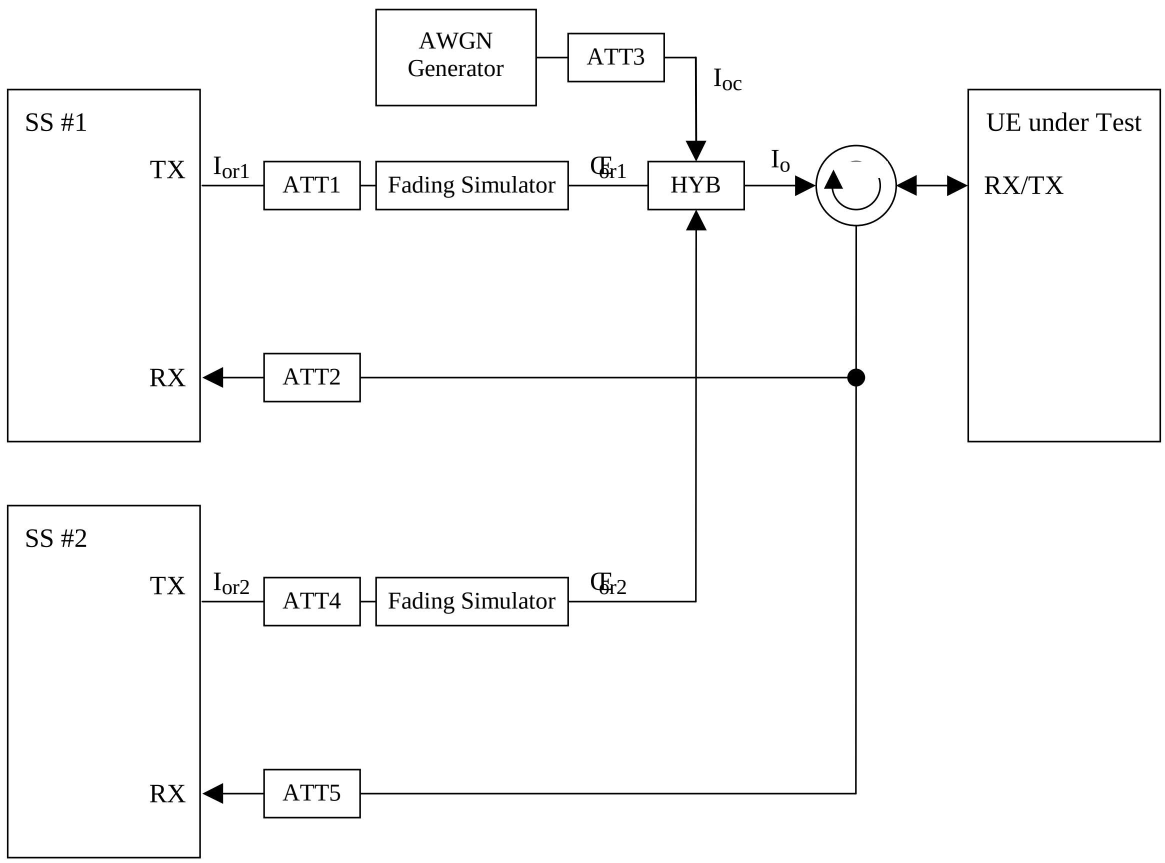

Figure A.11: Connection for Inter-Cell Soft Handover Test

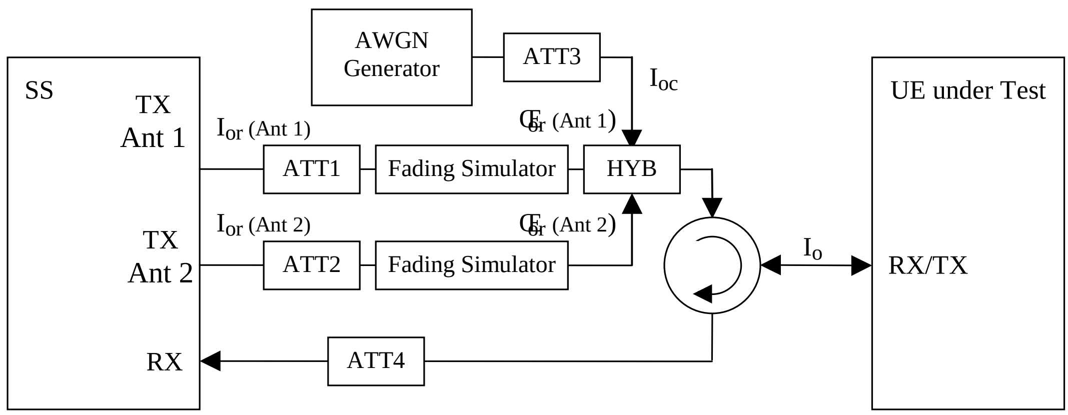

Figure A.12: Connection for Demodulation of DCH in open and closed loop transmit diversity modes

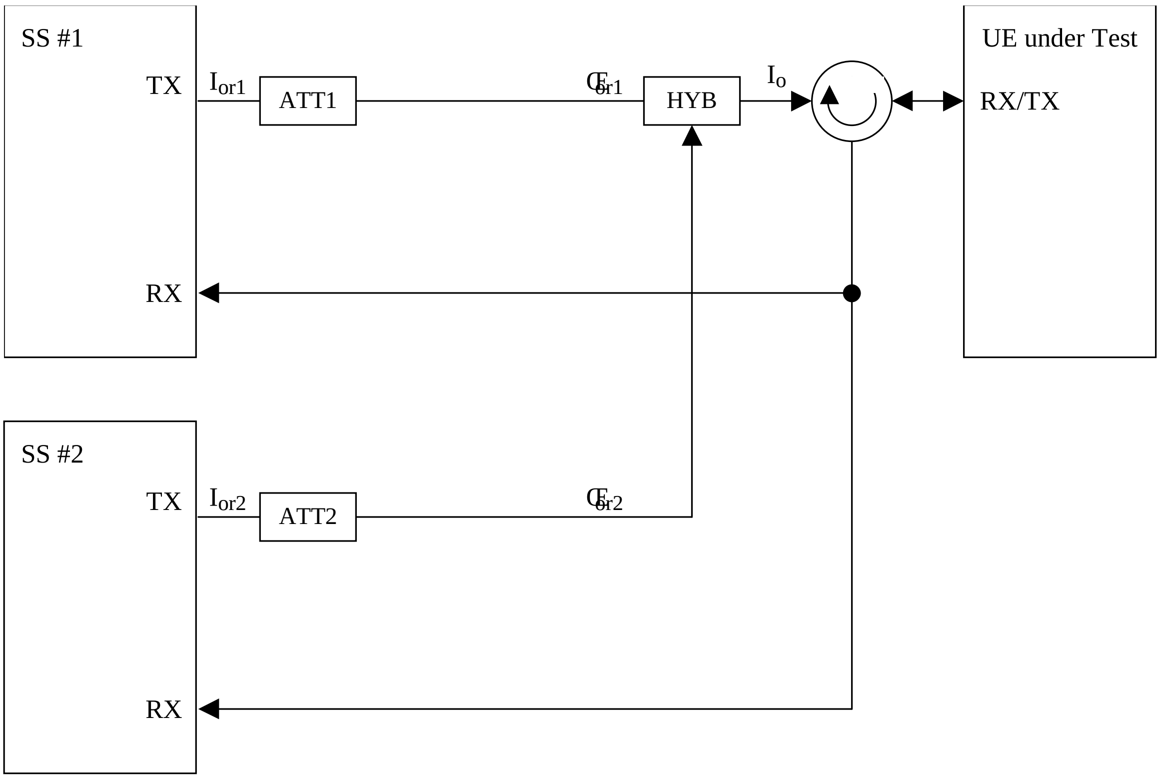

Figure A.13: Connection for Combining of TPC commands in Soft Handover Test 1

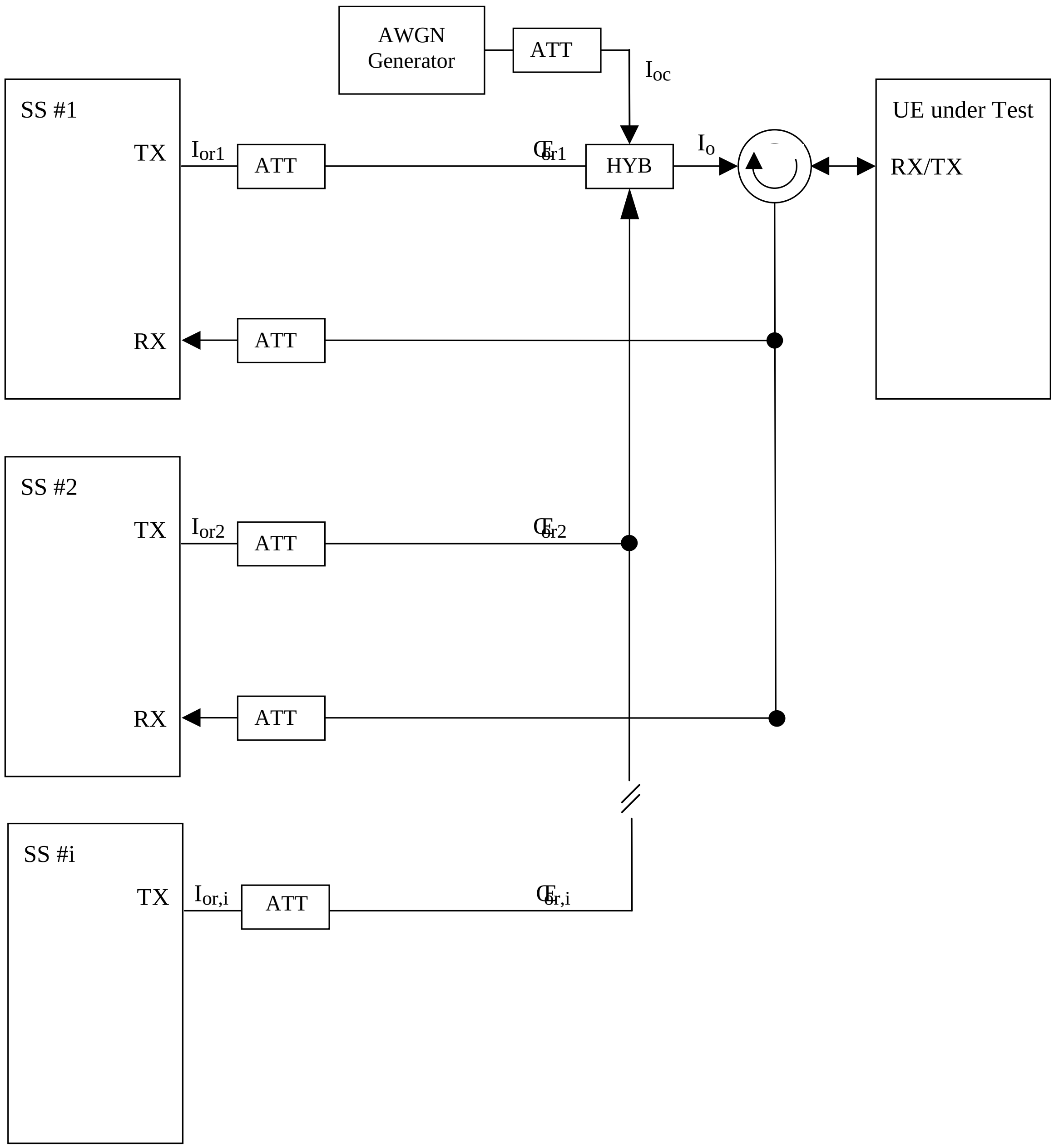

Figure A.14: Connection for cell reselection single carrier multi cell

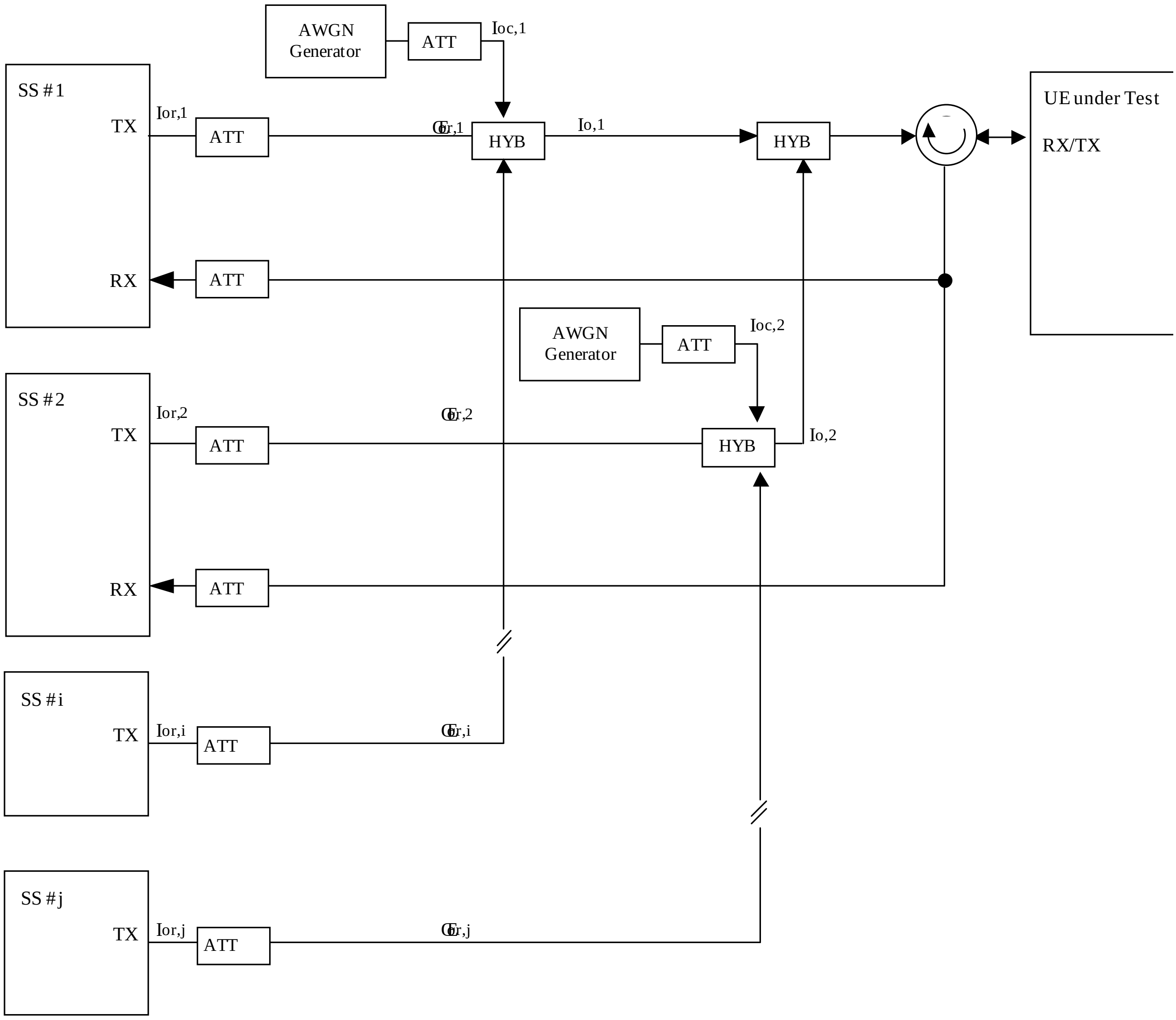

Figure A.15: Connection for cell reselection multi carrier multi cell

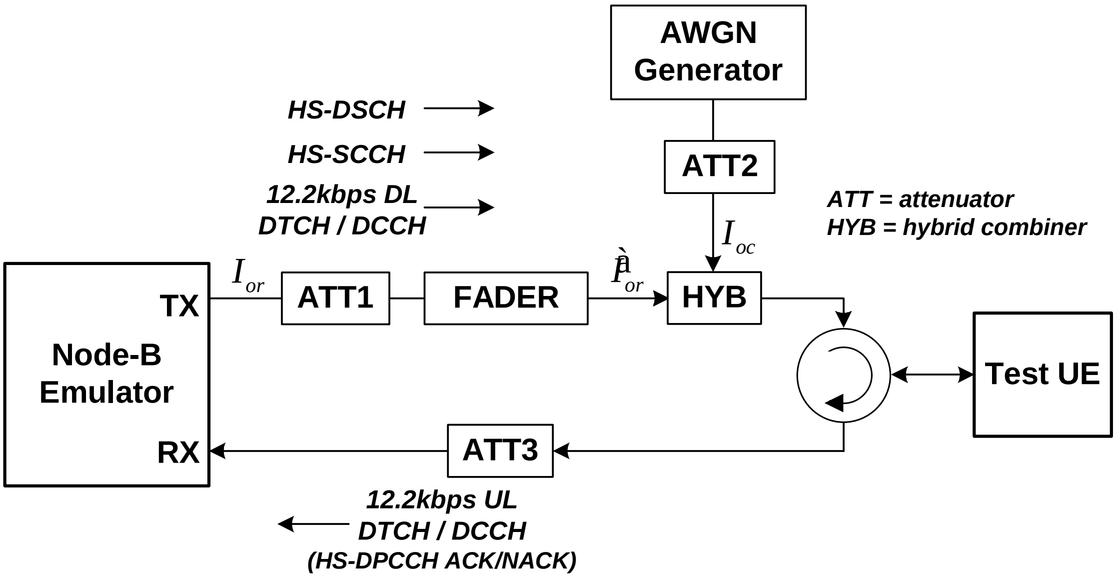

Figure A.16: Connection setup for HSDPA fixed reference channel

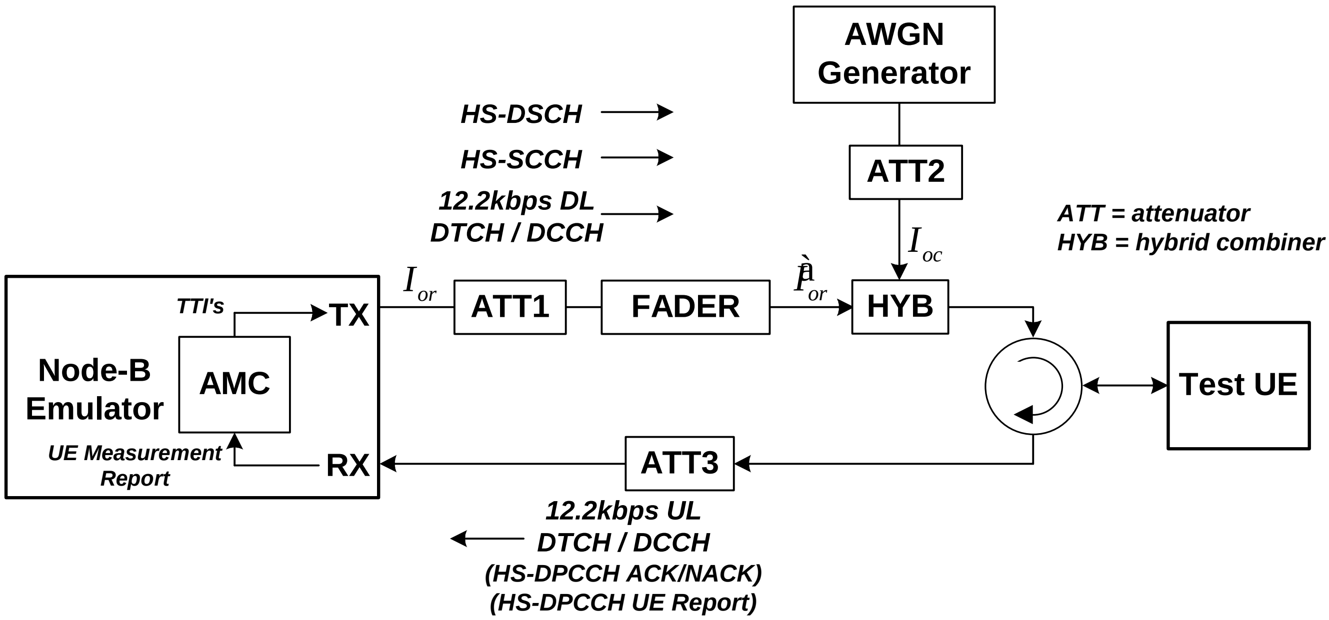

Figure A.17: Connection setup for HSDPA fixed reference channel with AMC~~Reporting of Channel Quality Indicator~~

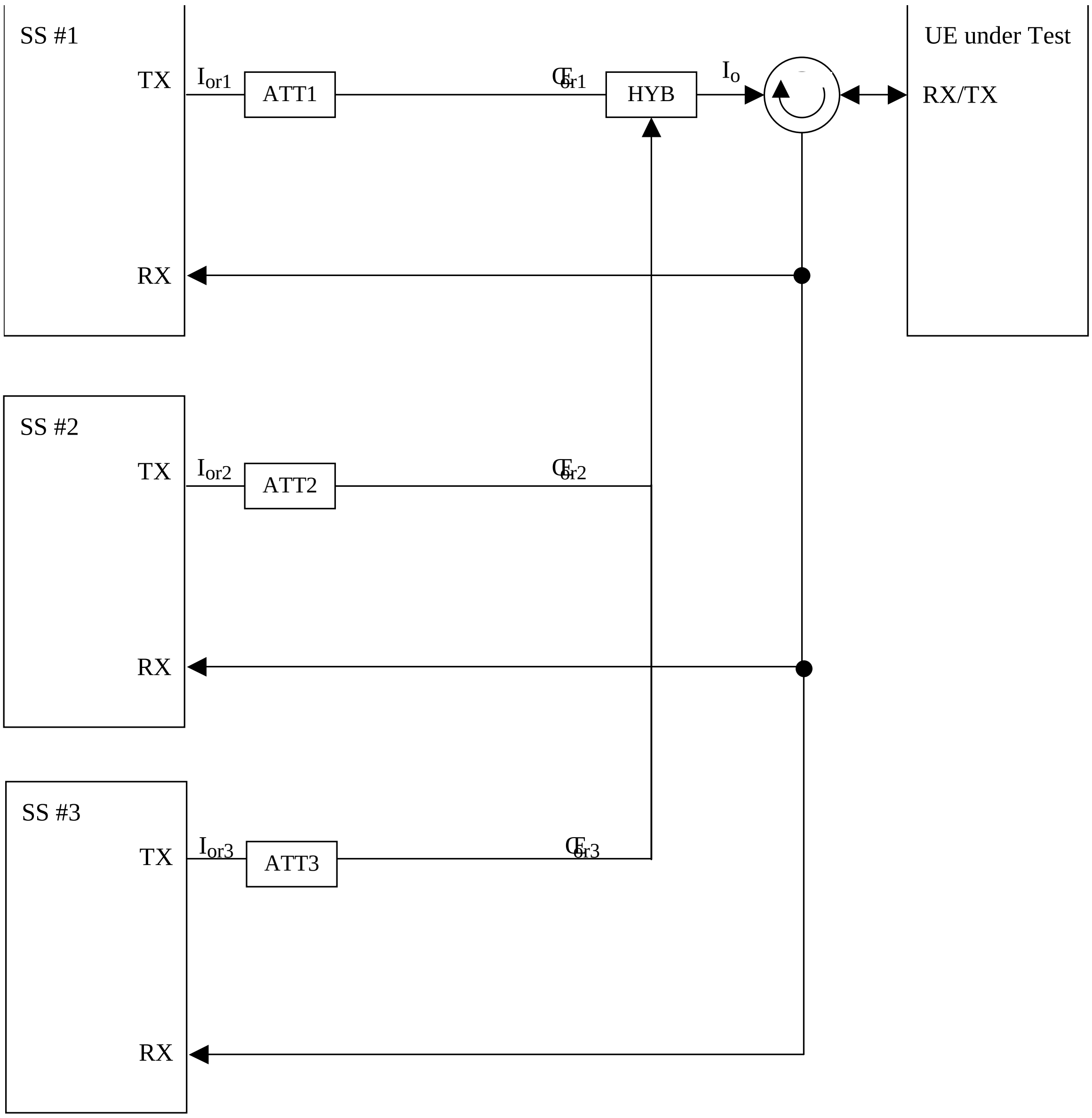

Figure A.18: Connection for Combining of reliable TPC commands in Soft Handover Test 1

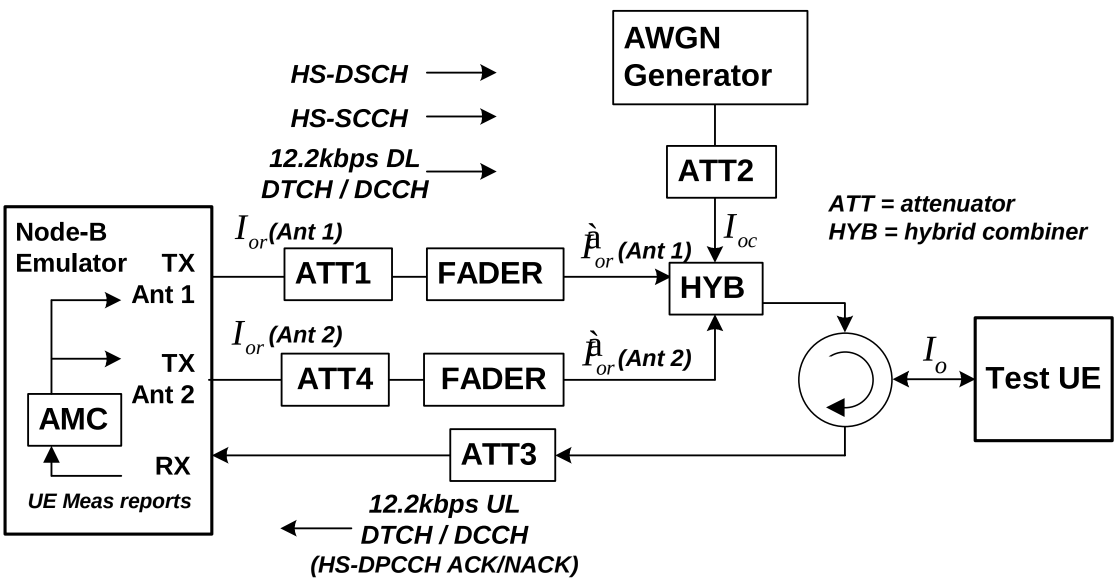

Figure A.19: Connection setup for HSDPA open and closed loop diversity

F.6.3 Statistical Testing of HSDPA Receiver Performance

F.6.3.1 Definition

Information Bit Throughput R:
The measured information bit throughput R is defined as the sum (in kilobits) of the information bit payloads (excluding the 24-bit HS-DSCH CRC) successfully received during the test interval, divided by the duration of the test interval (in seconds).

F.6.3.2 Mapping throughput to block error ratio

a) In measurement practice the UE indicates successfully received information bit payload by signalling an ACK to the SS.
If payload is received, but damaged and cannot be decoded, the UE signals a NACK.
b) Only the ACK and NACK signals, not the data bits received, are accessible to the SS.
The number of bits is known in the SS from knowledge of what payload was sent.
c) For fixed reference channel the number of bits in a TTI is fixed during one test.
d) The time in the measurement interval is composed of successful TTIs (ACK) , unsuccessful TTIs (NACK) and DTX-TTIs.
e) DTX-TTIs occur regularly according to the H-set. (regDTX).
In real live this is the time when other UEs are served.
regDTX vary from test to test but are fixed within the test.
f) Additional DTX-TTIs occur statistically when the UE is not responding ACK or NACK where it should. (statDTX)
This may happen when the UE was not expecting data or decided that the data were not intended for it.

The pass fail decision is done by observing the
number of NACKs
number of ACKs and
number of statDTXs
(regDTX is implicitly known to the SS)
The ratio: (NACK + statDTX) / (NACK+ statDTX +ACK) is the Bock Error Ratio BLER.
Taking into account the time, consumed by the ACK-, NACK-, and DTX-TTIs (regular and statistical), BLER can be mapped unambiguously to throughput for any single FRC test.

F.6.3.3 Bad DUT factor

Note: Data throughput in a communication system is of statistical nature and must be measured and decided pass or fail. The specified limit of throughput related to the ideal throughput in different throughput tests is in the range of a few % to near 100%. To make it comparable with BER, we define the complement of the relative throughput: BLER as defined above. Complementary this is in the range of near 100% down to a few % For e.g. BLER = 1%, the currently in BER BLER used Bad DUT factor M=1.5 is highly meaningful. For e.g. BLER = 99%, the currently used M=1.5 obviously meaningless.

An appropriate definition of the bad DUT factor is illustrated in figure F.6.3.3: constant and variable Bad DUT factor.

It illustrates how to find the Bad BLER when the nominal BLER is given.

1) In the range 0%< nominal BLER>10% the Bad DUT factor is constant 1.5

2) In the range 90%< bad BLER>100% it decreases to 1. (symmetrical to (1))

3) The range in between is interpolated by an arc section.

The example shows: nominal BLER=35,6% → bad BLER=47.67.5% → M=1.34

(blue mapping)

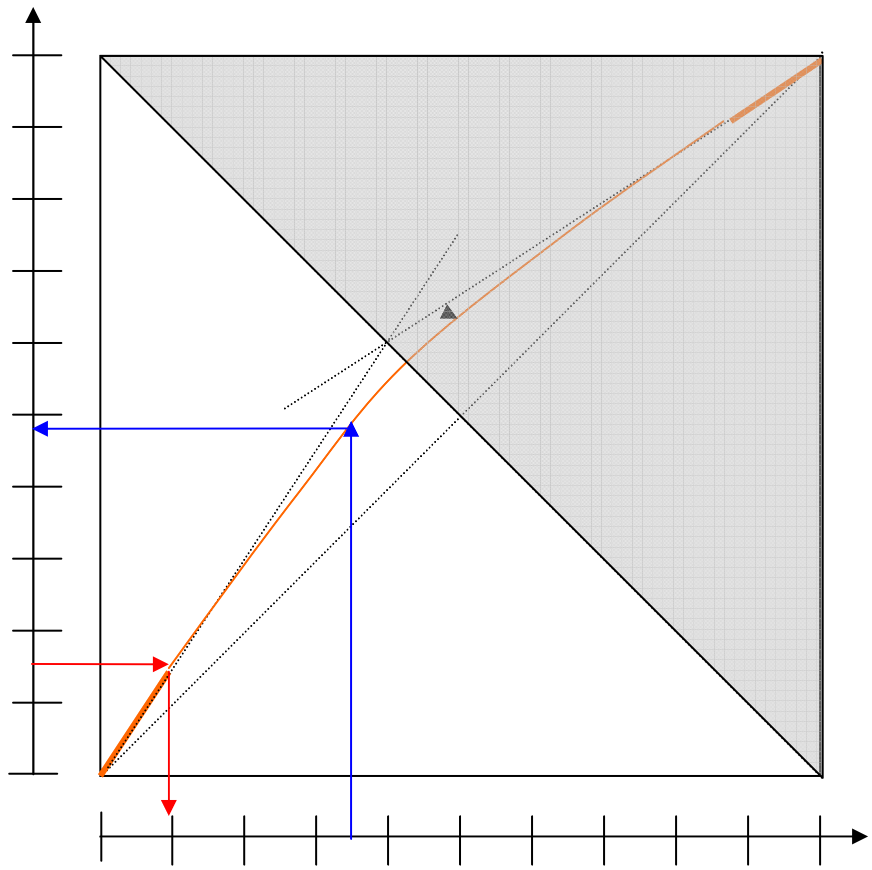

Figure F.6.3.3: constant and variable Bad DUT factor

Formula: For $0 < BLER <= 0.1$: $M = 1.5$

For $0.1 < BLER < .9$:

$$M(BLER) := \frac{\sqrt{r^2 - (BLER - 2.35)^2}}{BLER} - \frac{1.35}{BLER}$$

For $0.9 <= BLER < 1$: $M(BLER) = 2/3BLER + 1/3$

With BLER: nominal Block Error Ratio (0<BLER<1)

With r = 2.70415 (Radius of the arc)

F.6.3.3.1 Bad DUT factor, range of applicability

Inaccuracy is one practical reason to avoid the grey shaded area of figure F.6.3.3: constant and variable Bad DUT factor. For BLER near 1 the Bad DUT factor M is near 1. For M=1,exactly, the pass and fail criteria do not intersect. The test never is finalised.

For M near 1 the pass and fail criteria exhibit a very smooth intersection. In addition the binomial distribution and its inverse are of discrete nature. Therefore the test limit and the number of samples is calculable only very ambiguous.

It is proposed to apply the bad DUT factor only in the not shaded area of figure F.6.3.3.

This is done by the following:

BLER mode:

Use BLER as defined above in the range of 0 to 50%, use M >1 as defined above.

The Test Limit will be > the Test Requirement in the table F.6.3.5. below.

Relative Throughput mode:

If BLER is in the range 50 to 100%, use 1-BLER instead. Use m<1 instead of M.

1-BLER is the relative throughput with respect to the ideal throughput.

As a consequence, the Test Limit < Test Requirement

Formula for m: For 0 < (1-BLER) <= 0.15: m = 1/1.5

For 0.15 <(1-BLER) <.85:

$$m := \frac{2.35 - \sqrt{r^2 - [(1 - BLER) + 1.35]^2}}{(1 - BLER)}$$

In the figure F.6.3.3: this is represented by the red mapping.

The tables F.6.3.5. below distinguishe between m and M.

F.6.3.4 Minimum Test time

Same as with BER BLER there is a minimum test time is necessary for multipath fading profiles with the same justification:

profile	Minimum Test time
PA3, PB3	164s

VA30	16.4s
VA 120	4.1s

F.6.3.5 Applicability and characteristics of the Tables F.6.3.5.

The purpose of tables F.6.3.5.1 to F.6.3.5.4 is to decide throughput pass or fail.

(the Ior/Ioc levels are only for reference)

Meaning of a decision:

A passed DUT is not worse than a Bad DUT with 95%confidence level.

A failed DUT is not better than a Limit DUT with 95%confidence level.

The minimum Test Time is

1) the minimum test time due to statistical reasons

(To ensure the confidence level, the test must be continued until a certain number of samples (NACK+ statDTX +ACK) is reached.)

2) the minimum test time due to multipath fading.

The longer test time applies. It is marked in table F.6.3.5. which one applies.

Statistical independence:

If a process works within an incremental redundancy sequence, the samples are not independent. The incremental redundancy sequence for every process must be finalised, successfully or unsuccessfully, on or beyond the minimum test time.

Then the BLER (or 1-BLER) is compared with the Test Limit to decide pass or fail.

Note: It is FFS, if correlation within groups of retransmissions may influence the confidence level of the test.

Formula:

The theory, to derive the minimum number of samples and the Test Limit, takes into consideration that BLER is in the range of near 0% to near 100%. Hence it is based on the binomial distribution and its inverse cumulative function: qbinom:

For the BLER test mode:

ne_{low}=qbinom(D,ns,M*$BLER_{limit}$) (1)

ne_{high}=qbinom(1-D,ns,$BLER_{limit}$) (2)

given: 1-D: confidence level= 95%

$BLER_{limit}$=Block error ratio at the limit

M: Bad DUT factor >1

Input: ns: number of samples (NACK+ statDTX + ACK)

Output ne: number of events (NACK+ statDTX)

The intersection of (1) and (2) is the Test Limit with the coordinates: ns and ne

For the Relative Throughput test mode:

ne_{low}=qbinom(D,ns,1-$BLER_{limit}$) (3)

ne_{high}=qbinom(1-D,ns,m*(1-$BLER_{limit}$)) (4)

given: 1-D: confidence level= 95%

1-$BLER_{limit}$= Relative Throughtput at the limit

m: Bad DUT factor <1

Input: ns: number of samples (NACK+ statDTX + ACK)

Output ne: number of events (ACK)

The intersection of (3) and (4) is the Test Limit with the coordinates: ns and ne

Note:In contrast to BER BLER test, this approach does not contain any test time optimisation.

(early pass, early fail)

Nomenclature used in the tables F.6.3.5Ö below:

NACK+ statDTX + ACK is summarised as No of samples
NACK+ statDTX is summarised as No of errors
ACK is summarised as No of successes
In the BLER test mode the ratio: No of errors/ No of samples is recorded. In this mode a pass is below the test limit
In the Relative Throughput test mode (1-BLER) the ratio: No of successes/ No of samples is recorded. In this mode a pass is above the test limit
The test mode, used, is indicated in the rightmost column with BL or RT
The transition from the BL to the RT test mode can also be seen in the column relative test requirement: BLER%→ (1-BLER%)
The generic term for No of errors (BLER mode) or No of successes (Relative Throughput mode) is No of events. This is used in the table column Test Limit.

Table F.6.3.5.1 Maximum Input Level for HS-PDSCH Reception (16QAM)

Maximum Input Level for HS-PDSCH Reception (16QAM) 16 QAM H-Set 1	Absolute Test requirement (kbps)	Relative test requirement (normalized to ideal=777 kbps) No of events/No of samples in %	Test limit expressed as No of events/min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory if applicable	Test time in s Mandatory if fading Informative and approx. if statistical	BL / RT
	700	10%	58/467 (M=1.5)	467 (≤58)	2.8s (stat)	BL

~~Table~~ Table F.6.3.5.2.1 Single link performance for test case 9.2.1 demodulation of HS-DSCH

Single link performance QPSK H-Set 1,2,3	Absolute Test requirement (kbps)		Relative Test requirement (normalized to ideal=534kbps) No of events / No of samples in %	Test limit expressed as No of events / min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory, if applicable	Test time in s Mandatory if fading, Informative and approx. if statistical	BL / RT
Test1 (Ior/Ioc=0dB)	PA3	65	87,82%→ (12.18%)	60/595 (m = 1 / 1.5)	N.A.	164s (fading)	RT
							RT
	PB3	23	95.69% → (4.31%)	64/1796 (m = 1/1.5)	N.A	164s (fading)	RT
		138	74.14%→ (25.86%)	58/268 (m = 0.682)	N.A.	164s(fading)	RT
	VA30	22	95.9%→ (4.1%)	64/1888 (1/1.5)	N.A.	16.4s(fading)	RT
		142	73.4%→ (26.6%)	59/264 (m = 0.684)	N.A.	16.4s(fading)	RT

	VA120	13	97.564%→ (2.436%)	63/3224 (m = 1/1.5)	3224 (≥63)	H-set 1: 19.5s(stat) H-set 2: 13s (stat) H-set 3: 6.5s (stat)	R T
		140	(73.77)→ 26.23%	59/268 (m = 0.683)	N.A.	4.1s(fading)	R T
	Absolute Test requirement (kbps)		Relative Test requirement (normalized to ideal=534kbps) No of events / No of samples in %	Test limit expressed as No of events / min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory, if applicable	Test time in s Mandatory if fading, Informative and approx. if statistical	
Test1 (Ior/Ioc=10dB)	PA3	309	42.1%	83/171 (M = 1.295)	N.A.	164s (fading)	B L
		423	20.74%	60/237 (M = 1.445)	N.A.	164s (fading)	B L
	PB3	181	66.1%→ (33.9%)	62/215 (m = 0.703)	N.A	164s (fading)	R T
		287	46.22%→ (53,78%)	84/176 (m = 0.77)	N.A.	164s(fading)	R T
	VA30	190	64.4%→ (35.6%)	64/211 (m = 0.708)	N.A.	16.4s(fading)	R T
		295	44.72% → 55.28%	85/173 (m = 0.775)	N.A.	16.4s(fading)	R T
	VA120	181	(66.1%)→ 33.9%	62/215 (m = 0.703)	N.A.	4.1s(fading)	R T
		275	(48.5%)→ 51.5%	79/174 (m = 0.761)	N.A.	4.1s(fading)	R T

Table F.6.3.5-.2.2 Single link performance for test case 9.2.1 demodulation of HS-DSCH

Single link performance 16 QAM H-Set 1,2,3	Absolute Test requirement (kbps)		Relative Test requirement (normalized to ideal=777 kbps) No of events / No of samples in %	Test limit expressed as No of events / min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory, if applicable	Test time in s Mandatory if fading, Informative and approx. if statistical	BL / RT
Test1 (Ior/Ioc=10dB)	PA3	198	74.53%→ (25.47%)	58/272 (m=0.681)	N.A.	164s (fading)	RT
		368	52.66%→ (47.34%)	74/179 m=0.746	N.A.	164s(fading)	RT
	PB3	34	95.626% →(4.374%)	64/1770 (m=1/1.5)	N.A.	164s (fading)	RT
		219	71.83% →(28,17%)	58/240 (m=0.687)	N.A.	164s (fading)	RT
	VA30	47	93.95% →(6.05%)	63/1259 (m=1/1.5)	N.A.	16.4s (fading)	RT
		214	72.47% →(27.53%)	59/255 (m=0.686)	N.A.	16.4s (fading)	RT
	VA120	28	96.4% →(3.6%)	64/2150 (m=1/1.5)	2150 (≥64)	12.9s H-set1 8.6s H-set2 4.3s Hset3 (stat)	RT
		267	64.5% →(35.5%)	57/319 (m=0.673)	N.A.	4.1s (fading)	RT

Table F.6.3.5.2-.3 Single link performance for test case 9.2.1 demodulation of HS-DSCH

Single link performance QPSK H-Set 4	Absolute Test requirement (kbps)		Relative Test requirement (normalized to ideal=534 kbps) No of events / No of samples in %	Test limit expressed as No of events / min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory, if applicable	Test time in s Mandatory if fading, Informative and approx. if statistical	BL/RT
Test1 (Ior/Ioc=0dB)	PA3	72	86.5% →(13.5%)	59/528 (m=1/1.5)	N.A.	164s (fading)	RT
	PB3	24	95.5% →(4.5%)	63/1695 (m=1/1.5)	N.A.	164s (fading)	RT
		142	73.4% → (26.6%)	59/264 (m=0.684)	N.A.	164s (fading)	RT
	VA30	19	96.44% →(3.56%)	64/2176 (m=1/1.5)	N.A.	16.4s (fading)	RT
		148	72.27% →(27.73%)	59/253 (m=0.686)	N.A.	16.4s (fading)	RT
	VA120	11	98% →(2%)	65/3746 (m=1/1.5)	3746 (≥65)	22.5s (stat)	RT
		144	73% →(27%)	58/256 (m=0.684)	N.A.	4.1s (fading)	RT

Single link performance						
QPSK H-Set 4						
Single link performance	Absolute Test requirement (kbps)	Relative Test requirement (normalized to ideal=534 kbps) No of events / No of	Test limit expressed as No of events / min No of samples (Bad DUT factor)	Min No of samples (number of events to pass)	Test time in s Mandatory if fading,	BL / RT

QPSK H-Set 4			samples in %		Mandatory, if applicable	Informative and approx. if statistical	
Test1 (Ior/Ioc=10dB)	PA3	340	36.29%	75/177 (M=1.334)	N.A.	164s (fading)	BL
		439	17.74%	58/266 (M=1.468)	N.A.	164s (fading)	BL
	PB3	186	65.15% →(34.85%)	62/209 (m=0.705)	N.A.	164s (fading)	RT
		299	44%	87/174 (m=0.778)	N.A.	164s(fading)	RT
	VA30	183	65.7% →(34.3%)	63/216 (m=0.704)	N.A.	16.4s (fading)	RT
		306	42.66%	86/176 (M=1.291)	N.A.	16.4s (faging)	BL
	VA120	170	68,14% →(31.86%)	61/226 (m=697)	N.A.	4.1s (fading)	RT
		284	46.78% →(53.22%)	81/172 (m = 0.767)	N.A.	4.1s (fading)	RT

Table F.6.3.5.2.4 Single link performance for test case 9.2.1 demodulation of HS-DSCH

Single link performance QPSK H-Set 5	Absolute Test requirement (kbps)		Relative Test requirement (normalized to ideal=801 kbps) No of events / No of samples in %	Test limit expressed as No of events / min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory, if applicable	Test time in s Mandatory if fading, Informative and approx. if statistical	BL / RT
Test1 (Ior/Ioc=0dB)	PA3	98	87.76% →(12.24%)	59/583 (m=1/1.5)	N.A.	164s (fading)	RT
		221	72.4% →(27.6%)	58/250 (m=0.686	N.A.	164s (fading)	RT
	PB3	35	95.63% →(4.37%)	63/1746 (m=1/1.5)	N.A.	164s (fading)	RT
		207	74.14% →(25.86%)	58/268 (m=0.682)	N.A.	164s (fading)	RT
	VA30	33	95.88% →(4.12%)	64/1879 (m=1/1.5)	N.A.	16.4s (fading)	RT
		213	73.4% →(26.6%)	59/264% (m=0.684)	N.A.	16.2s (fading)	RT
	VA120	20	97.5% →(2.5%)	64/3101 (m=1/1.5)	3101 (≥64)	12.4s (stat)	RT
		210	73.77% →(26.23%)	59/268 (m=0.683)	N.A.	4.1s (fading)	RT

Single link performance QPSK H-Set 5	Absolute Test requirement (kbps)		Relative Test requirement (normalized to ideal=801 kbps) No of events / No of samples in %	Test limit expressed as No of events / min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory, if applicable	Test time in s Mandatory if fading, Informative and approx. if statistical	BL / RT
Test1 (Ior/Ioc=10dB)	PA3	464	42%	84/174 (M=1.295)	N.A.	164s (fading)	BL

		635	20.67%	59/234 (M=1.446)	N.A.	164s (fading)	BL
	PB3	272	66.02% →(33.98%)	63/218 (m=0.703)	N.A.	164s (fading)	
		431	46.16% →(53.84)	84/176 (m=0.77)	N.A.	164s(fading)	RT
	VA30	285	64.4% →(35.6%)	64/211 (m=0.708)	N.A.	16.4s (fading)	RT
		443	44.7% →(55.3%)	85/173 (m=0.775)	N.A.	16.4s(fading)	RT
	VA120	272	66.02% →(33.98%)	63/218 (m=0.703)	N.A.	4.1s (fading)	RT
		413	48.4% →(51.6%)	81/176 (m=0.761)	N.A.	4.1s(fading)	RT

Table F.6.3.5.3.1 Open Loop Diversity Performance for test case 9.2.2 demodulation of HS-DSCH

Open Loop Diversity Performance QPSK H-Set 1/2/3 Test number	Absolute Test requirement (kbps)		Relative test requirement (normalized to ideal=534 kbps) No of events/No of samples in %	Test limit expressed as No of events/min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory if applicable	Test time in s Mandatory if fading Informative and approx. if statistical	BL / RT
1 ($\hat{I}_{or} / I_{oc}$ = 0 dB)	PA3	77	85.57%→(14.43%)	58/486 (m=1/1.5)	N.A.	164s (fading)	RT
		180	66.27%→(33.73%)	62/216 (m=0.702)	N.A.	164s (fading)	RT
2 ($\hat{I}_{or} / I_{oc}$ = 0 dB)	PB3	20	96.25%→ (3.75%)	64/2065 (m=1/1.5)	N.A.	164s (fading)	RT
		154	71.14%→ (28,86%)	59/243 (m=0.689)	N.A.	164s (fading)	RT
3 ($\hat{I}_{or} / I_{oc}$ = 0 dB)	VA30	15	97.19% → (2.81%)	64/2758 (m=1/1.5)	H-Set 1: 2758 (≥64)	H-Set 2,3: 16.4s (fading) H-Set 1: 16.6s(stat.)	RT
		162	69.64%→ (30.36%)	60/235 (m=0.693)	N.A.	16.4s (fading)	RT
1 ($\hat{I}_{or} / I_{oc}$ = 10 dB)	PA3	375	29.7%	68/192 (M=1.38)	N.A.	164s (fading)	BL
		475	11%	58/425 (M=1.499)	N.A.	164s (fading)	BL
2 ($\hat{I}_{or} / I_{oc}$ = 10 dB)	PB3	183	65.7% → (34.3%)	63/216 (m=0.704)	N.A.	164s (fading)	RT
		274	48.7% →(51.3%)	80/177 (m=0.76)	N.A.	164s (fading)	RT
3 ($\hat{I}_{or} / I_{oc}$ = 10 dB)	VA30	187	65% → (35%)	62/208 (m=0.706)	N.A.	16.4s (fading)	RT
		284	46.8% →(53.2%)	82/174 (m=0.767)	N.A.	16.4s (fading)	RT

Table F.6.3.5.3.2 Open Loop Diversity Performance for test case 9.2.2 demodulation of HS-DSCH

Open Loop Diversity Performance 16 QAM H-Set 1/2/3 Test number	Absolute Test requirement (kbps)		Relative test requirement (normalized to ideal=777 kbps) No of events/No of samples in %	Test limit expressed as No of events/min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory if applicable	Test time in s Mandatory if fading Informative and approx. if statistical	BL / RT
1 ($\hat{I}_{or} / I_{oc}$ = 10 dB)	PA3	295	62% →(38%)	66/203 (m=0.715)	N.A.	164s (fading)	RT
		463	40.4%	82/176 (M=1.306)	N.A.	164s (fading)	BL
2 ($\hat{I}_{or} / I_{oc}$ = 10 dB)	PB3	24	96.9% →(3.1%)	64/2500 (m=1/1.5)	N.A.	164s (fading)	RT
		243	68.7% →(31.3%)	60/227 (m=0.695)	N.A.	164s (fading)	RT
3 ($\hat{I}_{or} / I_{oc}$ = 10 dB)	VA30	35	95.5% →(4.5%)	63/1695 (m=1/1.5)	N.A.	16.4s (fading)	RT
		251	67.7% →(32.3%)	61/223 (m=0.698)	N.A.	16.4s (fading)	RT

Table F.6.3.5.3.3 Open Loop Diversity Performance for test case 9.2.2 demodulation of HS-DSCH

Open Loop Diversity Performance QPSK H-Set 4 Test number	Absolute Test requirement (kbps)		Relative test requirement (normalized to ideal=534 kbps) No of events/No of samples in %	Test limit expressed as No of events/min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory if applicable	Test time in s Mandatory if fading Informative and approx. if statistical	BL / RT
1 ($\hat{I}_{or}/I_{oc} = 0$ dB)	PA3	70	86.9% →(13.1%)	59/544 (m=1/1.5)	N.A.	164s (fading)	RT
		171	68% →(32%)	61/225 (m=0.697)	N.A.	164s (fading)	RT
2 ($\hat{I}_{or}/I_{oc} = 0$ dB)	PB3	14	97.4% →(2.6%)	64/2982 (m=1/1.5)	N.A.	164s (fading)	RT
		150	71.9% →(28.1%)	59/250 (m=0.687)	N.A.	164s (fading)	RT
3 ($\hat{I}_{or}/I_{oc} = 0$ dB)	VA30	11	97.04% →(2.06%)	65/3819 (m=1/1.5)	3819 (≥65)	23s (stat)	RT
		156	70.8% →(29.2%)	60/243 (m=0.69)	N.A.	16.4s (fading)	RT
1 ($\hat{I}_{or}/I_{oc} = 10$ dB)	PA3	369	30.9%	69/188 (M=1.372)	N.A.	164s (fading)	BL
		471	11.7%	58/400 (M=1.497)	N.A.	164s (fading)	BL
2 ($\hat{I}_{or}/I_{oc} = 10$ dB)	PB3	180	66.3% →(33.7%)	63/220 (m=0.702)	N.A.	164s (fading)	RT
		276	48.3% →(51.7%)	79/173 (m=0.762)	N.A.	164s (fading)	RT
3 ($\hat{I}_{or}/I_{oc} = 10$ dB)	VA30	184	65.5% →(34.5%)	62/211 (m=0.704)	N.A.	16.4s (fading)	RT
		285	46.6% →(53.4%)	81/171 (m=0.768)	N.A.	16.4s (fading)	RT

Table F.6.3.5.3.4 Open Loop Diversity Performance for test case 9.2.2 demodulation of HS-DSCH

Open Loop Diversity Performance QPSK H-Set 5 Test number	Absolute Test requirement (kbps)		Relative test requirement, normalized to ideal=801 kbps No of events/No of samples in %	Test limit expressed as No of events/min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory if applicable	Test time in s Mandatory if fading Informative and approx. if statistical	BL / RT
1 ($\hat{I}_{or}/I_{oc}$ = 0 dB)	PA3	116	85.5% →(14.5%)	59/492 (m=0.667)	N.A.	164s (fading)	RT
		270	66.27% →(33.73%)	62/216 (m=0.702)	N.A.	164s (fading)	RT
2 ($\hat{I}_{or}/I_{oc}$ = 0 dB)	PB3	30	96.25% →(3.75%)	65/2100 (m=1/1.5)	N.A.	164s (fading)	RT
		231	71.14% →(28.86%)	58/243 (m=0.689)	N.A.	164s (fading)	RT
3 ($\hat{I}_{or}/I_{oc}$ = 0 dB)	VA30	23	97.13% →(2.87%)	64/2741 (m=1/1.5)	N.A.	16.4s (fading)	RT
		243	69.64% →(30.36%)	60/234 (m=0.693)	N.A.	16.4s (fading)	RT
1 ($\hat{I}_{or}/I_{oc}$ = 10 dB)	PA3	563	29.67%	68/194 (M=1.381)	N.A.	164s (fading)	BL
		713	10.93%	58/428 (M=1.499)	N.A.	164s (fading)	BL
2 ($\hat{I}_{or}/I_{oc}$ = 10 dB)	PB3	275	65.65% →(34.35%)	64/212 (m=0.704)	N.A.	164s (fading)	RT
		411	48.66% →(51.34%)	77/170 (m=0.76)	N.A.	164s (fading)	RT
3 ($\hat{I}_{or}/I_{oc}$ = 10 dB)	VA30	281	64.9% →(35.1%)	63/211 (m=0.706)	N.A.	16.4s (fading)	RT
		426	46.78% →(53.22%)	81/172 (m=0.767)	N.A.	16.4s (fading)	RT

Table F.6.3.5.~~3~~4.1 Closed Loop Diversity Performance for test case 9.2.3 demodulation of HS-DSCH

Closed Loop Diversity Performance QPSK H-Set 1/2/3 Test number	Absolute Test requirement (kbps)		Relative test requirement (normalized to ideal=534 kbps) No of events/No of samples in %	Test limit expressed as No of events/min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory if applicable	Test time in s Mandatory if fading Informative and approx. if statistical	BL / RT
1 ($\hat{I}_{or}/I_{oc} = 0$ dB)	PA3	118	77.89% →(22.11%)	58/315 (m=0.674)	N.A.	164s (fading)	RT
		225	57.84% →(42.16%)	69/189(m=0.728)	N.A.	164s (fading)	RT
2 ($\hat{I}_{or}/I_{oc} = 0$ dB)	PB3	50	90.63% →(9.37%)	61/787 (m=1/1.5)	N.A.	164s (fading)	RT
		173	67.58% →(32.42%)	61/222 (m=0.698)	N.A.	164s (fading)	RT
3 ($\hat{I}_{or}/I_{oc} = 0$ dB)	VA30	47	91.2% →(8.8%)	62/852 (m=1/1.5)	N.A.	16.4s (fading)	RT
		172	67.77% →(32.23%)	61/223 (m=0.698)	N.A.	16.4s (fading)	RT
1 ($\hat{I}_{or}/I_{oc} = 10$ dB)	PA3	399	25.23%	63/207 (M=1.413)	N.A.	164s (fading)	BL
		458	14.18%	57/325 (M=1.487)	N.A.	164s (fading)	BL
2 ($\hat{I}_{or}/I_{oc} = 10$ dB)	PB3	199	62.71% →(37.29%)	65/204 (m=0.713)	N.A.	164s (fading)	RT
		301	43.6%	88/180 (M=1.285)	N.A.	164s (fading)	BL
3 ($\hat{I}_{or}/I_{oc} = 10$ dB)	VA30	204	61.77% →(38.23%)	65/198 (m=0.716)	N.A.	16.4s (fading)	RT
		305	42.85%	85/173 (M=1.29)	N.A.	16.4s (fading)	BL

Table F.6.3.5.~~3~~4.2 Closed Loop Diversity Performance for test case 9.2.3 demodulation of HS-DSCH

Closed Loop Diversity Performance 16 QAM H-Set 1/2/3 Test number	Absolute Test requirement (kbps)		Relative test requirement (normalized to ideal=777 kbps) No of events/No of samples in %	Test limit expressed as No of events/min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory if applicable	Test time in s Mandatory if fading Informative and approx. if statistical	BL / RT
1 ($\hat{I}_{or}/I_{oc} = 10$ dB)	PA3	361	53.56% →(46.44%)	73/180 (m=0.743)	N.A.	164s (fading)	RT
		500	35.68%	74/177 (M=1.338)	N.A.	164s (fading)	BL
2 ($\hat{I}_{or}/I_{oc} = 10$ dB)	PB3	74	90.48% →(9.52%)	62/788 (m=1/1.5)	N.A.	164s (fading)	RT
		255	67.2% →(32.8%)	61/219 (m=0.7)	N.A.	164s (fading)	RT
3 ($\hat{I}_{or}/I_{oc} = 10$ dB)	VA30	84	89.2% →(10.8%)	61/683 (m=1/1.5)	N.A.	16.4s (fading)	RT
		254	67.32% →(32.68%)	61/220 (m=0.699)	N.A.	16.4s (fading)	RT

Table F.6.3.5.~~3~~4.~~4~~3 Closed Loop Diversity Performance for test case 9.2.3 demodulation of HS-DSCH

Closed Loop Diversity Performance QPSK H-Set 4 Test number	Absolute Test requirement (kbps)		Relative test requirement (normalized to ideal=534 kbps) No of events/No of samples in %	Test limit expressed as No of events/min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory if applicable	Test time in s Mandatory if fading Informative and approx. if statistical	BL / RT
1 ($\hat{I}_{or}/I_{oc} = 0$ dB)	PA3	114	78.64% →(21.36%)	58/327 (m=0.673)	N.A.	164s (fading)	RT
		223	58.21% →(41.79%)	69/191 (m=0.727)	N.A.	164s (fading)	RT
2 ($\hat{I}_{or}/I_{oc} = 0$ dB)	PB3	43	91.94% →(8.06%)	62/930 (m=1/1.5)	N.A.	164s (fading)	RT
		167	68.71% →(31.29%)	60/227 (m=0.695)	N.A.	164s (fading)	RT
3 ($\hat{I}_{or}/I_{oc} = 0$ dB)	VA30	40	92.5% →(7.5%)	63/1017 (m=1/1.5)	N.A.	16.4s (fading)	RT
		170	68.14% →(31.86%)	61/226 (m=0.697)	N.A.	16.4s (fading)	RT
1 ($\hat{I}_{or}/I_{oc} = 10$ dB)	PA3	398	25.42%	63/206 (M=1.412)	N.A.	164s (fading)	BL
		457	14.37%	57/321 (M=1.486)	N.A.	164s (fading)	BL
2 ($\hat{I}_{or}/I_{oc} = 10$ dB)	PB3	196	63.27 →(36.73%)	64/204 (m=0.711)	N.A.	164s (fading)	RT
		292	45.28% →(54.72%)	85/175 (m=0.773)	N.A.	164s (fading)	RT
3 ($\hat{I}_{or}/I_{oc} = 10$ dB)	VA30	199	62.71% →(37.29%)	65/204 (m=0.713)	N.A.	16.4s (fading)	RT
		305	42.85%	85/173 (M=1.29)	N.A.	16.4s (fading)	BL

Table F.6.3.5.~~3~~4.4 Closed Loop Diversity Performance for test case 9.2.3 demodulation of HS-DSCH

Closed Loop Diversity Performance QPSK H-Set 5 Test number	Absolute Test requirement (kbps)		Relative test requirement (normalized to ideal=801 kbps) No of events/No of samples in %	Test limit expressed as No of events/min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory if applicable	Test time in s Mandatory if fading Informative and approx. if statistical	BL / RT
1 ($\hat{I}_{or}/I_{oc}$ = 0 dB)	PA3	177	77.89% →(22.11%)	58/315 (m=0.674)	N.A.	164s (fading)	RT
		338	57.78% →(42.22%)	68/186 (m=0.728)	N.A.	164s (fading)	RT
2 ($\hat{I}_{or}/I_{oc}$ = 0 dB)	PB3	75	90.63% →(9.37%)	61/787 (m=1/1.5)	N.A.	164s (fading)	RT
		260	67.52% →(32.48%)	62/225 (m=0.699)	N.A.	164s (fading)	RT
3 ($\hat{I}_{or}/I_{oc}$ = 0 dB)	VA30	71	91.13% →(8.87%)	62/846 (m=1/1.5)	N.A.	16.4s (fading)	RT
		258	67.77% →(32.23%)	61/223 (m=0.698)	N.A.	16.4s (fading)	RT
1 ($\hat{I}_{or}/I_{oc}$ = 10 dB)	PA3	599	25.17%	64/211 (M=1.413)	N.A.	164s (fading)	BL
		687	14.18%	57/325 (M=1.487)	N.A.	164s (fading)	BL
2 ($\hat{I}_{or}/I_{oc}$ = 10 dB)	PB3	299	62.65% →(37.35%)	64/200 (m=0.713)	N.A.	164s (fading)	RT
		452	43.54%	87/174 (M=1.285)	N.A.	164s (fading)	BL
3 ($\hat{I}_{or}/I_{oc}$ = 10 dB)	VA30	306	61.77% →(38.23%)	65/198 (m=0.716)	N.A.	16.4s (fading)	RT
		458	42.79%	86/175 (M=1.29)	N.A.	16.4s (fading)	BL

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CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**472**	⌘**rev**	**-**	⌘ Current version:	**5.5.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects:	UICC apps⌘		ME	X	Radio Access Network		Core Network	

Title:	⌘	Addition of UMTS-850 Band V to chapter 6		
Source:	⌘	Nokia		
Work item code:	⌘	TEI	***Date:*** ⌘	16/10/2004
Category:	⌘	F	***Release:*** ⌘	R5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Band V (UMTS 850) is missing in 34.121 chapter 6
Summary of change:	⌘	This CR will introduce UMTS-850 band to chapter 6 (Receiver characteristics).
Consequences if not approved:	⌘	34.121 chapter 6 tests cannot be performed in Band V.

Clauses affected:	⌘	6.2, 6.5, 6.7, 6.8			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This CR is to be treated as release independent.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.2 Reference Sensitivity Level

6.2.1 Definition and applicability

The reference sensitivity level <REFSENS> is the minimum mean power received at the UE antenna port at which the Bit Error Ratio (BER) shall not exceed a specific value

The requirements and this test apply to all types of UTRA for the FDD UE.

6.2.2 Minimum Requirements

The BER shall not exceed 0,001 for the parameters specified in table 6.2.1.

Table 6.2.1: Test parameters for Reference Sensitivity Level

Operating Band	Unit	DPCH_Ec <REFSENS>	<REFÎor>
I, VI	dBm/3.84 MHz	-117	-106.7
II	dBm/3.84 MHz	-115	-104.7
III	dBm/3.84 MHz	-114	-103.7
V	dBm/3.84 MHz	-115	-104.7
1. For Power class 3 this shall be at the maximum output power 2. For Power class 4 this shall be at the maximum output power			

The normative reference for this requirement is TS 25.101 [23] clause 7.3.1.

6.2.3 Test purpose

To verify that the UE BER shall not exceed 0,001 for the parameters specified in table 6.2.1.

The lack of the reception sensitivity decreases the coverage area at the far side from Node B.

6.2.4 Method of test

6.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: low range, mid range, high range; see clause G.2.4.

1) Connect the SS to the UE antenna connector as shown in figure A.3.

2) Channel conditions are initially set up with received CPICH_RSCP >-85 dBm. The relative power level of downlink physical channels to Ior are set up according to clause E.2.1. The parameter settings of the cell are set up according to TS 34.108, clause 6.1.5 for ìDefault settings for a serving cell in a single cell environmentî.

3) Switch on the phone.

4) A call is set up according to the Generic call setup procedure in [3] clause 7.3.1.

5) The RF parameters are set up according to table 6.2.2.

6) Enter the UE into loopback test mode and start the loopback test.

See TS 34.109 [4] for details regarding loopback test.

6.2.4.2 Procedure

1) Set and send continuously Up power control commands to the UE until the UE output power shall be maximum level.

2) Measure the BER of DCH received from the UE at the SS.

6.2.5 Test requirements

The measured BER, derived in step 2), shall not exceed 0,001.

Table 6.2.2: Test parameters for Reference Sensitivity Level

Operating Band	Unit	DPCH_Ec <REFSENS>	<REFÎor>
I, VI	dBm/3.84 MHz	-116.3	-106
II	dBm/3.84 MHz	-114.3	-104
III	dBm/3.84 MHz	-113.3	-103
V	dBm/3.84 MHz	-114.3	-104
3. For Power class 3 this shall be at the maximum output power 4. For Power class 4 this shall be at the maximum output power			

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

NEXT MODIFIED SECTION

6.5 Blocking Characteristics

6.5.1 Definition and applicability

The blocking characteristic is a measure of the receiver's ability to receive a wanted signal at its assigned channel frequency in the presence of an unwanted interferer on frequencies other than those of the spurious response or the adjacent channels, without this unwanted input signal causing a degradation of the performance of the receiver beyond a specified limit. The blocking performance shall apply at all frequencies except those at which a spurious response occur.

The requirements in clause 6.5.2.1 and 6.5.2.2 and this test apply to all types of UTRA for the FDD UE.

The requirements in clause 6.5.2.3 and this test apply to the FDD UE supporting band II, ~~or~~ band III or Band V.

6.5.2 Minimum Requirements

6.5.2.1 Minimum Requirements (In-band blocking)

The BER shall not exceed 0,001 for the parameters specified in table 6.5.1.

The normative reference for this requirement is TS 25.101 [23] clause 7.6.1.

NOTE: $I_{blocking}$ (modulated) consists of the common channels needed for tests as specified in table E.4.1 and 16 dedicated data channels as specified in table E3.6.

Table 6.5.1: Test parameters for In-band blocking characteristics

Parameter	Unit	Level	
DPCH_Ec	dBm/3.84 MHz	<REFSENS>+3 dB	
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 3 dB	
$I_{blocking}$ mean power (modulated)	dBm	-56 (for F_{uw} offset ±10 MHz)	-44 (for F_{uw} offset ±15 MHz)
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)	

6.5.2.2 Minimum requirements (Out of-band blocking)

The BER shall not exceed 0.001 for the parameters specified in table 6.5.2. For table 6.5.2 up to 24 exceptions are allowed for spurious response frequencies in each assigned frequency channel when measured using a 1 MHz step size.

The normative reference for this requirement is TS 25.101 [23] clause 7.6.2.

Table 6.5.2: Test parameters for Out of band blocking characteristics

Parameter	Unit	Frequency range 1	Frequency range 2	Frequency range 3
DPCH_Ec	dBm/3.84 MHz	<REFSENS>+3 dB	<REFSENS>+3 dB	<REFSENS>+3 dB
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 3 dB	<REF$\hat{I}_{or}$> + 3 dB	<REF$\hat{I}_{or}$> + 3 dB
$I_{blocking}$ (CW)	dBm	-44	-30	-15
F_{uw} (Band I operation)	MHz	2050<f <2095 2185<f <2230	2025 <f <2050 2230 <f <2255	1< f <2025 2255<f<12750
F_{uw} (Band II operation)	MHz	1870<f <1915 2005<f <2050	1845 <f <1870 2050 <f <2075	1< f <1845 2075<f<12750
F_{uw} (Band III operation)	MHz	1745 <f <1790 1895<f <1940	1720 <f < 1745 1940<f < 1965	1< f <1720 1965<f<12750
F_{uw} (Band V operation)	MHz	809< f <854 909< f <954	784< f <809 954< f < 979	1< f <784 979<f<12750
F_{uw} (Band VI operation)	MHz	815 < f < 860 900 < f < 945	790 < f < 815 945 < f < 970	1 < f < 790 970 < f < 12750
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)		
Band I operation	For 2095<f<2110 MHz and 2170<f<2185 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied.			
Band II operation	For 1915<f<1930 MHz and 1990<f<2005 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied			
Band III operation	For 1790<f<1805 MHz and 1880<f<1895 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied.			
Band V operation	For 854<f<869 MHz and 894<f<909 MHz, the appropriate in-band blocking or adjacent channel selectivity in subclause 6.5.2 and subclause 6.4.2 shall be applied.			
Band VI operation	For 860<f<875 MHz and 885<f<900 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied.			

6.5.2.3 Minimum requirements (Narrow band blocking)

The BER shall not exceed 0.001 for the parameters specified in table 6.5.3. This requirement is measure of a receiver's ability to receive a W-CDMA signal at its assigned channel frequency in the presence of an unwanted narrow band interferer at a frequency, which is less than the nominal channel spacing. The requirements and this test apply to UTRA for the FDD UE supporting band II ~~or~~, band III or band V.

The normative reference for this requirement is TS 25.101 [23] clause 7.6.3

Table 6.5.3: Test parameters for narrow band blocking

Parameter	Unit	Band II and Band V	Band III
DPCH_Ec	dBm/3.84 MHz	<REFSENS> + 10 dB	<REFSENS> + 10 dB
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 10 dB	<REF$\hat{I}_{or}$> + 10 dB
$I_{blocking}$ (GMSK)	dBm	-57	-56
F_{uw} (offset)	MHz	2.7	2.8
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)	

NOTE: $I_{blocking}$ (GMSK) is an interfering signal as defined in TS 45.004. It is a GMSK modulated carrier following the structure of the GSM signals, but with all modulating bits (including the midamble period) derived directly from a random or pseudo random data stream.

6.5.3 Test purpose

To verify that the UE BER does not exceed 0,001 for the parameters specified in table 6.5.1, table 6.5.2 and table 6.5.3. For table 6.5.2 up to (24) exceptions are allowed for spurious response frequencies in each assigned frequency channel when measured using a 1 MHz step size.

The lack of the blocking ability decreases the coverage area when other transmitter exists (except in the adjacent channels and spurious response).

6.5.4 Method of test

6.5.4.1 Initial conditions

For in-band case:

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

For out-of-band case:

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequency to be tested: 1 arbitrary frequency chosen from the low, mid or high range; see clause G.2.4.

For narrow-band case:

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS to the UE antenna connector as shown in figure A.5.

2) RF parameters are set up according to table 6.5.4, table 6.5.5 and table 6.5.6.

3) A call is set up according to the Generic call setup procedure specified in TS34.108[3] sub clause 7.3.2, with the following exception for information elements in RADIO BEARER SETUP message. With this exception, the Power Control Algorithm for the Uplink is set to algorithm 2.

4) Enter the UE into loopback test mode and start the loopback test.

Table 6.5.3A Contents of RADIO BEARER SETUP message: AM or UM

Information Element	Value/Remark
CHOICE channel requirement - Power Control Algorithm	Uplink DPCH info Algorithm2

See TS 34.108 [3] and TS 34.109 [4] for details regarding generic call setup procedure and loopback test.

6.5.4.2 Procedure

1) Set the parameters of the CW generator or the interference signal generator as shown in table 6.5.4, 6.5.5 and table 6.5.6. For table 6.5.5, the frequency step size is 1 MHz.

2) Set the power level of UE according to the table 6.5.4, table 6.5.5, and table 6.5.6, or send the power control commands (1dB step size should be used.) to the UE until UE output power measured by Test System shall be kept at the specified power level with ±1dB tolerance.

3) Measure the BER of DCH received from the UE at the SS.

4) For table 6.5.5, record the frequencies for which BER exceed the test requirements.

6.5.5 Test requirements

For table 6.5.4, the measured BER, derived in step 2), shall not exceed 0.001. For table 6.5.5, the measured BER, derived in step 2) shall not exceed 0,001 except for the spurious response frequencies, recorded in step 3). The number of spurious response frequencies, recorded in step 3) shall not exceed 24. For table 6.5.6, the measured BER, derived in step 2), shall not exceed 0.001.

Table 6.5.4: Test parameters for In-band blocking characteristics

Parameter	Unit	Level	
DPCH_Ec	dBm/3.84 MHz	<REFSENS>+3 dB	
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 3 dB	
$I_{blocking}$ mean power (modulated)	dBm	-56 (for F_{uw} offset ±10 MHz)	-44 (for F_{uw} offset ±15 MHz)
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)	

Table 6.5.5: Test parameters for Out of band blocking characteristics

Parameter	Unit	Frequency range 1	Frequency range 2	Frequency range 3
DPCH_Ec	dBm/3.84 MHz	<REFSENS>+3 dB	<REFSENS>+3 dB	<REFSENS>+3 dB
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 3 dB	<REF$\hat{I}_{or}$> + 3 dB	<REF$\hat{I}_{or}$> + 3 dB
$I_{blocking}$ (CW)	dBm	-44	-30	-15
F_{uw} (Band I operation)	MHz	2050<f <2095 2185<f <2230	2025 <f <2050 2230 <f <2255	1< f <2025 2255<f<12750
F_{uw} (Band II operation)	MHz	1870<f <1915 2005<f <2050	1845 <f <1870 2050 <f <2075	1< f <1845 2075<f<12750
F_{uw} (Band III operation)	MHz	1745 <f <1790 1895<f <1940	1720 <f < 1745 1940<f < 1965	1< f <1720 1965<f<12750
F_{uw} (Band V operation)	MHz	809< f <854 909< f <954	784< f <809 954< f < 979	1< f <784 979<f<12750
F_{uw} (Band VI operation)	MHz	815 < f < 860 900 < f < 945	790 < f < 815 945 < f < 970	1 < f < 790 970 < f < 12750
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)		
Band I operation	For 2095<f<2110 MHz and 2170<f<2185 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied.			
Band II operation	For 1915<f<1930 MHz and 1990<f<2005 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied			
Band III operation	For 1790<f<1805 MHz and 1880<f<1895 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied.			
Band V operation	For 854<f<869 MHz and 894<f<909 MHz, the appropriate in-band blocking or adjacent channel selectivity in subclause 6.5.2 and subclause 6.4.2 shall be applied.			
Band VI operation	For 860<f<875 MHz and 885<f<900 MHz, the appropriate in-band blocking or adjacent channel selectivity in subclause 6.5.2 and subclause 6.4.2 shall be applied			

Table 6.5.6: Test parameters for narrow band blocking

Parameter	Unit	Band II and Band V	Band III
DPCH_Ec	dBm/3.84 MHz	<REFSENS> + 10 dB	<REFSENS> + 10 dB
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 10 dB	<REF$\hat{I}_{or}$> + 10 dB
$I_{blocking}$ (GMSK)	dBm	-57	-56
F_{uw} (offset)	MHz	2.7	2.8
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)	

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

NEXT MODIFIED SECTION

6.7 Intermodulation Characteristics

6.7.1 Definition and applicability

Third and higher order mixing of the two interfering RF signals can produce an interfering signal in the band of the desired channel. Intermodulation response rejection is a measure of the capability of the receiver to receive a wanted signal on its assigned channel frequency in the presence of two or more interfering signals which have a specific frequency relationship to the wanted signal.

The requirements and this test apply to all types of UTRA for the FDD UE. The test parameters in tables 6.7.2 and 6.7.4 applies to the FDD UE supporting Band II, ~~and~~ Band III or Band V.

6.7.2 Minimum Requirements

The BER shall not exceed 0,001 for the parameters specified in table 6.7.1 and in table 6.7.2.

The normative reference for this requirement is TS 25.101 [23] clause 7.8.1 and clause 7.8.2.

NOTE: I_{ouw2} (modulated) consists of the common channels needed for tests as specified in table E.4.1 and 16 dedicated data channels as specified in table E.3.6.

Table 6.7.1: Test parameters for Intermodulation Characteristics

Parameter	Level		Unit
DPCH_Ec	<REFSENS> +3 dB		dBm / 3,84 MHz
$\hat{I}_{or}$	<REF$\hat{I}_{or}$> +3 dB		dBm / 3,84 MHz
I_{ouw1} (CW)	–46		dBm
I_{ouw2} mean power (modulated)	–46		dBm
F_{uw1} (offset)	10	-10	MHz
F_{uw2} (offset)	20	-20	MHz
UE transmitted mean power	20 (for Power class 3) 18 (for Power class 4)		dBm

Table 6.7.2: Test parameters for narrow band intermodulation characteristics

Parameter	Unit	Band II and Band V		Band III	
DPCH_Ec	DBm/3.84 MHz	<REFSENS>+ 10 dB		<REFSENS>+ 10 dB	
$\hat{I}_{or}$	DBm/3.84 MHz	<REF$\hat{I}_{or}$> + 10 dB		[<REF$\hat{I}_{or}$> +10 dB	
I_{ouw1} (CW)	dBm	-44		-43	
I_{ouw2} (GMSK)	dBm	-44		-43	
F_{uw1} (offset)	MHz	3.5	-3.5	3.6	-3.6
F_{uw2} (offset)	MHz	5.9	-5.9	6.0	-6.0
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)			

NOTE: I_{ouw2} (GMSK) is an interfering signal as defined in TS 45.004. It is a GMSK modulated carrier following the structure of the GSM signals, but with all modulating bits (including the midamble period) derived directly from a random or pseudo random data stream.

6.7.3 Test purpose

To verify that the UE BER does not exceed 0,001 for the parameters specified in table 6.7.1 and in table 6.7.2.

The lack of the intermodulation response rejection ability decreases the coverage area when two or more interfering signals, which have a specific frequency relationship to the wanted signal, exist.

6.7.4 Method of test

6.7.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS to the UE antenna connector as shown in figure A.7.

2) RF parameters are set up according to table 6.7.3 and table 6.7.4.

3) A call is set up according to the Generic call setup procedure specified in TS 34.108 [3] sub clause 7.3.2, with the following exception for information elements in RADIO BEARER SETUP message. With this exception, the Power Control Algorithm for the Uplink is set to algorithm 2.

4) Enter the UE into loopback test mode and start the loopback test.

Table 6.7.2A Contents of RADIO BEARER SETUP message: AM or UM

Information Element	Value/Remark
CHOICE channel requirement - Power Control Algorithm	Uplink DPCH info Algorithm2

See TS 34.108 [3] and TS 34.109 [4] for details regarding generic call setup procedure and loopback test.

6.7.4.2 Procedure

1) Set the parameters of the CW generator and interference signal generator as shown in table 6.7.3 and in table 6.7.4.

2) Set the power level of UE according to the tables 6.7.3, and table 6.7.4 or send the power control commands (1dB step size should be used.) to the UE until UE output power measured by Test System shall be kept at the specified power level with ±1dB tolerance.

3) Measure the BER of DCH received from the UE at the SS.

6.7.5 Test requirements

The measured BER, derived in step 1), shall not exceed 0,001.

Table 6.7.3: Test parameters for Intermodulation Characteristics

Parameter	Level		Unit
DPCH_Ec	<REFSENS> +3 dB		dBm / 3.84 MHz
$\hat{I}_{or}$	<REF$\hat{I}_{or}$> +3 dB		dBm / 3.84 MHz
I_{ouw1} (CW)	–46		dBm
I_{ouw2} mean power (modulated)	–46		dBm
F_{uw1} (offset)	10	-10	MHz
F_{uw2} (offset)	20	-20	MHz
UE transmitted mean power	20 (for Power class 3) 18 (for Power class 4)		dBm

Table 6.7.4: Test parameters for narrow band intermodulation characteristics

Parameter	Unit	Band II and Band V		Band III	
DPCH_Ec	DdBm/3.84 MHz	<REFSENS>+ 10 dB		<REFSENS>+ 10 dB	
$\hat{I}_{or}$	DdBm/3.84 MHz	<REF$\hat{I}_{or}$> + 10 dB		[<REF$\hat{I}_{or}$> +10 dB	
I_{ouw1} (CW)	dBm	-44		-43	
I_{ouw2} (GMSK)	dBm	-44		-43	
F_{uw1} (offset)	MHz	3.5	-3.5	3.6	-3.6
F_{uw2} (offset)	MHz	5.9	-5.9	6.0	-6.0
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)			

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

6.8 Spurious Emissions

6.8.1 Definition and applicability

The spurious emissions power is the power of emissions generated or amplified in a receiver that appear at the UE antenna connector.

The requirements and this test apply to all types of UTRA for the FDD UE.

6.8.2 Minimum Requirements

The power of any narrow band CW spurious emission shall not exceed the maximum level specified in table 6.8.1 and table 6.8.2.

Table 6.8.1: General receiver spurious emission requirements

Frequency Band	Measurement Bandwidth	Maximum level	Note
30 MHz ≤ f < 1 GHz	100 kHz	-57 dBm	
1 GHz ≤ f ≤ 12,75 GHz	1 MHz	-47 dBm	

Table 6.8.2: Additional receiver spurious emission requirements

Operating band	Frequency Band	Measurement Bandwidth	Maximum level	Note
I	1 920 MHz ≤ f ≤ 1 980 MHz	3,84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	2 110 MHz ≤ f ≤ 2 170 MHz	3,84 MHz	-60 dBm	UE receive band
II	1850 MHz ≤ f ≤ 1910 MHz	3.84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	1930 MHz ≤ f ≤ 1990 MHz	3.84 MHz	-60 dBm	UE receive band
III	1710 MHz ≤ f ≤ 1785 MHz	3.84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	1805 MHz ≤ f ≤ 1880 MHz	3.84 MHz	-60 dBm	UE receive band
V	824 MHz ≤ f ≤ 849 MHz	3.84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	869 MHz ≤ f < 894 MHz	3.84 MHz	-60 dBm	UE receive band
VI	830 MHz ≤ f ≤ 840 MHz	3.84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	875 MHz ≤ f ≤ 885 MHz	3.84 MHz	-60 dBm	UE receive band
	2110 MHz ≤ f ≤ 2170 MHz	3.84 MHz	-60 dBm	

The reference for this requirement is TS 25.101 [1] clause 7.9.1.

6.8.3 Test purpose

To verify that the UE spurious emission meets the specifications described in clause 6.8.2.

Excess spurious emissions increase the interference to other systems.

6.8.4 Method of test

6.8.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: low range, mid range, high range; see clause G.2.4.

1) Connect a spectrum analyzer (or other suitable test equipment) to the UE antenna connector as shown in figure A.8.

2) RF parameters are setup according to table E.3.2.2. Settings for the serving cell are defined in table 6.8.2A.

3) A call is set up according to the setup procedure specified in TS34.108 [3] sub clause 7.3.5, with the following exceptions for information elements in System Information Block type3.

SIB 3 Information Element	Value/Remark
- Cell selection and re-selection info	
- CHOICE mode	FDD
- Sintrasearch	0 dB
- Sintersearch	0 dB
- RAT List	This parameter is not present
- Maximum allowed UL TX power	Power level where Pcompensation=0

The exceptions for SIB1 are defined in TS 34.108 [3] clause 7.3.5.2.

NOTE: The setup procedure (3) sets the UE into the CELL_FACH state. With this state and the SS level (2) it is ensured that UE continuously monitors the S-CCPCH and no cell reselections are performed [see 3GPP TS 25.304, clauses 5.2.3.and 5.2.6]. The UE will not be transmitting, and therefore will not interfere with the measurement.

Table 6.8.2A: Settings for the serving cell during the measurement of Rx Spurious Emissions

Parameter	Unit	Cell 1
Cell type		Serving cell
UTRA RF Channel Number		As defined in clause 6.8.4.1
Qqualmin	dB	-24
Qrxlevmin	dBm	-115
UE_TXPWR_MAX_RACH	dBm	+21
CPICH Ec (see notes 1 and 2)	dBm/3.84 MHz	As defined in table E.3.2.2
NOTE 1: The power level is specified in terms of CPICH_Ec instead of CPICH_RSCP as RSCP is a receiver measurement and only CPICH_Ec can be directly controlled by the SS. NOTE 2: The cell fulfils TS 25.304, 5.2.3.1.2.		

6.8.4.2 Procedure

1) Sweep the spectrum analyzer (or equivalent equipment) over a frequency range and measure the average power of spurious emission.

6.8.5 Test requirements

It shall be verified that the RRC connection release at the end of the procedure described in 34.108 [3] clause 7.3.5.3 shall be completed successfully indicating that the UE has stayed in CELL_FACH state during the measurement of the spurious emissions.

The measured spurious emissions, derived in step 1), shall not exceed the maximum level specified in table 6.8.3 and table 6.8.4.

Table 6.8.3: General receiver spurious emission requirements

Frequency Band	Measurement Bandwidth	Maximum level	Note
30 MHz ≤ f < 1 GHz	100 kHz	-57 dBm	
1 GHz ≤ f ≤ 12,75 GHz	1 MHz	-47 dBm	

Table 6.8.4: Additional receiver spurious emission requirements

Operating Band	Frequency Band	Measurement Bandwidth	Maximum level	Note
I	1 920 MHz ≤ f ≤ 1 980 MHz	3,84 MHz	-60 dBm	UE transmit band
	2 110 MHz ≤ f ≤ 2 170 MHz	3,84 MHz	-60 dBm	UE receive band
II	1850 MHz ≤ f ≤ 1910 MHz	3.84 MHz	-60 dBm	UE transmit band
	1930 MHz ≤ f ≤ 1990 MHz	3.84 MHz	-60 dBm	UE receive band
III	1710 MHz ≤ f ≤ 1785 MHz	3.84 MHz	-60 dBm	UE transmit band
	1805 MHz ≤ f ≤ 1880 MHz	3.84 MHz	-60 dBm	UE receive band
V	824 MHz ≤ f ≤ 849 MHz	3.84 MHz	-60 dBm	UE transmit band
	869 MHz ≤ f < 894 MHz	3.84 MHz	-60 dBm	UE receive band
VI	830 MHz ≤ f ≤ 840 MHz	3.84 MHz	-60 dBm	UE transmit band
	875 MHz ≤ f ≤ 885 MHz	3.84 MHz	-60 dBm	UE receive band
	2110 MHz ≤ f ≤ 2170 MHz	3.84 MHz	-60 dBm	

NOTE 1: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

NOTE 2: The Test Requirements are measured in the CELL_FACH state instead of in the UE states defined in the Minimum Requirement because the CELL_FACH state ensures that the UE receiver is continuously on and the UE transmitter is off whilst the spectrum analyser searches for spurious emissions. The UE states defined in the Minimum Requirement allow the UE receiver to be in discontinuous reception, and using those UE states during the measurement would have resulted in a complicated and significantly lengthened test procedure since the UE receiver would be allowed to be switched off part of the time.

3GPP TSG-T1 Meeting #25
Malta, Malta, 1st ñ 5th November 2004

Tdoc ⌘ T1-041878

CR-Form-v7.1

CHANGE REQUEST

⌘	**34.121**	**CR**	474	⌘ **rev**	**-**	⌘	Current version:	**5.5.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	CR to 34.121: Changing the BLER target for the DCCH in test 7.8
Source:	⌘	Intel , QUALCOMM Inc., Spirent Communications
Work item code:	⌘	TEI
Date:	⌘	02/11/2004
Category:	⌘	**D**
Release:	⌘	Rel-5

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(addition of feature),*
- ***C*** *(functional modification of feature)*
- ***D*** *(editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
- *Ph2 (GSM Phase 2)*
- *R96 (Release 1996)*
- *R97 (Release 1997)*
- *R98 (Release 1998)*
- *R99 (Release 1999)*
- *Rel-4 (Release 4)*
- *Rel-5 (Release 5)*
- *Rel-6 (Release 6)*
- *Rel-7 (Release 7)*

Reason for change: ⌘ 1)The definition of the test needs to be clarified to explicitly state that the bler-quality target for the DCCH should be set low enough so that it does not dominate the one for the DTCH.
2) Initial Conditions and the Test Procedure are not clear.

Summary of change: ⌘
1) Added a note to section 7.8 to explicitly state that the bler-quality target for the DCCH should be set low enough so that it does not dominate the one for the DTCH.
2) Introduced a new table 7.8.1.3A to reflect the change in The RRC CONNECTION SETUP message to set the DCCH bler-quality target to 0 (100% BLER).
3) The steps in the Initial conditions and test procedures were modified to make the test clearer.

Consequences if not approved: ⌘ Test case will not produce consistent results since the BLER setting for the DCCH might interfere with the one for the DTCH.

Clauses affected: ⌘ 7.8, 7.8.1, 7.8.2, 7.8.3, Annex I

Other specs affected: ⌘

Y	N		
	X	Other core specifications	⌘
	X	Test specifications	
	X	O&M Specifications	

Other comments: ⌘ This CR is applicable to UEís supporting Rel-99 or later.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.8 Power control in downlink

Power control in the downlink is the ability of the UE receiver to converge to required link quality set by the network while using as low power as possible in downlink. If a BLER target has been assigned to a DCCH (See clause C.3), then it has to be such that outer loop is based on DTCH and not on DCCH.

Note: The above implies that the BLER target for the DCCH should be set low enough so that it does not dominate the one for the DTCH.

7.8.1 Power control in the downlink, constant BLER target

7.8.1.1 Definition and applicability

Power control in the downlink is the ability of the UE receiver to converge to required link quality set by the network while using as low power as possible in downlink. If a BLER target has been assigned to a DCCH (See clause C.3), then it has to be such that outer loop is based on DTCH and not on DCCH. The requirements and this test apply to all types of UTRA for the FDD UE.

7.8.1.2 Minimum requirements

For the parameters specified in table 7.8.1.1 the downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio measured values, which are averaged over one slot, shall be below the specified value in table 7.8.1.2 more than 90% of the time. BLER shall be as shown in table 7.8.1.2. Power control in downlink is ON during the test.

Table 7.8.1.1: Test parameter for downlink power control, constant BLER target

Parameter	Test 1	Test 2	Unit
$\hat{I}_{or}/I_{oc}$	9	-1	dB
I_{oc}	–60		dBm / 3,84 MHz
Information Data Rate	12,2		kbps
Target quality on DTCH	0,01		BLER
Propagation condition	Case 4		
Maximum_DL_Power (note)	7		dB
Minimum_DL_Power (note)	-18		dB
DL Power Control step size, Δ_{TPC}	1		dB
Limited Power Increase	"Not used"		-
NOTE: Power is compared to P-CPICH as specified in [9].			

Table 7.8.1.2: Requirements in downlink power control, constant BLER target

Parameter	Test 1	Test 2	Unit
$\frac{DPCH\_E_c}{I_{or}}$	-16,0	-9,0	dB
Measured quality on DTCH	0,01 ± 30 %	0,01 ± 30 %	BLER

The reference for this requirement is TS 25.101 [1] clause 8.8.1.1.

7.8.1.3 Test purpose

To verify that the UE receiver is capable of converging to required link quality set by network while using as low power as possible.

7.8.1.4 Method of test

7.8.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect SS, multipath fading simulator and an AWGN source to the UE antenna connector as shown in figure A.10.
2) Set up a call according to the Generic call setup procedure specified in TS 34.108 [3] clause 7.3.2, with the exception of the information element of the RRC CONNECTION SETUP message listed in Annex I. With this exception, the outer loop is based on DTCH and not on DCCH.
3) RF parameters are set up according to table 7.8.1.3.
4) Enter the UE into loopback test mode and start the loopback test.
5) ~~SS signals to UE target quality value on DTCH as specified in table 7.8.1.3.~~ SS will vary the physical channel power in downlink according to the TPC commands from UE. Downlink power control mode (DPC_MODE) 0 shall be used. At the same time BLER is measured. This is continued until the target quality value on DTCH, specified in Table 7.8.1.1 is met~~,~~ within the minimum accuracy requirement~~,~~ specified in Table 7.8.1.2.

See TS 34.108 [3] and TS 34.109 [4] for details regarding generic call setup procedure and loopback test.

7.8.1.4.2 Procedure

1) After the target quality on DTCH is met, BLER is measured. Simultaneously the downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio averaged over one slot is measured. ~~This is repeated until adequate amount of measurements is done to reach the required confidence level.~~
2) The measured quality on DTCH (BLER) and the measured downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio values averaged over one slot are compared to limits in table 7.8.1.2.

7.8.1.5 Test Requirements

The test parameters are specified in table 7.8.1.3.

Table 7.8.1.3: Test parameter for downlink power control, constant BLER target

Parameter	Test 1	Test 2	Unit
$\hat{I}_{or}/I_{oc}$	9,6	-0,4	dB
I_{oc}	–60		dBm / 3,84 MHz
Information Data Rate	12,2		kbps
Target quality on DTCH	0,01		BLER
Propagation condition	Case 4		
Maximum_DL_Power (note)	7		dB
Minimum_DL_Power (note)	-18		dB
DL Power Control step size, Δ_{TPC}	1		dB
Limited Power Increase	"Not used"		-
NOTE: Power is compared to P-CPICH as specified in [9].			

a) The measured quality on DTCH does not exceed the values in table 7.8.1.4.

b) The downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio values, which are averaged over one slot, shall be below the values in table 7.8.1.4 more than 90 % of the time.

Table 7.8.1.4: Requirements in downlink power control, constant BLER target

Parameter	Test 1	Test 2	Unit
$\frac{DPCH\_E_c}{I_{or}}$	-15,9	-8,9	dB
Measured quality on DTCH	0,01 ± 30 %	0,01 ± 30 %	BLER

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

7.8.2 Power control in the downlink, initial convergence

7.8.2.1 Definition and applicability

This requirement verifies that DL power control works properly during the first seconds after DPCH connection is established. The requirements and this test apply to all types of UTRA for the FDD UE.

7.8.2.2 Minimum requirements

For the parameters specified in table 7.8.2.1 the downlink DPCH_Ec/Ior power ratio measured values, which are averaged over 50 ms, shall be within the range specified in table 7.8.2.2 more than 90 % of the time. T1 equals to 500 ms and it starts 10 ms after the uplink DPDCH physical channel is considered established. T2 equals to 500 ms and it starts when T1 has expired. Power control is ON during the test.

The first 10 ms shall not be used for averaging, i.e. the first sample to be input to the averaging filter is at the beginning of T1. The averaging shall be performed with a sliding rectangular window averaging filter. The window size of the averaging filter is linearly increased from 0 up to 50 ms during the first 50 ms of T1, and then kept equal to 50ms.

Table 7.8.2.1: Test parameters for downlink power control, initial convergence

Parameter	Test 1	Test 2	Test 3	Test 4	Unit
Target quality value on DTCH	0,01	0,01	0,1	0,1	BLER
Initial DPCH_Ec/Ior	-5,9	-25,9	-3	-22,8	dB
Information Data Rate	12,2	12,2	64	64	kbps
$\hat{I}_{or}/I_{oc}$	-1				dB
I_{oc}	-60				dBm/3,84 MHz
Propagation condition	Static				
Maximum_DL_Power (note)	7				dB
Minimum_DL_Power (note)	-18				dB
DL Power Control step size, Δ_{TPC}	1				dB
Limited Power Increase	"Not used"				
NOTE: Power is compared to P-CPICH as specified in [9].					

Table 7.8.2.2: Requirements in downlink power control, initial convergence

Parameter	Test 1 and Test 2	Test 3 and Test 4	Unit
$\frac{DPCH\_E_c}{I_{or}}$ during T1	-18,9 ≤ DPCH_Ec/Ior ≤ -11,9	-15,1 ≤ DPCH_Ec/Ior ≤ -8,1	dB
$\frac{DPCH\_E_c}{I_{or}}$ during T2	-18,9 ≤ DPCH_Ec/Ior ≤ -14,9	-15,1 ≤ DPCH_Ec/Ior ≤ -11,1	dB

The reference for this requirement is TS 25.101 [1] clause 8.8.2.1.

7.8.2.3 Test purpose

To verify that DL power control works properly during the first seconds after DPCH connection is established.

7.8.2.4 Method of test

7.8.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect SS, multipath fading simulator and an AWGN source to the UE antenna connector as shown in figure A.10.

2) Set up a call according to the Generic call setup procedure specified in TS 34.108 [3] clause 7.3.2, with the exception of the information element of the RRC CONNECTION SETUP message listed in Annex I. With this exception, the outer loop is based on DTCH and not on DCCH.

3) RF parameters are set up according to table 7.8.2.3.

7.8.2.4.2 Procedure

1) Enter the UE into loopback test mode and start the loopback test.

~~Set up call using test parameters according to table 7.8.2.1.~~

2) ~~SS signals to UE target quality value on DTCH as specified in table 7.8.2.3.~~ SS will vary the physical channel power in downlink according to the TPC commands from UE. Downlink power control mode (DPC_MODE) 0 shall be used.

3) Measure $\frac{DPCH\_E_c}{I_{or}}$ power ratio averaged over 50 ms during T1. T1 starts 10 ms after the uplink DPDCH physical channel is considered established and T1 equals to 500 ms. The first 10 ms shall not be used for averaging, i.e. the first sample to be input to the averaging filter is at the beginning of T1. The averaging shall be performed with a sliding rectangular window averaging filter. The window size of the averaging filter is linearly increased from 0 up to 50 ms during the first 50 ms of T1, and then kept equal to 50ms.

4) Measure $\frac{DPCH\_E_c}{I_{or}}$ power ratio averaged over 50 ms during T2. T2 starts, when T1 has expired and T2 equals to 500 ms.

7.8.2.5 Test Requirements

The test parameters are specified in table 7.8.2.3.

Table 7.8.2.3: Test parameters for downlink power control, initial convergence

Parameter	Test 1	Test 2	Test 3	Test 4	Unit
Target quality value on DTCH	0,01	0,01	0,1	0,1	BLER
Initial DPCH_Ec/Ior	-5,9	-25,9	-3	-22,8	dB
Information Data Rate	12,2	12,2	64	64	kbps
$\hat{I}_{or}/I_{oc}$	-0,4				dB
I_{oc}	-60				dBm/3,84 MHz
Propagation condition	Static				
Maximum_DL_Power (note)	7				dB
Minimum_DL_Power (note)	-18				dB
DL Power Control step size, Δ_{TPC}	1				dB
Limited Power Increase	"Not used"				
NOTE: Power is compared to P-CPICH as specified in [9].					

a) The downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio values shall be within the range specified in table 7.8.2.4 during T1 more than 90 % of the time.

b) The downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio values shall be within the range specified in table 7.8.2.4 during T2 more than 90 % of the time.

Table 7.8.2.4: Requirements in downlink power control, initial convergence

Parameter	Test 1 and Test 2	Test 3 and Test 4	Unit
$\frac{DPCH\_E_c}{I_{or}}$ during T1	-18,8 ≤ DPCH_Ec/Ior ≤ -11,8	-15,0 ≤ DPCH_Ec/Ior ≤ -8,0	dB
$\frac{DPCH\_E_c}{I_{or}}$ during T2	-18,8 ≤ DPCH_Ec/Ior ≤ -14,8	-15,0 ≤ DPCH_Ec/Ior ≤ -11,0	dB

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

7.8.3 Power control in the downlink, wind up effects

7.8.3.1 Definition and applicability

This requirement verifies that, after the downlink maximum power is limited in the UTRAN and it has been released again, the downlink power control in the UE does not have a wind up effect, i.e. the required DL power has increased during time period the DL power was limited. The requirements and this test apply to all types of UTRA for the FDD UE.

7.8.3.2 Minimum requirements

This test is run in three stages where stage 1 is for convergence of the power control loop, in stage two the maximum downlink power for the dedicated channel is limited not to be higher than the parameter specified in table 7.8.3.1. All parameters used in the three stages are specified in table 7.8.3.1. The downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio measured values, which are averaged over one slot, during stage 3 shall be lower than the value specified in table 7.8.3.2 more than 90 % of the time. Power control of the UE is ON during the test.

Table 7.8.3.1: Test parameter for downlink power control, wind-up effects

Parameter	Test 1			Unit
	Stage 1	Stage 2	Stage 3	
Time in each stage	>15	5	0,5	s
$\hat{I}_{or}/I_{oc}$	5			dB
I_{oc}	-60			dBm/3,84 MHz
Information Data Rate	12,2			kbps
Quality target on DTCH	0,01			BLER
Propagation condition	Case 4			
Maximum_DL_Power (note)	7	-6,2	7	dB
Minimum_DL_Power (note)	-18			dB
DL Power Control step size, Δ_{TPC}	1			dB
Limited Power Increase	"Not used"			-
NOTE: Power is compared to P-CPICH as specified in [9].				

Table 7.8.3.2: Requirements in downlink power control, wind-up effects

Parameter	Test 1, stage 3	Unit
$\frac{DPCH\_E_c}{I_{or}}$	-13,3	dB

The reference for this requirement is TS 25.101 [1] clause 8.8.3.1.

7.8.3.3 Test purpose

To verify that the UE downlink power control does not require too high downlink power during a period after the downlink power is limited by the UTRAN.

7.8.3.4 Method of test

7.8.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect SS, multipath fading simulator and an AWGN source to the UE antenna connector as shown in figure A.10.

2) Set up a call according to the Generic call setup procedure~~.~~ specified in TS 34.108 [3] clause 7.3.2, with the exception of the information element of the RRC CONNECTION SETUP message listed in Annex I. With this exception, the outer loop is based on DTCH and not on DCCH.

3) Enter the UE into loopback test mode and start the loopback test.

See TS 34.108 [3] and TS 34.109 [4] for details regarding generic call setup procedure and loopback test.

7.8.3.4.2 Procedure

1) RF parameters are set up according to table 7.8.3.3. Stage 1 is used for the power control to converge and during Stage 2 the maximum downlink power is limited by UTRAN.

2) ~~SS signals to UE target quality value on DTCH as specified in table 7.8.3.1.~~ SS will vary the physical channel power in downlink according to the TPC commands from UE during stages 1, 2, and 3. Downlink power control mode (DPC_MODE) 0 shall be used.

3) Measure $\frac{DPCH\_E_c}{I_{or}}$ power ratio during stage 3 according to table 7.8.3.3.

4) Repeat steps 1 ñ 3 328 times.

Note: The number of repetitions (328) is derived from minimum testing time for 3 km/h fading channels (Table F.6.1.6.2; 164 seconds).

7.8.3.5 Test Requirements

The test parameters are specified in table 7.8.3.3.

Table 7.8.3.3: Test parameter for downlink power control, wind-up effects

Parameter	Test 1			Unit
	Stage 1	Stage 2	Stage 3	
Time in each stage	>15	5	0,5	s
$\hat{I}_{or}/I_{oc}$	5,6			dB
I_{oc}	-60			dBm/3,84 MHz
Information Data Rate	12,2			kbps
Quality target on DTCH	0,01			BLER
Propagation condition	Case 4			
Maximum_DL_Power (note)	7	-6,2	7	dB
Minimum_DL_Power (note)	-18			dB
DL Power Control step size, Δ_{TPC}	1			dB
Limited Power Increase	"Not used"			-
NOTE: Power is compared to P-CPICH as specified in [9].				

The downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio values, which are averaged over one slot, shall be lower than the level specified in table 7.8.3.4 during stage 3 more than 90 % of the time.

Table 7.8.3.4: Requirements in downlink power control, wind-up effects

Parameter	Test 1, stage 3	Unit
$\frac{DPCH\_E_c}{I_{or}}$	-13,2	dB

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

<<<<<< Unchanged Sections Removed >>>>>>>>>>

Annex I (normative):
Default Message Contents

This Annex contains the default values of common messages, other than those described in TS 34.108. The messages are primarily concerning the RRM test cases in clause 8 and unless indicated otherwise in specific test cases, shall be transmitted and checked by the system simulator. ~~The necessary messages are listed in alphabetical order.~~

In this Annex, decimal values are normally used. However, sometimes, a hexadecimal value, indicated by an "H", or a binary value, indicated by a "B" is used.

Contents of MEASUREMENT REPORT message for Intra frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Not present
- Cell synchronisation information	
- Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
- CPICH Ec/N0	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
- CPICH RSCP	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
- Pathloss	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

Contents of MEASUREMENT REPORT message for Inter frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Inter-frequency measured results list	
- UTRA Carrier RSSI	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Not present
- Cell synchronisation information	
-Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
- CPICH Ec/N0	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
- CPICH RSCP	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
- Pathloss	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

Contents of MEASUREMENT REPORT message for inter ñ RAT test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Inter-RAT measured results list	
- CHOICE system	GSM
- GSM	
- Measured GSM cells	Checked that this IE is present
- GSM carrier RSSI	If reporting of ìGSM carrier RSSIì measurement is configured then checkChecked that this IE is present
- CHOICE *BSIC*	Non verified BSIC
- Non verified BSIC	
- BCCH ARFCN	Checked that this IE is present
- Observed time difference to GSM cell	If reporting of ìObserved time difference to GSM cellì measurement configured then checkChecked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

Contents of RRC CONNECTION SETUP message: UM (Transition to CELL_DCH)

The following information element is exception of TS34.108 for test cases 7.8.1, 7.8.2, and 7.8.3.

Information Element	Value/remark
Added or Reconfigured DL TrCH information	
- DCH quality target	
- BLER Quality value	0.0

Contents of Master Information Block PLMN type is the case of GSM-MAP

The following information element is exception of TS34.108 based on monitorlist size for 8.3.4, 8.4.1.1, 8.4.1.2, 8.6.1.1, 8.6.1.2, 8.6.1.3, 8.6.1.4, 8.6.2.1 test cases.

Information Element	Value/Remark
- SIB_POS	1
- SIB_POS offset info	Not Present
- SIB and SB type	Scheduling Block 1
- SIB_REP	128
- SIB_POS	11
- SIB_POS offset info	Not Presen
- SIB and SB type	System Information Type 1
- SIB_REP	128
- SIB_POS	11
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 2
- SIB_REP	128
- SIB_POS	10
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 3
- SIB_REP	128
- SIB_POS	26
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 4
- SIB_REP	128
- SIB_POS	19
- SIB_POS offset info	3
- SIB and SB type	System Information Type 5

Contents of Scheduling Block 1 (FDD) size

The following information element is exception of TS34.108 based on monitorlist size for 8.4.1.1,8.4.1.2,8.6.1.1,8.6.1.4 test cases.

Information Element	Value/Remark
- References to other system information blocks	
- SIB_REP	128
- SIB_POS	3
- SIB_POS offset info	3
- SIB type SIBs only	System Information Type 6
- SIB_POS	2
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	4
- SIB_REP	128
- SIB_POS	27
- SIB_POS offset info	3
- SIB_OFF	4
- SIB type SIBs only	System Information Type 11
- SIB_REP	128
- SIB_POS	13
- SIB_POS offset info	2
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SIB_REP	128
- SIB_POS	18
- SIB type SIBs only	System Information Type 18

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.4.1.1,8.4.1.2,8.6.1.1,8.6.1.4

Information Element	Value/Remark
- Intra-frequency measurement system information	
- New intra-frequency cells	24
- Intra-frequency cell id	9+n (n=0 to 18)
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlaped values.
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present

Contents of Scheduling Block 1 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.3.4, 8.6.1.2,8.6.1.3.

Information Element	Value/Remark
- References to other system information blocks	
- SIB_REP	128
- SIB_POS	3
- SIB_POS offset info	3
- SIB type SIBs only	System Information Type 6
- SIB_POS	2
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	5
- SIB_REP	128
- SIB_POS	27
- SIB_POS offset info	4
- SIB_OFF	4
- SIB_OFF	2
- SIB_OFF	2
- SIB_OFF	8
- SIB type SIBs only	System Information Type 11
- SIB_REP	128
- SIB_POS	13
- SIB_POS offset info	2
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- SIB_REP	128
- SIB_POS	18
- SIB type SIBs only	System Information Type 18

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.3.4.

Information Element	Value/Remark
- Intra-frequency measurement system information	
- New intra-frequency cells	24
- Intra-frequency cell id	9+n (n=0 to 18)
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlaped values.
- Inter-frequency measurement system information	Not present
- Inter-RAT measurement system information	
- Inter-RAT cell info list	
- Inter-RAT cell id	11+n (n=0 to 3)
- CHOICE *Radio Access Technology*	GSM
- GSM	
- Cell individual offset	0
- Cell selection and re-selection info	Not Present
- BSIC	
- Base transceiver Station Identity Code (BSIC)	Note:Any values depend on UEs.
- Band indicator	According to PICS/PIXIT
- BCCH ARFCN	Note:Any values that depend on UEs.

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.1.2,8.6.1.3.

Information Element	Value/Remark
- Intra-frequency measurement system information	
- New intra-frequency cells	32
- Intra-frequency cell id	9+n(n=0 to 22)
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlaped values.
- Intra-frequency cell id	0
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlaped values.
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present

Contents of Scheduling Block 1 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.2.1 test case.

Information Element	Value/Remark
- References to other system information blocks	
- SIB_REP	128
- SIB_POS	3
- SIB_POS offset info	3
- SIB type SIBs only	System Information Type 6
- SIB_POS	2
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	6
- SIB_REP	128
- SIB_POS	27
- SIB_POS offset info	5
- SIB_OFF	4
- SIB_OFF	2
- SIB_OFF	2
- SIB_OFF	8
- SIB_OFF	4
- SIB type SIBs only	System Information Type 11
- SIB_REP	128
- SIB_POS	13
- SIB_POS offset info	5
- SIB_OFF	2
- SIB_OFF	8
- SIB_OFF	4
- SIB_OFF	2
- SIB_OFF	2
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	1
- SIB_REP	128
- SIB_POS	18
- SIB type SIBs only	System Information Type 18

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.2.1.

Information Element	Value/Remark
- New intra-frequency cells	24
- Intra-frequency cell id	9+n(n=0 to18)
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlaped values.
- Inter-frequency measurement system information	
- New inter-frequency cells	16
- Inter frequency cell id	7+n (n =0 to 12)
- Frequency info	Not Present Absence of this IE is equivalent to value of the previous "frequency info" in the list.
- Cell info	Same content as specified for Inter-frequency cell id=4 with the exception that value for Primary scrambling code shall not be overlaped values.
- Inter-RAT measurement system information	Not Present

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CHANGE REQUEST

⌘	34.121	CR	475	⌘rev	-	⌘	Current version:	5.5.0	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Corrections to Information elements for Monitored Cells in Annex I.
Source:	⌘	Anritsu, Rohde & Schwarz
Work item code:	⌘	
Date:	⌘	05/11/2004
Category:	⌘	F
Release:	⌘	Rel-5

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(addition of feature),*
- ***C*** *(functional modification of feature)*
- ***D*** *(editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
- *Ph2 (GSM Phase 2)*
- *R96 (Release 1996)*
- *R97 (Release 1997)*
- *R98 (Release 1998)*
- *R99 (Release 1999)*
- *Rel-4 (Release 4)*
- *Rel-5 (Release 5)*
- *Rel-6 (Release 6)*
- *Rel-7 (Release 7)*

Reason for change: ⌘

a) Value of SIB_POS in Annex I is expressed differently than in 34.108.

b) SIB 11 descriptions are not compatible with the default SIB11 in 34.108.

c) Missing SIB11 description for TC 8.6.2.2.

d) Scheduling Block 1 description for test case 8.6.2.1 incorrect.

e) Missing references to Annex I.

Summary of change: ⌘

a) SIB_POS value expressed in multiples of frames rather than multiple of two frames in Annex I.
b) Cell ID range for the monitored Cells made compatible with SIB11 description in 34.108 in Annex I.
c) Added SIB11 description for TC 8.6.2.2 into Annex I.
d) Corrected Scheduling Block 1 description for test case 8.6.2.1 from Annex I.
e) Added missing test case numbers in Annex I.
f) Added references to Annex I for some test cases which were missing it.
g) Minor editorial corrections.

Consequences if not approved: ⌘ The System information messages will be incorrect for test cases referring to Annex I for system information messages.

Clauses affected: ⌘ 8.6.1.1.A, 8.6.1.2.A, Annex I

		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6.1.1 A Event triggered reporting in AWGN propagation conditions (Rel-4 and later)

8.6.1.1 A.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the Rel-4 and later FDD UE.

8.6.1.1 A.2 Minimum requirements

The UE shall be able to identify and decode the SFN of a new detectable cell belonging to the monitored set within

$$\mathrm{T}_{\text{identify intra}} = Max\left\{800, \mathrm{T}_{\text{basic identify FDD, intra}} \cdot \frac{\mathrm{T}_{\text{Measurement Period, Intra}}}{\mathrm{T}_{\text{Intra}}}\right\} ms$$

A cell shall be considered detectable when CPICH Ec/Io $\geq$ -20 dB, SCH_Ec/Io $\geq$ -20 dB for at least one channel tap and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

In the CELL_DCH state the measurement period for intra frequency measurements is 200 ms. When no transmission gap pattern sequence is activated, the UE shall be capable of performing CPICH measurements for 8 identified intra-frequency cells of the monitored set and/or the active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 200 ms. When one or more transmission gap pattern sequences are activated, the UE shall be capable of performing CPICH measurements for at least $Y_{\text{measurement intra}}$ cells , where $Y_{\text{measurement intra}}$ is defined in the following equation. The measurement accuracy for all measured cells shall be as specified in the sub-clause 9.1.1 and 9.1.2 of TS 25.133 [2]. If the UE has identified more than $Y_{\text{measurement intra}}$ cells, the UE shall perform measurements of all identified cells but the reporting rate of CPICH measurements of cells from UE physical layer to higher layers may be decreased.

$$\mathrm{Y}_{\text{measurement intra}} = Floor\left\{X_{\text{basic measurement FDD}} \cdot \frac{\mathrm{T}_{\text{Intra}}}{\mathrm{T}_{\text{Measurement Period, Intra}}}\right\} \text{ cells}$$

where

$X_{\text{basic measurement FDD}}$ = 8 (cells)

$T_{\text{Measurement\_Period Intra}}$ = 200 ms. The measurement period for Intra frequency CPICH measurements.

T_{Intra} : This is the minimum time that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing.

$T_{\text{basic\_identify\_FDD, intra}}$ = 800 ms. This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.

The event triggered measurement reporting delay, on cells belonging to monitored set, measured without L3 filtering, shall be less than the above defined $T_{\text{identify intra}}$ defined above.

If a cell, belonging to monitored set, which the UE has identified and measured at least once over the measurement period, becomes undetectable for a period < 5 seconds and then the cell becomes detectable again and triggers an event, the measurement reporting delay shall be less than $T_{\text{Measurement\_Period Intra}}$ ms provided the timing to that cell has not changed more than +/-32 chips, the UE CPICH measurement capabilities defined above are valid and L3 filtering has not been used. When L3 filtering is used an additional delay can be expected.

If a cell belonging to monitored set has been detectable at least for the time period $T_{identify\_intra}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement\_Period\ Intra}$ when the L3 filter has not been used and the UE CPICH measurement capabilities defined above are valid.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.1.

8.6.1.1 A.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.1 A.4 Method of test

8.6.1.1 A.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in tables 8.6.1.1 A.1 to 8.6.1.1 A.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. During time duration T1, the UE shall not have any timing information of cell 2.

Table 8.6.1.1 A.1: General test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24	NOTE: See Annex I for cell information
T1	s	5	
T2	s	5	
T3	s	5	

Table 8.6.1.1 A.2: Cell specific test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
CPICH_Ec/Ior	dB	-10			-10		
PCCPCH_Ec/Ior	dB	-12			-12		
SCH_Ec/Ior	dB	-12			-12		
PICH_Ec/Ior	dB	-15			-15		
DPCH_Ec/Ior	dB	-17			N/A		
OCNS_Ec/Ior	dB	-1.049			-0.941		
$\hat{I}_{or}/I_{oc}$	dB	0	6.97	0	-Infinity	5.97	-Infinity
$\hat{I}_{or}$ (Note 1)	dBm	-70	-63.03	-70	-Infinity	-64.03	-Infinity
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/Io	dB	-13	-13	-13	-Infinity	-14	-Infinity
Propagation Condition		AWGN					
Note 1: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.							

8.6.1.1 A.4.2 Procedure

1. The RF parameters are set up according to T1 in table 8.6.1.1 A.3.
2. The UE is switched on.
3. A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
4. SS shall transmit a MEASUREMENT CONTROL message.
5. After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in table 8.6.1.1 A.3.
6. UE shall transmit a MEASUREMENT REPORT message triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
7. After 5 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3 in table 8.6.1.1 A.3.
8. UE shall transmit a MEASUREMENT REPORT message triggered by event 1B. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
9. After 5 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
10. Repeat steps 1-9 according to Annex F.6.2 Table 6.2.8.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0
-message authentication code -RRC message sequence number	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity (10.3.7.41)	Intra-frequency measurement Not Present 0 FDD CPICH_Ec/N0
-Reporting quantities for active set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE report criteria -Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event	Not Present Not Present Intra-frequency measurement reporting criteria 2
-Intra-frequency event identity -Triggering condition 2 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status	Event 1A Monitored set cells 3 dB Not Present 1.0 0 dB Not Present 0 Not Present 0 ms Not present 0 ms (Note 2) Not Present
-Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis	Event 1B Active set cells and monitored set cells 3 dB Not Present 1.0 0 dB

Information Element/Group name	Value/Remark
-Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status	Not Present Not Present Not Present 0 ms Not Present 0 ms (note 2) Not Present
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present
Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL. Note 2: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.1 A.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

Table 8.6.1.1 A.3: Test requirements for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
CPICH_Ec/Ior	dB	-9.3			-9.3		
PCCPCH_Ec/Ior	dB	-11.3			-11.3		
SCH_Ec/Ior	dB	-11.3			-11.3		
PICH_Ec/Ior	dB	-14.3			-14.3		
DPCH_Ec/Ior	dB	-16.3			N/A		
OCNS		-1.26			-1.13		
$\hat{I}_{or}/I_{oc}$ *(Note 1)*	dB	0	7.0	0	-Infinity	6.0	-Infinity
$\hat{I}_{or}$	dBm	-70	-63.0	-70	-Infinity	-64.0	-Infinity
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/Io *(Note 1)*	dB	-12.3	-12.3	-12.3	-Infinity	-13.3	-Infinity
Propagation Condition		AWGN					
Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters..							

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

{Unchanged Sections are clipped here}

8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)

8.6.1.2A.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the Rel-4 and later FDD UE.

8.6.1.2A.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1A.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.2.

8.6.1.2A.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.2A.4 Method of test

8.6.1.2A.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The initial test parameters are given in table 8.6.1.2A.1.

Table 8.6.1.2A.1: Cell specific initial test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	0	-Inf	-Inf
I_{oc}	dBm/ 3.84 MHz	-85		
CPICH_Ec/Io	dB	-13	-Inf	-Inf
Propagation Condition	AWGN			

The test parameters are given in table 8.6.1.2A.2 and 8.6.1.2A.3. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A, 1C and 1B shall be used and the periodical reporting of the events is not applied. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. In the initial condition before the time T1 only Cell1 is active.

Table 8.6.1.A2.2: General test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Replacement activation threshold		0	Applicable for event 1C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		32	NOTE: See Annex I for cell information
T1	S	10	
T2	S	10	
T3	S	5	
T4	S	10	

Table 8.6.1.2A.3: Cell specific test parameters for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2				Cell3			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
CPICH_Ec/Ior	dB	-10				-10				-10			
PCCPCH_Ec/Ior	dB	-12				-12				-12			
SCH_Ec/Ior	dB	-12				-12				-12			
PICH_Ec/Ior	dB	-15				-15				-15			
DPCH_Ec/Ior	dB	-17				N/A				N/A			
OCNS_Ec/Ior	dB	-1.049				-0.941				-0.941			
$\hat{I}_{or}/I_{oc}$	dB	6.97	6.93	5.97	6.12	-Inf	9.43	6.97	7.62	5.97	6.93	-Inf	5.62
I_{oc}	dBm/ 3.84 MHz	-85											
CPICH_Ec/Io	dB	-13	-16	-14	-15.5	-Inf	-13.5	-13	-14	-14	-16	-Inf	-16
Propagation Condition	AWGN												

8.6.1.2A.4.2 Procedure

1) The RF parameters are set up according to T0.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
4) SS shall transmit a MEASUREMENT CONTROL message.
5) 5 seconds after step4 has completed, the SS shall switch the power settings for T0 to T1.
6) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T1 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

7) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

8) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

9) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

10) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

11) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

12) After 10 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.

13) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1B. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

14) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

15) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4.

16) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

17) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

18) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

19) After 10 seconds from the beginning of T4, the UE is switched off.

20) Repeat steps 1-19 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	3
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)

Information Element/Group name	Value/Remark
-Reporting cell status	Not Present
-Intra-frequency event identity -Triggering condition 2 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status	Event 1C Active set cells and monitored set cells Not present Not Present Not present 0 dB Not Present Not present 0 0 ms Not Present 0 ms (Note 2) Not Present
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present
NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL. NOTE 2: Reporting interval = 0 ms means no periodical reporting.	

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.2A.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

{Unchanged Sections are clipped here}

Annex I (normative): Default Message Contents

This Annex contains the default values of common messages, other than those described in TS 34.108. The messages are primarily concerning the RRM test cases in clause 8 and unless indicated otherwise in specific test cases, shall be transmitted and checked by the system simulator. The necessary messages are listed in alphabetical order.

In this Annex, decimal values are normally used. However, sometimes, a hexadecimal value, indicated by an "H", or a binary value, indicated by a "B" is used.

Contents of MEASUREMENT REPORT message for Intra frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Not present
- Cell synchronisation information	
- Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
- CPICH Ec/N0	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
- CPICH RSCP	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
- Pathloss	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

Contents of MEASUREMENT REPORT message for Inter frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Inter-frequency measured results list	
- UTRA Carrier RSSI	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Not present
- Cell synchronisation information	
-Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
- CPICH Ec/N0	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
- CPICH RSCP	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
- Pathloss	If reporting of ìCPICH Ec/N0ì measurement is configured then checkChecked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

Contents of MEASUREMENT REPORT message for inter ñ RAT test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Inter-RAT measured results list	
- CHOICE system	GSM
- GSM	
- Measured GSM cells	Checked that this IE is present
- GSM carrier RSSI	If reporting of ìGSM carrier RSSIì measurement is configured then checkChecked that this IE is present
- CHOICE *BSIC*	Non verified BSIC
- Non verified BSIC	
- BCCH ARFCN	Checked that this IE is present
- Observed time difference to GSM cell	If reporting of ìObserved time difference to GSM cellì measurement configured then checkChecked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

Contents of Master Information Block PLMN type is the case of GSM-MAP

The following information element is exception of TS34.108 based on monitorlist size for 8.3.4, 8.3.5.3, 8.4.1.1, 8.4.1.2, 8.6.1.1,8.6.1.1A, 8.6.1.2, 8.6.1.2A, 8.6.1.3, 8.6.1.4, 8.6.2.1,8.6.2.2, 8.6.4.1 test cases.

Information Element	Value/Remark
- SIB_POS	~~1~~2
- SIB_POS offset info	Not Present
- SIB and SB type	Scheduling Block 1
- SIB_REP	128
- SIB_POS	~~11~~22
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 1
- SIB_REP	128
- SIB_POS	~~11~~22
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 2
- SIB_REP	128
- SIB_POS	~~10~~20
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 3
- SIB_REP	128
- SIB_POS	~~26~~52
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 4
- SIB_REP	128
- SIB_POS	~~19~~38
- SIB_POS offset info	3
- SIB and SB type	System Information Type 5

Contents of Scheduling Block 1 (FDD) ~~size~~

The following information element is exception of TS34.108 based on monitorlist size for 8.4.1.1,8.4.1.2,8.6.1.1,8.6.1.1A,8.6.1.4,8.6.2.2 test cases.

Information Element	Value/Remark
- References to other system information blocks	
- SIB_REP	128
- SIB_POS	~~3~~6
- SIB_POS offset info	3
- SIB type SIBs only	System Information Type 6
- SIB_POS	~~2~~4
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	4
- SIB_REP	128
- SIB_POS	~~27~~54
- SIB_POS offset info	3
- SIB_OFF	4
- SIB_OFF	2
- SIB_OFF	2
- SIB type SIBs only	System Information Type 11
- SIB_REP	128
- SIB_POS	~~13~~26
- SIB_POS offset info	2
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SIB_REP	128
- SIB_POS	~~18~~36
- SIB type SIBs only	System Information Type 18

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.4.1.1,8.4.1.2,8.6.1.1,8.6.1.1A,8.6.1.4.

Information Element	Value/Remark
- Intra-frequency measurement system information	
- New intra-frequency cells	24
- Intra-frequency cell id	~~9~~12+n (n=0 to 1~~8~~7)
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.2.2.

Information Element	Value/Remark
- New intra-frequency cells	16
- Intra-frequency cell id	12+n (n=0 to 3)
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-frequency measurement system information	
- New inter-frequency cells	8
- Inter frequency cell id	7+n (n =0 to 4)
- Frequency info	Not Present Absence of this IE is equivalent to value of the previous "frequency info" in the list.
- Cell info	Same content as specified for Inter-frequency cell id=4 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-RAT measurement system information	Not Present

Contents of Scheduling Block 1 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.3.4, 8.3.5.3, 8.6.1.2,8.6.1.2A, 8.6.1.3, 8.6.4.1.

Information Element	Value/Remark
- References to other system information blocks	
- SIB_REP	128
- SIB_POS	~~3~~6
- SIB_POS offset info	3
- SIB type SIBs only	System Information Type 6
- SIB_POS	~~2~~4
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	5
- SIB_REP	128
- SIB_POS	~~27~~54
- SIB_POS offset info	4
- SIB_OFF	4
- SIB_OFF	2
- SIB_OFF	2
- SIB_OFF	8
- SIB type SIBs only	System Information Type 11
- SIB_REP	128
- SIB_POS	~~13~~26
- SIB_POS offset info	2
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- SIB_REP	128
- SIB_POS	~~18~~36
- SIB type SIBs only	System Information Type 18

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.3.4, 8.3.5.3, 8.6.4.1~~.~~

Information Element	Value/Remark
- Intra-frequency measurement system information - New intra-frequency cells - Intra-frequency cell id - Cell info	 24 ~~9~~12+n (n=0 to 1~~8~~7) Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-frequency measurement system information	Not present
- Inter-RAT measurement system information - Inter-RAT cell info list - Inter-RAT cell id - CHOICE *Radio Access Technology* - GSM - Cell individual offset - Cell selection and re-selection info - BSIC - Base transceiver Station Identity Code (BSIC) - Band indicator - BCCH ARFCN	 11+n (n=0 to 3) GSM 0 Not Present Note:Any values depend on UEs. According to PICS/PIXIT Note:Any values that depend on UEs.

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.1.2,8.6.1.2A,8.6.1.3.

Information Element	Value/Remark
- Intra-frequency measurement system information	
- New intra-frequency cells	32
- Intra-frequency cell id	~~9+~~n(n=0, 4, 5, 6, 9, 10 and 12 to ~~22~~31)
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlapped values.
~~- Intra-frequency cell id~~	~~0~~
~~- Cell info~~	~~Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlaped values.~~
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present

Contents of Scheduling Block 1 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.2.1 test case.

Information Element	Value/Remark
- References to other system information blocks	
- SIB_REP	128
- SIB_POS	~~3~~6
- SIB_POS offset info	3
- SIB type SIBs only	System Information Type 6
- SIB_POS	~~2~~4
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	6
- SIB_REP	128
- SIB_POS	~~27~~54
- SIB_POS offset info	5
- SIB_OFF	4
- SIB_OFF	2
- SIB_OFF	2
- SIB_OFF	8
- SIB_OFF	4
- SIB type SIBs only	System Information Type 11
- SIB_REP	128
- SIB_POS	~~13~~26
- SIB_POS offset info	~~5~~2
~~- SIB_OFF~~	~~2~~
~~- SIB_OFF~~	~~8~~
~~- SIB_OFF~~	~~4~~
~~- SIB_OFF~~	~~2~~
~~- SIB_OFF~~	~~2~~
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	1
- SIB_REP	128
- SIB_POS	~~18~~36
- SIB type SIBs only	System Information Type 18

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.2.1.

Information Element	Value/Remark
- New intra-frequency cells	24
- Intra-frequency cell id	~~9~~12+n(n=0 to~~18~~17)
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-frequency measurement system information	
- New inter-frequency cells	16
- Inter frequency cell id	7+n (n =0 to 12)
- Frequency info	Not Present Absence of this IE is equivalent to value of the previous "frequency info" in the list.
- Cell info	Same content as specified for Inter-frequency cell id=4 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-RAT measurement system information	Not Present

3GPP TSG-T1 Meeting #25
St Paul's Bay, Malta, 1st - 5th November 2004

Tdoc ⌘ T1-041882

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	476	⌘ **rev**	**-**	⌘ Current version:	**5.5.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Introduction of UMTS-850 MHz band V		
Source:	⌘	Motorola		
Work item code:	⌘	TEI	***Date:*** ⌘	29/09/2004
Category:	⌘	**F**	***Release:*** ⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*	

Reason for change:	⌘	The introduction of UMTS-850 MHz band V to the specification
Summary of change:	⌘	Operating Band V is added to the appropriate RRM test cases.
Consequences if not approved:	⌘	The feature UMTS-850 MHz band V would not be tested.

Clauses affected:	⌘	8.7.1, 8.7.2, 8.7.3				
		Y	**N**			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR is applicable for UEís supporting this release independent feature				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.7.1 CPICH RSCP

8.7.1.1 Intra frequency measurements accuracy

8.7.1.1.1 Absolute accuracy requirement

8.7.1.1.1.1 Definition and applicability

The absolute accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the actual CPICH RSCP power from same cell.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.1.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

$CPICH\_RSCP1|_{dBm} \geq -114$ dBm for Bands I and VI,

$CPICH\_RSCP1|_{dBm} \geq -112$ dBm for Bands II and V,

$CPICH\_RSCP1|_{dBm} \geq -111$ dBm for Band III.

$$\left.\frac{I_o}{\hat{I}_{or}}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$$

Table 8.7.1.1.1.1: CPICH_RSCP Intra frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Band I and VI Io [dBm/3.84 MHz]	Band II and V Io [dBm/3.84 MHz]	Band III Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	± 6	± 9	-94...-70	-92Ö -70	-91Ö -70
	dBm	± 8	± 11	-70...-50	-70Ö -50	-70Ö -70

~~The accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:~~

~~$CPICH\_RSCP1|_{dBm} \geq -114$ dBm for Band I,~~

~~$CPICH\_RSCP1|_{dBm} \geq -112$ dBm for Band II,~~

~~$CPICH_RSCP1|_{dBm} \geq -111$dBm for Band III.~~

$$\cancel{\left.\frac{I_o}{\hat{I}_{or}}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB}$$

~~**Table 8.7.1.1.1.1: CPICH_RSCP Intra frequency absolute accuracy**~~

~~Parameter~~	~~Unit~~	~~Accuracy [dB]~~		~~Conditions~~		
				~~Io [dBm/3.84 MHz]~~		
		~~Normal condition~~	~~Extreme condition~~	~~Band I~~	~~Band II~~	~~Band III~~
~~CPICH_RSCP~~	~~dBm~~	~~±6~~	~~±9~~	~~-94...-70~~	~~-92...-70~~	~~-91...-70~~
	~~dBm~~	~~±8~~	~~±11~~	~~-70...-50~~	~~-70...-50~~	~~-70...-50~~

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.1 and A.9.1.1.2.

8.7.1.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP absolute measurement accuracy is within the specified limits in clause 8.7.1.1.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.1.1.4 Method of test

8.7.1.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. CPICH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Table 8.7.1.1.1.2: CPICH RSCP Intra frequency parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-75.54		-59.98		-97.47	
	Band II						-95.47	
	Band III						-94.47	
Îor/Ioc		dB	4	0	9	0	0	-6.53
CPICH RSCP, Note 1	Band I	dBm	-81.5	-85.5	-60.98	-69.88	-107.47	-114.0
	Band II						-105.47	-112.0
	Band III						-104.47	-111.0
Io, Note 1	Band I	dBm/3.84 MHz	-69		-50		-94	
	Band II						-92	
	Band III						-91	
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

8.7.1.1.1.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.4.

2) SS shall transmit MEASUREMENT CONTROL message.

3) UE shall transmit periodically MEASUREMENT REPORT messages.

4) SS shall check CPICH_RSCP value in MEASUREMENT REPORT messages. CPICH RSCP power of Cell 1 r and Cell 2 eported by UE is compared to actual CPICH RSCP power for each MEASUREMENT REPORT message.

5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.4 for Test 3. While RF parameters

are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated.

6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Intra-frequency measurement - Intra-frequency measurement objects list -Intra-frequency measurement quantity -Filter coefficient -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity -Reporting quantities for active set cells -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for monitored set cells -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for detected set cells -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -CHOICE *report criteria* -Amount of reporting -Reporting interval	 5 SETUP Acknowledged mode RLC Periodical reporting Not Present Intra-frequency measurement Not Present 0 FDD CPICH RSCP TRUE TRUE FDD TRUE TRUE FALSE FALSE TRUE FDD TRUE TRUE FALSE Not Present Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Periodical reporting criteria Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.1.1.5 Test requirements

Table 8.7.1.1.1.3: CPICH_RSCP Intra frequency absolute accuracy, test requirement

Parameter	Unit	Accuracy [dB]		Conditions		
				Io [dBm/3.84 MHz]		
		Normal condition	Extreme condition	Band I	Band II	Band III
CPICH_RSCP	dBm	±7.4	±10.4	-94...-70	-92...-70	-91...-70
	dBm	±9.4	±12.4	-70...-50	-70...-50	-70...-50

Table 8.7.1.1.1.4: CPICH RSCP Intra frequency test parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-74.54		-61,6		-96.47	
	Band II						-94.47	
	Band III						-93.47	
Îor/Ioc		dB	4.3	0.3	9.3	0.3	0.3	-6.23
CPICH RSCP, Note 1	Band I	dBm	-80.2	-84.2	-62.3	-71.3	-106.17	-112.7
	Band II						-104.17	-110.7
	Band III						-103.17	-109.7
Io, Note 1	Band I	dBm / 3.84 MHz	-67.8		-51,4		-92,8	
	Band II						-90.8	
	Band III						-89.8	
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

The reported values for the absolut intra frequency CPICH RSCP measurement shall meet the requirements in table 8.7.1.1.1.5.

Table 8.7.1.1.1.5: CPICH_RSCP Intra frequency absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3 (Band I)	Test 3 (Band II)	Test 3 (Band III)
Normal Conditions					
Lowest reported value (Cell 1)	CPICH_RSCP_26	CPICH_RSCP_44	CPICH_RSCP_2	CPICH_RSCP_4	CPICH_RSCP_5
Highest reported value (Cell 1)	CPICH_RSCP_45	CPICH_RSCP_63	CPICH_RSCP_17	CPICH_RSCP_19	CPICH_RSCP_20
Lowest reported value (Cell 2)	CPICH_RSCP_22	CPICH_RSCP_35	CPICH_RSCP_0	CPICH_RSCP_0	CPICH_RSCP_0
Highest reported value (Cell 2)	CPICH_RSCP_41	CPICH_RSCP_54	CPICH_RSCP_10	CPICH_RSCP_12	CPICH_RSCP_13
Extreme Conditions					
Lowest reported value (Cell 1)	CPICH_RSCP_23	CPICH_RSCP_41	CPICH_RSCP_0	CPICH_RSCP_1	CPICH_RSCP_2
Highest reported value (Cell 1)	CPICH_RSCP_48	CPICH_RSCP_66	CPICH_RSCP_20	CPICH_RSCP_22	CPICH_RSCP_23
Lowest reported value (Cell 2)	CPICH_RSCP_19	CPICH_RSCP_32	CPICH_RSCP_0	CPICH_RSCP_0	CPICH_RSCP_0
Highest reported value (Cell 2)	CPICH_RSCP_44	CPICH_RSCP_57	CPICH_RSCP_13	CPICH_RSCP_15	CPICH_RSCP_16

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1.2 Relative accuracy requirement

8.7.1.1.2.1 Definition and applicability

The relative accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.1.1.2.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

~~- CPICH_RSCP1,2$|_{dBm}$ ≥ -114 dBm for Band I,.~~

~~- CPICH_RSCP1,2$|_{dBm}$ ≥ -112 dBm for Band II,~~

~~- CPICH_RSCP1,2$|_{dBm}$ ≥ -111 dBm for Band III.~~

$$\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \le 20dB$$

$$\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \le 20dB$$

~~**Table 8.7.1.1.2.1: CPICH_RSCP Intra frequency relative accuracy**~~

~~Parameter~~	~~Unit~~	~~Accuracy [dB]~~		~~Conditions~~		
				~~Io [dBm/3.84 MHz]~~		
		~~Normal condition~~	~~Extreme condition~~	~~Band I~~	~~Band II~~	~~Band III~~
~~CPICH_RSCP~~	~~dBm~~	~~±3~~	~~±3~~	~~-94...-50~~	~~-92...-50~~	~~-91...-50~~

- CPICH_RSCP1,2$|_{dBm}$ ≥ -114 dBm for Bands I and VI, CPICH_RSCP1,2$|_{dBm}$ ≥ -112 dBm for Bands II and V,

CPICH_RSCP1,2$|_{dBm}$ ≥ -111 dBm for Band III.

$$\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \leq 20dB$$

$$\left.\left(\frac{I_o}{\hat{I}_{or}}\right)\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$$

Table 8.7.1.1.2.1: CPICH_RSCP Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Band I and VI	Band II and V	Band III
				Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	± 3	± 3	-94...-50	-92Ö -50	-91Ö -50

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.2 and A.9.1.1.2.

8.7.1.1.2.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP relative measurement accuracy is within the specified limits in clause 8.7.1.1.2.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.1.2.4 Method of test

8.7.1.1.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. CPICH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

8.7.1.1.2.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.2.3.

2) SS shall transmit MEASUREMENT CONTROL message.

3) UE shall transmit periodically MEASUREMENT REPORT messages.

4) SS shall check CPICH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. CPICH RSCP power value measured from Cell 1 is compared to CPICH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

5) The result of step 3) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.

6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.2.3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.2.3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for

additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated.

7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement in clause 8.7.1.1.1.4.2 is used.

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.1.2.5 Test requirements

Table 8.7.1.1.2.2: CPICH_RSCP Intra frequency relative accuracy, test requirements

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_RSCP	dBm	±3.8	±3.8	-94...-50	-92...-50	-91...-50

Table 8.7.1.1.2.3: CPICH RSCP Intra frequency test parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-74.54		-61,6		-96.47	
	Band II						-94.47	
	Band III						-93.47	
Îor/Ioc		dB	4.3	0.3	9.3	0.3	0.3	-6.23
CPICH RSCP, Note 1	Band I	dBm	-80.2	-84.2	-62.3	-71.3	-106.17	-112.7
	Band II						-104.17	-110.7
	Band III						-103.17	-109.7
Io, Note 1	Band I	dBm/ 3.84 MHz	-67.8		-51,4		-92,8	
	Band II						-90.8	
	Band III						-89.8	
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

The reported values for the relative intra frequency CPICH RSCP measurement shall meet the requirements in table 8.7.1.1.2.4.

Table 8.7.1.1.2.4: CPICH_RSCP Intra frequency relative accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Normal Conditions			
Lowest reported value cell 2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 13)	CPICH_RSCP_(x - 11)
Highest reported value cell 2	CPICH_RSCP_x	CPICH_RSCP_(x - 5)	CPICH_RSCP_(x - 3)
Extreme Conditions			
Lowest reported value cell2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 13)	CPICH_RSCP_(x - 11)
Highest reported value cell2	CPICH_RSCP_x	CPICH_RSCP_(x - 5)	CPICH_RSCP_(x - 3)
CPICH_RSCP_x is the reported value of cell 1			

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.2 Inter frequency measurement accuracy

8.7.1.2.1 Relative accuracy requirement

8.7.1.2.1.1 Definition and applicability

The relative accuracy of CPICH RSCP in inter frequency case is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.1.2.1.2 Minimum Requirements

The accuracy requirements in table 8.7.1.2.1.1 are valid under the following conditions:

~~- CPICH_RSCP1,2$|_{dBm}$ ≥ -114 dBm for Band I.~~

~~- CPICH_RSCP1,2$|_{dBm}$ ≥ -112 dBm for Band II,~~

~~- CPICH_RSCP1,2$|_{dBm}$ ≥ -111 dBm for Band III.~~

$$\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \le 20dB.$$

~~- | Channel 1_Io$|_{dBm/3.84\ MHz}$ -Channel 2_Io$|_{dBm/3.84\ MHz}$ | ≤ 20 dB.~~

$$\left| \frac{I_o}{\hat{I}_{or}}\Bigg|_{in\ dB} - \left(\frac{CPICH\_E_c}{I_{or}}\right)\Bigg|_{in\ dB} \right| \le 20dB.$$

~~**Table 8.7.1.2.1.1: CPICH_RSCP Inter frequency relative accuracy**~~

~~Parameter~~	~~Unit~~	~~Accuracy [dB]~~		~~Conditions~~		
				~~Io [dBm/3.84 MHz]~~		
		~~Normal condition~~	~~Extreme condition~~	~~Band I~~	~~Band II~~	~~Band III~~
~~CPICH_RSCP~~	~~dBm~~	~~±6~~	~~±6~~	~~-94...-50~~	~~-92...-50~~	~~-91...-50~~

- CPICH_RSCP1,2$|_{dBm}$ ≥ -114 dBm for Bands I and VI,

- CPICH_RSCP1,2$|_{dBm}$ ≥ -112 dBm for Bands II and V,

- CPICH_RSCP1,2$|_{dBm}$ ≥ -111 dBm for Band III.

$$\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \le 20dB$$

| Channel 1_Io|$_{dBm/3.84\ MHz}$ -Channel 2_Io|$_{dBm/3.84\ MHz}$ | ≤ 20 dB.

$$\left.\frac{I_o}{\hat{I}_{or}}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \le 20dB$$

Table 8.7.1.2.1.1: CPICH_RSCP Inter frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Band I and VI Io [dBm/3.84 MHz]	Band II and V Io [dBm/3.84 MHz]	Band III Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	± 6	± 6	-94...-50	-92Ö -50	-91Ö -50

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.2.1 and A.9.1.1.2.

8.7.1.2.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP relative measurement accuracy is within the specified limits in clause 8.7.1.2.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.2.1.4 Method of test

8.7.1.2.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 ñ TTI/10msec))mod 256". CPICH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2.1.2.

Table 8.7.1.2.1.2: CPICH RSCP Inter frequency parameters

Parameter		Unit	Test 1		Test 2	
			Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12	
SCH_Ec/Ior		dB	-12		-12	
PICH_Ec/Ior		dB	-15		-15	
DPCH_Ec/Ior		dB	-15	-	-15	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-1.11	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-60.00	-60.00	-84.00	-94.46
	Band II				-82.00	-92.46
	Band III				-81.00	-91.46
Îor/Ioc		dB	9.54	9.54	0	-9.54
CPICH RSCP, Note 1	Band I	dBm	-60.46	-60.46	-94.0	-114.0
	Band II				-92.0	-112.0
	Band III				-91.0	-111.0
Io, Note 1	Band I	dBm/3.84 MHz	-50.00	-50.00	-81.0	-94.0
	Band II				-79.0	-92.0
	Band III				-78.0	-91.0
Propagation condition		-	AWGN		AWGN	
NOTE 1: CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.						
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for test 2 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.						

8.7.1.2.1.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.2.1.4.

2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

4) SS shall transmit MEASUREMENT CONTROL message for intra frequency measurement and transmit MEASUREMENT CONTROL message for inter frequency measurement.

5) UE shall transmit periodically MEASUREMENT REPORT messages.

6) SS shall check CPICH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. CPICH RSCP power value measured from Cell 1 is compared to CPICH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

7) The result of step 5) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.

8) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.2.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6) and 7) above are repeated.

9) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 1):

Information Element	Value/Remark
Message Type	
UE Information Elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number -Integrity protection mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. Not Present Not Present Not Present Not Present Not Present CELL_DCH Not Present
CN Information Elements -CN Information info	 Not Present
UTRAN mobility information elements -URA identity	 Not Present
RB information elements -Downlink counter synchronisation info	 Not Present
PhyCH information elements -Frequency info	 Not Present
Uplink radio resources -Maximum allowed UL TX power - CHOICE *channel requirement*	 Not Present Not Present
Downlink radio resources -CHOICE mode -Downlink PDSCH information -Downlink information common for all radio links -Downlink DPCH info common for all RL -CHOICE mode -DPCH compressed mode info -Transmission gap pattern sequence -TGPSI -TGPS Status Flag -TGCFN -Transmission gap pattern sequence configuration parameters -TGMP -TGPRC -TGSN -TGL1 -TGL2 -TGD -TGPL1 -TGPL2 -RPP -ITP -CHOICE UL/DL mode -Downlink compressed mode method -Uplink compressed mode method -Downlink frame type -DeltaSIR1 -DeltaSIRafter1 -DeltaSIR2 -DeltaSIRafter2 -N Identify abort -T Reconfirm abort -TX Diversity Mode -SSDT information	 FDD Not Present Not Present FDD 1 Activate (Current CFN + (256 ñ TTI/10msec))mod 256 FDD measurement Infinity 4 7 Not Present 0 3 Not Present Mode 0 Mode 0 UL and DL SF/2 SF/2 B 3.0 3.0 Not Present Not Present Not Present Not Present Not Present Not Present

-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

First MEASUREMENT CONTROL message for Intra frequency measurement (Step 3):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells	FALSE
-Cell synchronisation information reporting indicator	
-Cell Identity reporting indicator	FALSE
-CHOICE mode	
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	FDD
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells	TRUE
-Reporting cell status	FALSE
-CHOICE reported cell	Not Present
-Maximum number of reported cells	Report all active set cells + cells within
-Measurement validity	monitored set on used frequency
-CHOICE *report criteria*	Virtual/active set cells + 2
-Amount of reporting	Not Present
-Reporting interval	Periodical reporting criteria
	Infinity
	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

Second MEASUREMENT CONTROL message for Inter frequency measurement (step 3):

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement object list -CHOICE Inter-frequency cell removal -New inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode -Measurement quantity for frequency quality estimate -Inter-frequency reporting quantity -UTRA Carrier RSSI -Frequency quality estimate -Non frequency related cell reporting quantities -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -Inter-frequency set update -CHOICE report criteria -Amount of reporting -Reporting interval	 2 Setup Acknowledged mode RLC Periodical reporting Not Present Inter-frequency measurement Not Present Cell 2 information is included Not Present Inter-frequency reporting criteria 0 FDD CPICH RSCP TRUE TRUE TRUE TRUE FDD TRUE FALSE FALSE Report cells within monitored set on non-used frequency 2 Not Present Not Present Periodical reporting criteria Infinity 500 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.2.1.5 Test requirements

Table 8.7.1.2.1.3: CPICH_RSCP Inter frequency relative accuracy, test requirements

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_RSCP	dBm	±7.1	±7.1	-94...-50	-92...-50	-91...-50

Table 8.7.1.2.1.4: CPICH RSCP Inter frequency tests parameters

Parameter		Unit	Test 1		Test 2	
			Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12	
SCH_Ec/Ior		dB	-12		-12	
PICH_Ec/Ior		dB	-15		-15	
DPCH_Ec/Ior		dB	-15	-	-15	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-1.11	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-61.6	-61.6	-83.00	-93.46
	Band II				-81.00	-91.46
	Band III				-80.00	-90.46
Îor/Ioc		dB	9.84	9.84	0.3	-9.24
CPICH RSCP, Note 1	Band I	dBm	-61.8	-61.8	-92.7	-112.7
	Band II				-90.7	-110.7
	Band III				-89.7	-109.7
Io, Note 1	Band I	dBm/3.84 MHz	-51.3	-51.3	-79.8	-93.0
	Band II				-77.8	-91.0
	Band III				-76.8	-90.0
Propagation condition		-	AWGN		AWGN	
NOTE 1: CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.						
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for test 2 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.						

The reported values for the relative inter frequency CPICH RSCP measurement shall meet the requirements in table 8.7.1.2.1.5.

Table 8.7.1.2.1.5: CPICH_RSCP Inter frequency relative accuracy requirements for the reported values

	Test 1	Test 2
Normal Conditions		
Lowest reported value cell 2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 28)
Highest reported value cell 2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x - 12)
Extreme Conditions		
Lowest reported value cell2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 28)
Highest reported value cell2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x - 12)
CPICH_RSCP_x is the reported value of cell 1		

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2 CPICH Ec/Io

8.7.2.1 Intra frequency measurements accuracy

8.7.2.1.1 Absolute accuracy requirement

8.7.2.1.1.1 Definition and applicability

The absolute accuracy of CPICH Ec/Io is defined as the CPICH Ec/Io measured from one cell compared to the actual CPICH_Ec/Io power ratio from same cell.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.2.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1.1.1 are valid under the following conditions:

- ~~CPICH_RSCP1$|_{dBm}$ ≥ -114 dBm for Band I.~~
- ~~CPICH_RSCP1$|_{dBm}$ ≥ -112 dBm for Band II,~~
- ~~CPICH_RSCP1$|_{dBm}$ ≥ -111 dBm for Band III.~~

$$\cancel{\left.\frac{I_o}{(\hat{I}_{or})}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB}.$$

~~Table 8.7.2.1.1.1: CPICH_Ec/Io Intra frequency absolute accuracy, minimum requirements~~

~~Parameter~~	~~Unit~~	~~Accuracy [dB]~~		~~Conditions~~		
		~~Normal condition~~	~~Extreme condition~~	~~Io [dBm/3.84 MHz]~~		
				~~Band I~~	~~Band II~~	~~Band III~~
~~CPICH_Ec/Io~~	~~dB~~	~~±1,5 for -14 ≤ CPICH Ec/Io~~ ~~±2 for -16 ≤ CPICH Ec/Io < -14~~ ~~±3 for -20 ≤ CPICH Ec/Io < -16~~	~~±3~~	~~-94...-50~~	~~-92... -50~~	~~-91...-50~~

- CPICH_RSCP1$|_{dBm}$ ≥ -114 dBm for Bands I and VI,
- CPICH_RSCP1$|_{dBm}$ ≥ -112 dBm for Bands II and V,
- CPICH_RSCP1$|_{dBm}$ ≥ -111 dBm for Band III.

$$\left.\frac{I_o}{(\hat{I}_{or})}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$$

Table 8.7.2.1.1.1: CPICH_Ec/Io Intra frequency absolute accuracy, minimum requirements

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Band I and VI	Band II and V	Band III
				Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]
CPICH_Ec/Io	dB	± 1.5 for -14 ≤ CPICH Ec/Io ± 2 for -16 ≤ CPICH Ec/Io < -14 ± 3 for -20 ≤ CPICH Ec/Io < -16	± 3	-94...-50	-92Ö -50	-91Ö -50

The normative reference for this requirement is TS 25.133 [2] clause 9.1.2.1.1.

8.7.2.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH Ec/Io absolute measurement accuracy is within the specified limits in clause 8.7.2.1.1.2. This measurement is for Cell selection/re-selection and for handover evaluation.

8.7.2.1.1.4 Method of test

8.7.2.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. CPICH Ec/Io intra frequency absolute accuracy requirements are tested by using the test parameters in table 8.7.2.1.1.2.

Table 8.7.2.1.1.2: CPICH_Ec/Io Intra frequency parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-15	-	-6	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-1.11	-0.94	-2.56	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-56.98		-89.07		-94.98	
	Band II				-87.07		-92.98	
	Band III				-86.07		-91.98	
Îor/Ioc		dB	3.0	3.0	-2.9	-2.9	-9.0	-9.0
CPICH Ec/Io, Note 1		dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
Io, Note 1	Band I	dBm/3.84 MHz	-50		-86		-94	
	Band II				-84		-92	
	Band III				-83		-91	
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

8.7.2.1.1.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.1.1.5.

2) SS shall transmit MEASUREMENT CONTROL message.

3) UE shall transmit periodically MEASUREMENT REPORT messages.

4) SS shall check CPICH_Ec/No value in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1, which is compared to the actual CPICH Ec/Io power ratio from the same cell for each MEASUREMENT REPORT message.

5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.5 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.5 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated.

6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Table 8.7.2.1.1.3: CPICH Ec/Io measurement report mapping

Reported value	Measured quantity value	Unit
CPICH_Ec/No _00	CPICH Ec/Io < -24	dB
CPICH_Ec/No _01	-24 ≤ CPICH Ec/Io < -23.5	dB
CPICH_Ec/No _02	-23.5 ≤ CPICH Ec/Io < -23	dB
Ö	Ö	Ö
CPICH_Ec/No _47	-1 ≤ CPICH Ec/Io < -0.5	dB
CPICH_Ec/No _48	-0.5 ≤ CPICH Ec/Io < 0	dB
CPICH_Ec/No _49	0 ≤ CPICH Ec/Io	dB

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Intra-frequency measurement - Intra-frequency measurement objects list -Intra-frequency measurement quantity -Filter coefficient -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity -Reporting quantities for active set cells -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for monitored set cells -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for detected set cells -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -CHOICE *report criteria* -Amount of reporting -Reporting interval	 1 Modify Acknowledged mode RLC Periodical reporting Not Present Intra-frequency measurement Not Present 0 FDD CPICH RSCP TRUE TRUE FDD TRUE TRUE FALSE FALSE FALSE FDD TRUE FALSE FALSE Not Present Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Periodical reporting criteria Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.2.1.1.5 Test requirements

The CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.1.1.2. The effect of assumed thermal noise and noise generated in the receiver (ñ99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in subclause 8.7.2.1.1.2 as shown in table 8.7.2.1.1.4.

Table 8.7.2.1.1.4: CPICH_Ec/Io Intra frequency absolute accuracy, test requirements

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_Ec/Io	dB	-3.1Ö 1.9 for -14 ≤ CPICH Ec/Io ñ3.6Ö 2.4 for -16 ≤ CPICH Ec/Io < -14 ñ4.6Ö 3.4 for -20 ≤ CPICH Ec/Io < -16	-4.6Ö 3.4	-94...-87	-92...-85	-91...-84
		± 1.95 for -14 ≤ CPICH Ec/Io ± 2.4 for -16 ≤ CPICH Ec/Io < -14 ± 3.4 for -20 ≤ CPICH Ec/Io < -16	± 3.4	-87...-50	-85...-50	-84...-50

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

Table 8.7.2.1.1.5: CPICH_Ec/Io Intra frequency tests parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-9.7		-9.8		-9.9	
PCCPCH_Ec/Ior		dB	-11.7		-11.8		-11.9	
SCH_Ec/Ior		dB	-11.7		-11.8		-11.9	
PICH_Ec/Ior		dB	-14.7		-14.8		-14.9	
DPCH_Ec/Ior		dB	-14.7	-	-14.8	-	-5.9	-
OCNS_Ec/Ior		dB	-1.2	-1.02	-1.17	-0.99	-2.64	-0.97
Ioc	Band I	dBm/ 3.84 MHz	-58.5		-89.07		-93.98	
	Band II				-87.07		-91.98	
	Band III				-86.07		-90.98	
Ĝor/Ioc		dB	3.3	3.3	-2.6	-2.6	-8.7	-8.7
CPICH Ec/Io, Note 1		dBm	-13.6	-13.6	-15.6	-15.6	-19.6	-19.6
Io, Note 1	Band I	dBm / 3.84 MHz	-51.3		-85.85		-92.9	
	Band II				-83.85		-90.9	
	Band III				-82.85		-89.9	
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

The reported values for the absolute intra frequency CPICH Ec/Io measurement shall meet the requirements in table 8.7.2.1.1.6.

Table 8.7.2.1.1.6: CPICH_Ec/Io Intra frequency absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Normal Conditions			
Lowest reported value	CPICH_Ec/No_17	CPICH_Ec/No_12	CPICH_Ec/No_0
Highest reported value	CPICH_Ec/No_25	CPICH_Ec/No_22	CPICH_Ec/No_16
Extreme Conditions			
Lowest reported value	CPICH_Ec/No_14	CPICH_Ec/No_10	CPICH_Ec/No_0
Highest reported value	CPICH_Ec/No_28	CPICH_Ec/No_24	CPICH_Ec/No_16

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2.1.2 Relative accuracy requirement

8.7.2.1.2.1 Definition and applicability

The relative accuracy of CPICH Ec/Io is defined as the CPICH Ec/Io measured from one cell compared to the CPICH Ec/Io measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.2.1.2.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1.2.1 are valid under the following conditions:

~~- CPICH_RSCP1,2$|_{dBm}$ ≥ -114 dBm for Band I.~~

~~- CPICH_RSCP1,2$|_{dBm}$ ≥ -112 dBm for Band II,~~

~~- CPICH_RSCP1,2$|_{dBm}$ ≥ -111 dBm for Band III.~~

~~-~~ $$\cancel{\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \le 20dB}$$

~~-~~ $$\cancel{\left| \left(\frac{I_o}{\hat{I}_{or}}\right)\Bigg|_{in\ dB} - \left(\frac{CPICH\_E_c}{I_{or}}\right)\Bigg|_{in\ dB} \right| \le 20dB}$$

~~Table 8.7.2.1.2.1: CPICH_Ec/Io Intra frequency relative accuracy~~

~~Parameter~~	~~Unit~~	~~Accuracy [dB]~~		~~Conditions~~		
		~~Normal condition~~	~~Extreme condition~~	~~Io [dBm/3.84 MHz]~~		
				~~Band I~~	~~Band II~~	~~Band III~~
~~CPICH_Ec/Io~~	~~dB~~	~~±1,5 for -14 ≤ CPICH Ec/Io~~ ~~±2 for -16 ≤ CPICH Ec/Io < -14~~ ~~±3 for -20 ≤ CPICH Ec/Io < -16~~	~~±3~~	~~-94...-50~~	~~-92...-50~~	~~-91...-50~~

- CPICH_RSCP1,2$|_{dBm}$ ≥ -114 dBm for Bands I and VI
- CPICH_RSCP1,2$|_{dBm}$ ≥ -112 dBm for Bands II and V,
- CPICH_RSCP1,2$|_{dBm}$ ≥ -111 dBm for Band III.
- $$\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \le 20dB$$
- $$\left| \left(\frac{I_o}{\hat{I}_{or}}\right)\Bigg|_{in\ dB} - \left(\frac{CPICH\_E_c}{I_{or}}\right)\Bigg|_{in\ dB} \right| \le 20dB$$

Table 8.7.2.1.2.1: CPICH_Ec/Io Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Band I and VI	Band II and V	Band III
				Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]
The lower of the CPICH_Ec/Io from cell1 and cell2	dB	± 1.5 for -14 ≤ CPICH Ec/Io ± 2 for -16 ≤ CPICH Ec/Io < -14 ± 3 for -20 ≤ CPICH Ec/Io < -16	± 3	-94...-50	-92Ö -50	-91Ö -50

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.2.1.2 and A.9.1.2.2.

8.7.2.1.2.3 Test purpose

The purpose of this test is to verify that the CPICH Ec/Io relative measurement accuracy is within the specified limits in clause 8.7.2.1.2.2. This measurement is for Cell selection/re-selection and for handover evaluation.

8.7.2.1.2.4 Method of test

8.7.2.1.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are in the same frequency. CPICH Ec/Io intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.2.1.1.2.

8.7.2.1.2.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.1.2.3.
2) SS shall transmit MEASUREMENT CONTROL message.
3) UE shall transmit periodically MEASUREMENT REPORT messages.
4) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio value measured from Cell 1 is compared to CPICH_Ec/Io power ratio value measured from Cell 2 for each MEASUREMENT REPORT message.
5) The result of step 3) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.2.3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.2.3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated.
7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement in clause 8.7.2.1.1.4.2 is used.

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.2.1.2.5 Test requirements

Table 8.7.2.1.2.2: CPICH_Ec/Io Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Io [dBm / 3.84 MHz]		
				Band I	Band II	Band III
CPICH_Ec/Io	dB	±2.3 for -14 ≤ CPICH Ec/Io ±2.8 for -16 ≤ CPICH Ec/Io < -14 ±3.8 for -20 ≤ CPICH Ec/Io < -16	±3.8	-94...-50	-92...-50	-91...-50

Table 8.7.2.1.2.3: CPICH_Ec/Io Intra frequency tests parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-9.7		-9.8		-9.9	
PCCPCH_Ec/Ior		dB	-11.7		-11.8		-11.9	
SCH_Ec/Ior		dB	-11.7		-11.8		-11.9	
PICH_Ec/Ior		dB	-14.7		-14.8		-14.9	
DPCH_Ec/Ior		dB	-14.7	-	-14.8	-	-5.9	-
OCNS_Ec/Ior		dB	-1.2	- 1.02	-1.17	-0.99	-2.64	-0.97
Ioc	Band I	dBm/ 3.84 MHz	-58.5		-89.07		-93.98	
	Band II				-87.07		-91.98	
	Band III				-86.07		-90.98	
Îor/Ioc		dB	3.3	3.3	-2.6	-2.6	-8.7	-8.7
CPICH Ec/Io, Note 1		dBm	-13.6	-13.6	-15.6	-15.6	-19.6	-19.6
Io, Note 1	Band I	dBm / 3.84 MHz	-51,3		-85.85		-92.9	
	Band II				-83.85		-90.9	
	Band III				-82.85		-89.9	
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

The reported values for the relative intra frequency CPICH Ec/Io measurement shall meet the requirements in table 8.7.2.1.2.4.

Table 8.7.2.1.2.4: CPICH_Ec/Io Intra frequency relative accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Normal Conditions			
Lowest reported value cell 2	CPICH_Ec/No_(x - 5)	CPICH_Ec/No_(x - 6)	CPICH_Ec/No_(x - 8)
Highest reported value cell 2	CPICH_Ec/No_(x+ 5)	CPICH_Ec/No_(x + 6)	CPICH_Ec/No_(x+ 8)
Extreme Conditions			
Lowest reported value cell2	CPICH_Ec/No_(x - 8)	CPICH_Ec/No_(x - 8)	CPICH_Ec/No_(x - 8)
Highest reported value cell2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x+ 8)	CPICH_Ec/No_(x+ 8)
CPICH_Ec/No_x is the reported value of cell 1			

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2.2 Inter frequency measurement accuracy

8.7.2.2.1 Absolute accuracy requirement

Void

8.7.2.2.2 Relative accuracy requirement

8.7.2.2.2.1 Definition and applicability

The relative accuracy of CPICH Ec/Io in the inter frequency case is defined as the CPICH Ec/Io measured from one cell compared to the CPICH Ec/Io measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.2.2.2.2 Minimum Requirements

The accuracy requirements in table 8.7.2.2.2.1 are valid under the following conditions:

- ~~CPICH_RSCP1,2|~~$\cancel{_{dBm} \geq -114}$ ~~dBm for Band I.~~
- ~~CPICH_RSCP1,2|~~$\cancel{_{dBm} \geq -112}$ ~~dBm for Band II,~~
- ~~CPICH_RSCP1,2|~~$\cancel{_{dBm} \geq -111}$ ~~dBm for Band III.~~

$$\cancel{\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \leq 20dB}.$$

- ~~| Channel 1_Io|~~$\cancel{_{dBm/3.84\ MHz}}$ ~~-Channel 2_Io|~~$\cancel{_{dBm/3.84\ MHz}}$ ~~| ≤ 20 dB.~~

$$\cancel{\left| \frac{I_o}{(\hat{I}_{or})}\right|_{in\ dB} - \left(\frac{CPICH\_E_c}{I_{or}}\right)\Bigg|_{in\ dB} \leq 20dB}.$$

~~Table 8.7.2.2.2.1: CPICH_Ec/Io Inter frequency relative accuracy, minimum requirements~~

~~Parameter~~	~~Unit~~	~~Accuracy [dB]~~		~~Conditions~~		
		~~Normal condition~~	~~Extreme condition~~	~~Io [dBm/3.84 MHz]~~		
				~~Band I~~	~~Band II~~	~~Band III~~
~~CPICH_Ec/Io~~	~~dB~~	~~±1.5 for -14 ≤ CPICH Ec/Io~~ ~~±2 for -16 ≤ CPICH Ec/Io < -14~~ ~~±3 for -20 ≤ CPICH Ec/Io < -16~~	~~±3~~	~~-94...-50~~	~~-92...-50~~	~~-91...-50~~

- CPICH_RSCP1,2|$_{dBm} \geq -114$ dBm for Bands I and VI
- CPICH_RSCP1,2|$_{dBm} \geq -112$ dBm for Bands II and V,
- CPICH_RSCP1,2|$_{dBm} \geq -111$ dBm for Band III.

$$\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \leq 20dB$$

- | Channel 1_Io|$_{dBm/3.84\ MHz}$ -Channel 2_Io|$_{dBm/3.84\ MHz}$ | ≤ 20 dB.

$$\left| \frac{I_o}{(\hat{I}_{or})}\right|_{in\ dB} - \left(\frac{CPICH\_E_c}{I_{or}}\right)\Bigg|_{in\ dB} \leq 20dB$$

Table 8.7.2.2.2.1: CPICH_Ec/Io Inter frequency relative accuracy, minimum requirements

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Band I and VI	Band II and V	Band III
				Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]
The lower of the CPICH_Ec/Io from cell1 and cell2	dB	± 1.5 for -14 ≤ CPICH Ec/Io ± 2 for -16 ≤ CPICH Ec/Io < -14 ± 3 for -20 ≤ CPICH Ec/Io < -16	± 3	-94...-50	-92Ö -50	-91Ö -50

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.2.2.2 and A.9.1.2.2.

8.7.2.2.2.3 Test purpose

The purpose of this test is to verify that the CPICH Ec/Io relative measurement accuracy is within the specified limits in clause 8.7.2.2.2.2. This measurement is for Cell selection/re-selection and for handover evaluation.

8.7.2.2.2.4 Method of test

8.7.2.2.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are in different frequency and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 ñ TTI/10msec))mod 256". CPICH Ec/Io inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.2.2.2.2.

Table 8.7.2.2.2.2: CPICH Ec/Io Inter frequency parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	-94.46	-94.46
	Band II				-85.27	-85.27	-92.46	-92.46
	Band III				-84.27	-84.27	-91.46	-91.46
Îor/Ioc		dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/Io, Note 1		dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
Io, Note 1	Band I	dBm/3.84 MHz	-50	-50	-86	-86	-94	-94
	Band II				-84	-84	-92	-92
	Band III				-83	-83	-91	-91
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

8.7.2.2.2.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.2.2.4.

2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

4) SS shall transmit a MEASUREMENT CONTROL message for intra frequency measurement and transmit another MEASUREMENT CONTROL message for inter frequency measurement.

5) UE shall transmit periodically MEASUREMENT REPORT messages.

6) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio measured from Cell 1 is compared to CPICH_Ec/Io power value measured from Cell 2 for each MEASUREMENT REPORT message.

7) The result of step 6) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.

8) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6) and 7) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6) and 7) above are repeated.

9) After 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 1):

Information Element	Value/Remark
Message Type	
UE Information Elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number -Integrity protection mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. Not Present Not Present Not Present Not Present Not Present CELL_DCH Not Present
CN Information Elements -CN Information info	 Not Present
UTRAN mobility information elements -URA identity	 Not Present
RB information elements -Downlink counter synchronisation info	 Not Present
PhyCH information elements -Frequency info	 Not Present
Uplink radio resources -Maximum allowed UL TX power - CHOICE *channel requirement*	 Not Present Not Present

Downlink radio resources
-CHOICE mode
 -Downlink PDSCH information
-Downlink information common for all radio links
 -Downlink DPCH info common for all RL
 -CHOICE mode
  -DPCH compressed mode info
   -Transmission gap pattern sequence
    -TGPSI
    -TGPS Status Flag
    -TGCFN
 	
    -Transmission gap pattern sequence configuration parameters
     -TGMP
     -TGPRC
     -TGSN
     -TGL1
     -TGL2
     -TGD
     -TGPL1
     -TGPL2
     -RPP
     -ITP
     -CHOICE UL/DL mode
      -Downlink compressed mode method
      -Uplink compressed mode method
     -Downlink frame type
     -DeltaSIR1
     -DeltaSIRafter1
     -DeltaSIR2
     -DeltaSIRafter2
     -N Identify abort
     -T Reconfirm abort
  -TX Diversity Mode
  -SSDT information
	
	FDD
	Not Present
	
	Not Present
	FDD
	
	1
	Activate
	(Current CFN + (256 ñ TTI/10msec))mod 256
	
	FDD measurement
	Infinity
	4
	7
	Not Present
	0
	3
	Not Present
	Mode 0
	Mode 0
	UL and DL
	SF/2
	SF/2
	B
	3.0
	3.0
	Not Present
	Not Present
	Not Present
	Not Present
	Not Present
	Not Present

-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

First MEASUREMENT CONTROL message for Intra frequency measurement (Step 3):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-freqquency measurement objects list	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells	FALSE
-Cell synchronisation information reporting	
indicator	
-Cell Identity reporting indicator	FALSE
-CHOICE mode	
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	FDD
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells	TRUE
-Reporting cell status	FALSE
-CHOICE reported cell	Not Present
-Maximum number of reported cells	Report all active set cells + cells within
-Measurement validity	monitored set on used frequency
-CHOICE *report criteria*	Virtual/active set cells + 2
-Amount of reporting	Not Present
-Reporting interval	Periodical reporting criteria
	Infinity
	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

Second MEASUREMENT CONTROL message for Inter frequency measurement (step 3):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement	
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH RSCP
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status	FALSE
-CHOICE reported cell	
	Report cells within monitored set on non-used
-Maximum number of reported cells	frequency
-Measurement validity	2
-Inter-frequency set update	Not Present
-CHOICE report criteria	Not Present
-Amount of reporting	Periodical reporting criteria
-Reporting interval	Infinity
	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.2.2.2.5 Test requirements

The effect of assumed thermal noise and noise generated in the receiver (ñ99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in clause 8.7.2.2.2.2 as shown in table 8.7.2.2.2.3.

Table 8.7.2.2.2.3: CPICH_Ec/Io Inter frequency relative accuracy, test requirements

Parameter	Unit	Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_Ec/Io	dB	±3.5 for -14 ≤ CPICH Ec/Io ±4 for -16 ≤ CPICH Ec/Io < -14 ±5 for -20 ≤ CPICH Ec/Io < -16	± 5	-94...-87	-92...-85	-91...-84
		±2.3 for -14 ≤ CPICH Ec/Io ± 2.8 for -16 ≤ CPICH Ec/Io < -14 ± 3.8 for -20 ≤ CPICH Ec/Io < -16	± 3.8	-87...-50	-85...-50	-84...-50

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

Table 8.7.2.2.2.4: CPICH Ec/Io Inter frequency tests parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior		dB	-1.12	-0.95	-2.55	-0.94	-2.55	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-53.5	-53.5	-86.27	-86.27	-93.46	-93.46
	Band II				-84.27	-84.27	-91.46	-91.46
	Band III				-83.27	-83.27	-90.46	-90.46
Îor/Ioc		dB	-1.45	-1.45	-4.4	-4.4	-9.24	-9.24
CPICH Ec/Io, Note 1		dBm	-13.8	-13.8	-15.7	-15.7	-19.7	-19.7
Io, Note 1	Band I	dBm /3.84 MHz	-51.15	-51.15	-84.9	-84.9	-93	-93
	Band II				-82.9	-82.9	-91	-91
	Band III				-81.9	-81.9	-90	-90
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

The reported values for the relative inter frequency CPICH Ec/Io measurement shall meet the requirements in table 8.7.2.2.2.5.

Table 8.7.2.2.2.5: CPICH_Ec/Io Inter frequency relative accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Normal Conditions			
Lowest reported value cell 2	CPICH_Ec/No_(x -5)	CPICH_Ec/No_(x - 6)	CPICH_Ec/No_(x - 10)
Highest reported value cell 2	CPICH_Ec/No_(x+5)	CPICH_Ec/No_(x + 6)	CPICH_Ec/No_(x +10)
Extreme Conditions			
Lowest reported value cell2	CPICH_Ec/No_(x - 8)	CPICH_Ec/No_(x - 8)	CPICH_Ec/No_(x - 10)
Highest reported value cell2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x + 10)
CPICH_Ec/No_x is the reported value of cell 1			

8.7.3 UTRA Carrier RSSI

NOTE: This measurement is for Inter-frequency handover evaluation.

8.7.3.1 Absolute measurement accuracy requirement

8.7.3.1.1 Definition and applicability

The absolute accuracy of UTRA Carrier RSSI is defined as the UTRA Carrier RSSI measured from one frequency compared to the actual UTRA Carrier RSSI power of that same frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.3.1.2 Minimum Requirements

Table 8.7.3.1.1: UTRA Carrier RSSI Inter frequency absolute accuracy

~~Parameter~~	~~Unit~~	~~Accuracy [dB]~~		~~Conditions~~		
				~~Io [dBm/3.84 MHz]~~		
		~~Normal condition~~	~~Extreme condition~~	~~Band I~~	~~Band II~~	~~Band III~~
~~UTRA Carrier RSSI~~	~~dBm~~	~~± 4~~	~~± 7~~	~~-94...-70~~	~~-92...-70~~	~~-91...-70~~
	~~dBm~~	~~± 6~~	~~± 9~~	~~-70...-50~~	~~-70...-50~~	~~-70...-50~~

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Band I and VI	Band II and V	Band III
				Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]
UTRA Carrier RSSI	dBm	± 4	± 7	-94...-70	-92Ö -70	-91Ö -70
	dBm	± 6	± 9	-70...-50	-70Ö -50	-70Ö -50

The normative reference for this requirement is TS 25.133 [2] clause 9.1.3.1.

8.7.3.1.3 Test purpose

The purpose of this test is to verify that the UTRA Carrier RSSI measurement is within the specified limits. This measurement is for inter-frequency handover evaluation.

8.7.3.1.4 Method of test

8.7.3.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, Set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 ñ TTI/10msec))mod 256". UTRA Carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.3.1.2.

Table 8.7.3.1.2: UTRA Carrier RSSI Inter frequency test parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-52.22	-52.22	-70.27	-70.27	-94.46	-94.46
	Band II						-92.46	-92.46
	Band III						-91.46	-91.46
Îor/Ioc		dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/Io, Note 1		dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
Io, Note 1	Band I	dBm/3.84 MHz	-50	-50	-69	-69	-94	-94
	Band II						-92	-92
	Band III						-91	-91
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

8.7.3.1.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.3.1.2.

2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

4) SS shall transmit MEASUREMENT CONTROL message.

5) UE shall transmit periodically MEASUREMENT REPORT messages.

6) SS shall check UTRA carrier RSSI value of Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power of Channel 2 reported by UE is compared to actual UTRA Carrier RSSI value of Channel 2 for each MEASUREMENT REPORT message.

7) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) above is repeated.

8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 2):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
-Integrity protection mode info	internal counter.
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	Not Present
-UTRAN DRX cycle length coefficient	CELL_DCH
	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
- CHOICE *channel requirement*	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 ñ TTI/10msec))mod 256
-Transmission gap pattern sequence configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	B
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present

-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT CONTROL message for Inter frequency measurement (step 4):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement	
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included.
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH RSCP
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status	FALSE
-CHOICE reported cell	
	Report cells within monitored set on non-used
-Maximum number of reported cells	frequency
-Measurement validity	2
-Inter-frequency set update	Not Present
-CHOICE report criteria	Not Present
-Amount of reporting	Periodical reporting criteria
-Reporting interval	Infinity
	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.3.1.5 Test requirements

The UTRA Carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.3.1.2. The effect of assumed thermal noise and noise generated in the receiver (ñ99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in subclause 8.7.3.1.2 as shown in table 8.7.3.1.3.

Table 8.7.3.1.3: UTRA Carrier RSSI absolute accuracy

Parameter	Unit	Accuracy [dB]					
		Normal condition			Extreme condition		
		Test 1	Test 2	Test 3	Test 1	Test 2	Test 3
UTRA Carrier RSSI	dBm	± 7.15	± 5.1	-5Ö 5.8	± 10.15	± 8.1	-8Ö 8.8

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3.2.

Table 8.7.3.1.4: UTRA Carrier RSSI Inter frequency test parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior		dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-53.5	-53.5	-69.27	-69.27	-93.46	-93.46
	Band II						-91.46	-91.46
	Band III						-90.46	-90.46
GÊr/Ioc		dB	-1.45	-1.45	-4.4	-4.4	-9.24	-9.24
CPICH Ec/Io, Note 1		dBm	-13.8	-13.8	-15.7	-15.7	-19.7	-19.7
Io, Note 1	Band I	dBm/3.84 MHz	-51.15	-51.15	-67.9	-67.9	-93	-93
	Band II						-91	-91
	Band III						-90	-90
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

The reported values for the UTRA Carrier RSSI absolute measurement shall meet the requirements in table 8.7.3.1.5.

Table 8.7.3.1.5: UTRA Carrier RSSI absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Normal Conditions			
Lowest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_42	UTRA_carrier_RSSI_LEV_27	UTRA_carrier_RSSI_LEV_02
Highest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_57	UTRA_carrier_RSSI_LEV_38	UTRA_carrier_RSSI_LEV_13
Extreme Conditions			
Lowest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_39	UTRA_carrier_RSSI_LEV_24	UTRA_carrier_RSSI_LEV_00
Highest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_60	UTRA_carrier_RSSI_LEV_41	UTRA_carrier_RSSI_LEV_16

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.3.2 Relative measurement accuracy requirement

8.7.3.2.1 Definition and applicability

The relative accuracy requirement is defined as the UTRA Carrier RSSI measured from one frequency compared to the UTRA Carrier RSSI measured from another frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.3.2.2 Minimum Requirements

The accuracy requirements in table 8.7.3.2.1 are valid under the following condition:

$| \text{Channel 1\_Io}|_{dBm/3.84\ MHz} - \text{Channel 2\_Io}|_{dBm/3.84\ MHz} | < 20$ dB.

Table 8.7.3.2.1: UTRA Carrier RSSI Inter frequency relative accuracy

~~Parameter~~	~~Unit~~	~~Accuracy [dB]~~		~~Conditions~~		
				~~Io [dBm/3.84 MHz]~~		
		~~Normal condition~~	~~Extreme condition~~	~~Band I~~	~~Band II~~	~~Band III~~
~~UTRA Carrier RSSI~~	~~dBm~~	~~± 7~~	~~± 11~~	~~-94...-70~~	~~-92...-70~~	~~-91...-70~~

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Band I and VI	Band II and V	Band III
				Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]
UTRA Carrier RSSI	dBm	± 7	± 11	-94...-70	-92Ö -70	-91Ö -70

The normative reference for this requirement is TS 25.133 [2] clause 9.1.3.2.

8.7.3.2.3 Test purpose

The purpose of this test is to verify that the UTRA Carrier RSSI measurement is within the specified limits. This measurement is for inter-frequency handover evaluation.

8.7.3.2.4 Method of test

8.7.3.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, Set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 ñ TTI/10msec))mod 256". UTRA Carrier RSSI relative accuracy requirements are tested by using test parameters in table 8.7.3.1.2.

8.7.3.2.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 3 are set up according to table 8.7.3.2.3.
2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
4) SS shall transmit MEASUREMENT CONTROL message.
5) UE shall transmit periodically MEASUREMENT REPORT messages.
6) SS shall check UTRA carrier RSSI value of Channel 1 and Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power value measured from Channel 1 is compared to UTRA carrier RSSI power value measured from Channel 2 for each MEASUREMENT REPORT message.
7) The result of step 6) is compared to actual power level difference of UTRA Carrier RSSI of Channel 1 and Channel 2.
8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message and MEASUREMENT CONTROL message for Inter frequency measurement in clause 8.7.3.1.4.2 is used.

MEASUREMENT REPORT message for inter ñ frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.3.2.5 Test requirements

The UTRA Carrier RSSI relative measurement accuracy shall meet the requirements in clause 8.7.3.2.2. The effect of assumed thermal noise and noise generated in the receiver (ñ99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in clause 8.7.3.2.2 as shown in table 8.7.3.2.2.

Table 8.7.3.2.2: UTRA Carrier RSSI relative accuracy

Parameter	Unit	Accuracy [dB]	
		Normal condition	Extreme condition
		Test 3	Test 3
UTRA Carrier RSSI	dBm	± 7.4	± 11.4

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3.2.

Table 8.7.3.2.3: UTRA Carrier RSSI Inter frequency test parameters

Parameter		Unit	Test 3	
			Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10	
PCCPCH_Ec/Ior		dB	-12	
SCH_Ec/Ior		dB	-12	
PICH_Ec/Ior		dB	-15	
DPCH_Ec/Ior		dB	-6	-
OCNS_Ec/Ior		dB	-2.56	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-93.46	-93.46
	Band II		-91.46	-91.46
	Band III		-90.46	-90.46
Œr/Ioc		dB	-9.24	-9.24
CPICH Ec/Io, Note 1		dBm	-19.7	-19.7
Io, Note 1	Band I	dBm/3.84 MHz	-93	-93
	Band II		-91	-91
	Band III		-90	-90
Propagation condition		-	AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.				

The reported values for the UTRA Carrier RSSI relative measurement shall meet the requirements in table 8.7.3.2.4.

Table 8.7.3.2.4: UTRA Carrier RSSI relative accuracy requirements for the reported values

	Test 3
Normal Conditions	
Lowest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_(x ñ 8)
Highest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_(x + 8)
Extreme Conditions	
Lowest reported value (Cell 2)	UTRA_carrier_RSSI_LEV__(x ñ 12)
Highest reported value (Cell 2)	UTRA_carrier_RSSI_LEV__(x + 12)
UTRA_carrier_RSSI_LEV_x is the reported value of cell 1	

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG T WG1 Meeting #25
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Tdoc ⌘ T1-041507

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**431**	⌘ **rev**	**-**	⌘	Current version:	**5.5.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☑ Radio Access Network ☐ Core Network ☐

Title:	⌘	Introduction of Test Tolerances to Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later), test 8.6.1.2A
Source:	⌘	Racal Instruments Wireless Solutions
Work item code:	⌘	
Date:	⌘	06/10/2004
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	The Test requirements do not allow for the effects of test system uncertainties.
Summary of change:	⌘	a) Introduction of tables 8.6.1.2A.4, 8.6.1.2A.5 giving correct RF condtions for Rel-4 and later test. b) Revision of tables 8.6.1.2A.1, 8.6.1.2A.3 giving correct RF condtions for Rel-4 and later test. c) Revision of Annex F.1.5 table F.1.5 to define Test System Uncertainty. d) Revision of Annex F.2 table F2.4 to define Test Tolerances. e) Revision of Annex F.4 table F4.4 to refer to derivation of test requirements.
Consequences if not approved:	⌘	A Test system may incorrectly fail a good UE.

Clauses affected:	⌘	8.6.1.2A and Annex F.			
		Y	**N**		
Other specs affected:	⌘		✓	Other core specifications	⌘
			✓	Test specifications	
			✓	O&M Specifications	
Other comments:	⌘	The ìR99î version of the test, 8.6.1.2, already includes Test Tolerances. A new section has been added in TR34.902 for this test.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)

8.6.1.2A.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the Rel-4 and later FDD UE.

8.6.1.2A.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1A.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.2.

8.6.1.2A.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.2A.4 Method of test

8.6.1.2A.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The initial test parameters are given in table 8.6.1.2A.4~~1~~.

Table 8.6.1.2A.1: Cell specific initial test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	0	-Inf	-Inf
$\hat{I}_{or}$ *(Note 1)*	dBm	-85	-Inf	-Inf
I_{oc}	dBm/ 3.84 MHz		-85	
CPICH_Ec/Io	dB	-13	-Inf	-Inf
Propagation Condition			AWGN	
Note 1: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.				

The test parameters are given in table 8.6.1.2A.2 and 8.6.1.2A.3. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A, 1C and 1B shall be used and the periodical reporting of the events is not applied. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. In the initial condition before the time T1 only Cell1 is active.

Table 8.6.1.2A2.2: General test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Replacement activation threshold		0	Applicable for event 1C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		32	
T1	S	10	
T2	S	10	
T3	S	5	
T4	S	10	

Table 8.6.1.2A.3: Cell specific test parameters for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2				Cell3			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
CPICH_Ec/Ior	dB	-10				-10				-10			
PCCPCH_Ec/Ior	dB	-12				-12				-12			
SCH_Ec/Ior	dB	-12				-12				-12			
PICH_Ec/Ior	dB	-15				-15				-15			
DPCH_Ec/Ior	dB	-17				N/A				N/A			
OCNS_Ec/Ior	dB	-1.049				-0.941				-0.941			
$\hat{I}_{or}/I_{oc}$	dB	6.97	6.93	5.97	6.12	-Inf	9.43	6.97	7.62	5.97	6.93	-Inf	5.62
$\hat{I}_{or}$ (Note 1)	dBm	-78.03	-78.07	-79.03	-78.88	-Inf	-75.57	-78.03	-77.38	-79.03	-78.07	-Inf	-79.38
I_{oc}	dBm/ 3.84 MHz	-85											
CPICH_Ec/Io	dB	-13	-16	-14	-15.5	-Inf	-13.5	-13	-14	-14	-16	-Inf	-16
Propagation Condition		AWGN											
Note 1: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.													

8.6.1.2A.4.2 Procedure

1) The RF parameters are set up according to T0 in table 8.6.1.2A.4.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) 5 seconds after step4 has completed, the SS shall switch the power settings for T0 to T1 in table 8.6.1.2A.5.

6) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T1 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfu~~l~~l tests is increased by one.

7) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

8) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in table 8.6.1.2A.5.

9) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful~~l~~ tests is increased by one.

10) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfu~~l~~l tests is increased by one.

11) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

12) After 10 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3 in table 8.6.1.2A.5.

13) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1B. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfu~~l~~l tests is increased by one.

14) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

15) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4 in table 8.6.1.2A.5.

16) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successfu~~l~~l tests is increased by one.

17) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

18) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

19) After 10 seconds from the beginning of T4, the UE is switched off.

20) Repeat steps 1-19 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	3
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)

Information Element/Group name	Value/Remark
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1C
-Triggering condition 2	Active set cells and monitored set cells
-Reporting Range Constant	Not present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not present
-Replacement activation threshold	0
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL. NOTE 2: Reporting interval = 0 ms means no periodical reporting.	

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.2A.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

Table 8.6.1.2A.4: Initial test requirements for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-9.3	-9.3	-9.3
PCCPCH_Ec/Ior	dB	-11.3	-11.3	-11.3
SCH_Ec/Ior	dB	-11.3	-11.3	-11.3
PICH_Ec/Ior	dB	-14.3	-14.3	-14.3
DPCH_Ec/Ior	dB	-16.3	N/A	N/A
OCNS_Ec/Ior	dB	-1.26	-1.13	-1.13
$\hat{I}_{or}/I_{oc}$	dB	0	-Inf	-Inf
$\hat{I}_{or}$	dBm	-85	-Inf	-Inf
I_{oc}	dBm/3.84 MHz	-85		
CPICH_Ec/Io *(Note 1)*	dB	-12.3	-Inf	-Inf
Propagation Condition		AWGN		
Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.				

Table 8.6.1.2A.5: Test requirements for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2				Cell3			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
CPICH_Ec/Ior	dB	-9.3				-9.3				-9.3			
PCCPCH_Ec/Ior	dB	-11.3				-11.3				-11.3			
SCH_Ec/Ior	dB	-11.3				-11.3				-11.3			
PICH_Ec/Ior	dB	-14.3				-14.3				-14.3			
DPCH_Ec/Ior	dB	-16.3				N/A				N/A			
OCNS_Ec/Ior	dB	-1.26				-1.13				-1.13			
$\hat{I}_{or}/I_{oc}$ *(Note 1)*	dB	7.0	6.9	6.0	6.1	-Inf	9.4	7.0	7.6	6.0	6.9	-Inf	5.6
$\hat{I}_{or}$	dBm	-78.0	-78.1	-79.0	-78.9	-Inf	-75.6	-78.0	-77.4	-79.0	-78.1	-Inf	-79.4
I_{oc}	dBm/3.84 MHz	-85											
CPICH_Ec/Io *(Note 1)*	dB	-12.3	-15.3	-13.3	-14.8	-Inf	-12.8	-12.3	-13.3	-13.3	-15.3	-Inf	-15.3
Propagation Condition		AWGN											
Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.													

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

Annex F (normative): General test conditions and declarations

The requirements of this clause apply to all applicable tests in the present document.

Many of the tests in the present document measure a parameter relative to a value that is not fully specified in the UE specifications. For these tests, the Minimum Requirement is determined relative to a nominal value specified by the manufacturer.

When specified in a test, the manufacturer shall declare the nominal value of a parameter, or whether an option is supported.

In all the relevant clauses in this clause all Bit Error Ratio (BER), Block Error Ratio (BLER), False transmit format Detection Ratio **(**FDR) measurements shall be carried out according to the general rules for statistical testing in clause F.6.

F.1 Acceptable uncertainty of Test System

The maximum acceptable uncertainty of the Test System is specified below for each test, where appropriate. The Test System shall enable the stimulus signals in the test case to be adjusted to within the specified range, and the equipment under test to be measured with an uncertainty not exceeding the specified values. All ranges and uncertainties are absolute values, and are valid for a confidence level of 95 %, unless otherwise stated.

A confidence level of 95 % is the measurement uncertainty tolerance interval for a specific measurement that contains 95 % of the performance of a population of test equipment.

For RF tests it should be noted that the uncertainties in clause F.1 apply to the Test System operating into a nominal 50 ohm load and do not include system effects due to mismatch between the DUT and the Test System.

F.1.5 Requirements for support of RRM

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)	During T0 to T6: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB During T1/T2, T3 and T6: I_{or} (3) relative to I_{or} (1) ±0.3 dB During T3, T4/T5 and T6: I_{or} (2) relative to I_{or} (1) ±0.3 dB	
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [4], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) The relative uncertainties for Ior(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The uncertainty for Ioc and Ior(1) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2, 3), are uncorrelated to each other.	
8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)	During T0 to T4: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB During T1, T2 and T4: I_{or} (3) relative to I_{or} (1) ±0.3 dB During T2, T3 and T4: I_{or} (2) relative to I_{or} (1) ±0.3 dB~~TBD~~	
	Assumptions: Same as 8.6.1.2	

F.2 Test Tolerances (This clause is informative)

The Test Tolerances defined in this clause have been used to relax the Minimum Requirements in the present document to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.).

F.2.4 Requirements for support of RRM

Table F.2.4: Test Tolerances for Radio Resource Management Tests

Clause	Test Tolerance
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)	During T0 to T6: +0.70 dB for all Cell 1 Ec/Ior ratios +0.70 dB for all Cell 2 Ec/Ior ratios +0.70 dB for all Cell 3 Ec/Ior ratios~~TBD~~
8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)	During T0 to T4: +0.70 dB for all Cell 1 Ec/Ior ratios +0.70 dB for all Cell 2 Ec/Ior ratios +0.70 dB for all Cell 3 Ec/Ior ratios~~TBD~~

F.4 Derivation of Test Requirements (This clause is informative)

The Test Requirements in the present document have been calculated by relaxing the Minimum Requirements of the core specification using the Test Tolerances defined in clause F.2. When the Test Tolerance is zero, the Test Requirement will be the same as the Minimum Requirement. When the Test Tolerance is non-zero, the Test Requirements will differ from the Minimum Requirements, and the formula used for this relaxation is given in table F.4.

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T0 to T6: Cell 1, Cell 2 and Cell 3: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T0 to T6: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T0 to T6: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T0 to T4: Cell 1, Cell 2 and Cell 3: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB ~~TBD~~	During T0 to T4: +0.70 dB +0.70 dB +0.70 dB +0.70 dB ~~TBD~~	During T0 to T4: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT ~~TBD~~

3GPP TSG-T1 Meeting #25 **Tdoc ⌘ T1-041567**
St Paulís Bay, Malta, 1st - 5th November 2004

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	434	⌘ **rev**	-	⌘	Current version:	**5.5.0**	⌘

For ***HELP*** *on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction of the FDD/FDD Soft Handover test parameters
Source:	⌘	NEC
Work item code:	⌘	TEI
Date:	⌘	06/11/2004
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	To resolve the unspecified behaviour of R99 UE when triggering conditions are set to ìActive set cells and monitored set cells". The changes are compatible with Rel-4 and later terminals, so there is no need to create Release dependent versions of this test case.
Summary of change:	⌘	Correction of the SHO test case: 8.3.1.4.2: Changed Triggering condition 2 in MEASURMENT CONTROL message from ìActive set cells and monitored set cellsî to ìMonitored set cellsî. According to R99 version of TS 25.331 section 10.3.7.39 the UE behaviour is unspecified when using a triggering condition "Active set cells" or "Active set cells and monitored set cells" for the intra-frequency event 1a. The proposed solution resolves the unspecified behaviour of the UE while it doesnít change the purpose/result of test and remains in line with all versions of the core specifications (25.133 and 25.331). 8.3.1.4.2: Changed Triggering condition 1 in Measurement Control message from ìActive set cells and monitored set cellsî to ìActive set cellsî. According to R99 version of TS 25.331 section 10.3.7.39 the UE behaviour is unspecified when using a triggering condition other than "Active set cells" for the intra-frequency event 1b. The Information Elements belonging to the ACTIVE SET UPDATE message have been merged into one table.
Consequences if not approved:	⌘	Good UEs might fail the test because the test case implementation does not comply with the R99 UE behaviour as specified in TS 25.331.

Clauses affected:	⌘	8.3.1.4.2

		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	This CR is applicable for UEís supporting R99 or later.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.1 FDD/FDD Soft Handover

8.3.1.1 Definition and applicability

The active set update delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying soft handover to the switch off of the old downlink DPCH.

The requirements and this test apply to the FDD UE.

8.3.1.2 Minimum requirement

The active set update delay is defined as the time from when the UE has received the ACTIVE SET UPDATE message from UTRAN, or at the time stated through the activation time when to perform the active set update, to the time when the UE successfully uses the set of radio links stated in that message for power control.

The active set update delay is depending on the number of known cells referred to in the ACTIVE SET UPDATE message. A cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set.
- the cell has been measured by the UE during the last 5 seconds and the SFN of the cell has been decoded by the UE.

And the phase reference is the primary CPICH.

The active set update delay shall be less than 50+10*KC+100*OC ms, where

KC is the number of known cells in the active set update message.

OC is the number of cells that are not known in the active set update message.

If the UE have radio links in the active set that it can not use for data detection (due to low signal level), the UE shall at least every 150 ms search for the radio link.

The normative reference for this requirement is TS 25.133 [2] clauses 5.1.2 and A.5.1.1. The active set update delay shall be less than 60 ms in CELL_DCH state when using test parameters as given in table 8.3.1.1.1.

8.3.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.1.4 Method of test

8.3.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1.1.1 and 8.3.1.1.2 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A shall be used, and that CPICH Ec/Io and SFN-CFN observed time difference shall be reported together with Event 1A. The test consists of six successive time periods, with a time duration of T1, T2, T3, T4, T5 and T6 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

Table 8.3.1.1.1: General test parameters for Soft handover

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in clause C.3.1 and C.2.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range		dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting deactivation threshold			0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	5	
T2		s	3	
T3		s	0.5	
T4		ms	60	This is the requirement on active set update delay, see clause 8.3.1.2, where KC=1 and OC=0.
T5		s	10	
T6		s	2	

Table 8.3.1.1.2: Cell specific test parameters for Soft handover

Parameter	Unit	Cell 1						Cell 2					
		T1	T2	T3	T4	T5	T6	T1	T2	T3	T4	T5	T6
CPICH_Ec/Ior	dB	-10						-10					
PCCPCH_Ec/Ior	dB	-12						-12					
SCH_Ec/Ior	dB	-12						-12					
PICH_Ec/Ior	dB	-15						-15					
DPCH_Ec/Ior	dB	Note1	Note1	Note1		N/A	N/A	N/A	N/A	Note3	Note1	Note1	
OCNS_Ec/Ior	dB	Note2	Note2	Note2		-0.94	-0.94	-0.94	-0.94	Note2	Note2	Note2	
$\hat{I}_{or}/I_{oc}$	dB	0	2.91	2.91		2.91	2.91	-Inf	2.91	2.91	2.91	2.91	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-13	-14	-14		-14	-14	-Inf	-14	-14	-14	-14	
Propagation Condition		AWGN											
Relative delay of paths received from cell 2 with respect to cell 1	chips	{-148 Ö 148} Note 4											

Note 1: The DPCH level is controlled by the power control loop
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}
Note 3: The DPCH level is controlled by the power control loop. The initial power shall be set equal to the DPCH_Ec/Ior of Cell 1 at the end of T2.
Note 4: The relative delay of the path from cell 2 with respect to cell 1 shall always be within ±148 chip.

8.3.1.4.2 Procedure

1) The RF parameters are set up according to T1 in table 8.3.1.1.3 .

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 without Compressed mode parameters.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) 5 seconds after step4 has completed, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1A containing the CFN-SFN observed time difference between cell 1 and cell 2.

7) At the beginning of T3 the downlink DPCH of cell 2 shall be activated.

8) SS shall send an ACTIVE SET UPDATE message with activation time "now ", adding cell 2 to the active set. The ACTIVE SET UPDATE message shall be sent to the UE so that the whole message is available at the UE at the beginning of T4.

9) At the beginning of T5 the DPCH from cell 1 shall be switched off.

10) The UE downlink BLER shall be measured during time period T6.

11) 5 seconds after step10 has completed, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

12) BLER is measured during concatenated time periods T6.Repeat step 1-11 until the confidence level for BLER is achieved. This is defined in annex F.6.1.10

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	2
-Intra-frequency event identity	Event 1A
-Triggering condition 2	~~Active set cells and m~~Monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells~~ and monitored set cells~~
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB

Information Element/Group name	Value/Remark
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	Not Present
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL. Note 2: Reporting interval = 0 ms means no periodical reporting	

ACTIVE SET UPDATE message (step 8):

Information Element/Group name	Type and reference	Value/Remark
Message Type	Message Type	
UE information elements		
-RRC transaction identifier	RRC transaction identifier 10.3.3.36	0
-Integrity check info -message authentication code -RRC message sequence number	Integrity check info 10.3.3.16	 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
-Integrity protection mode info	Integrity protection mode info 10.3.3.19	Not Present
-Ciphering mode info	Ciphering mode info 10.3.3.5	Not Present
-Activation time	Activation time 10.3.3.1	"now".
-New U-RNTI	U-RNTI 10.3.3.47	Not Present
CN information elements		
-CN Information info	CN Information info 10.3.1.3	Not Present
Phy CH information elements		
Uplink radio resources		
-Maximum allowed UL TX power	Maximum allowed UL TX power 10.3.6.39	33 dBm
Downlink radio resources		
-Radio link addition information	Radio link addition information 10.3.6.68	Radio link addition information required for each RL to add
-Primary CPICH info~~-Radio link addition information~~	Primary CPICH info 10.3.6.60~~Radio link addition information 10.3.6.68~~	Same as defined in cell2

Information Element/Group name	Type and reference	Value/Remark
-Downlink DPCH info for each RL -CHOICE *mode* -FDD -Primary CPICH usage for channel estimation -DPCH frame offset -Secondary CPICH info -DL channelisation code -Secondary scrambling code -Spreading factor -Code number -Scrambling code change -TPC combination index -SSDT Cell Identity -Closed loop timing adjustment mode -TFCI combining indicator -SCCPCH Information for FACH	Downlink DPCH info for each RL 10.3.6.21 Primary CPICH usage for channel estimation 10.3.6.62 Integer(0..38144 by step of 256) Secondary CPICH info 10.3.6.73 Secondary scrambling code 10.3.6.74 Integer(4, 8, 16, 32, 64, 128, 256, 512) Integer(0..Spreading factor - 1) Enumerated (code change, no code change) TPC combination index 10.3.6.85 SSDT Cell Identity 10.3.6.76 Integer(1, 2) TFCI combining indicator 10.3.6.81 SCCPCH Information for FACH 10.3.6.70	 Primary CPICH may be used This should be reflected by the IE" Cell synchronisation information" in received MEASUREMENT REPORT message Not Present Not Present 128 96 No code change 0 Not Present Not Present FALSE Not Present
-Radio link removal information		Radio link removal information required for each RL to remove
->Radio link removal information	Radio link removal information 10.3.6.69	Not Present
-TX Diversity Mode	TX Diversity Mode 10.3.6.86	None
-SSDT information	SSDT information 10.3.6.77	Not Present

~~Radio link addition information~~

~~Information Element/Group name~~	~~Need~~	~~Multi~~	~~Type and reference~~	~~Value/Remark~~
~~Primary CPICH info~~	~~MP~~		~~Primary CPICH info 10.3.6.60~~	~~Same as defined in cell2~~
~~Downlink DPCH info for each RL~~	~~MP~~		~~Downlink DPCH info for each RL 10.3.6.21~~	~~See below~~
~~TFCI combining indicator~~	~~MP~~		~~TFCI combining indicator 10.3.6.81~~	~~FALSE~~
~~SCCPCH Information for FACH~~	~~OP~~		~~SCCPCH Information for FACH 10.3.6.70~~	~~Not Present~~

~~Downlink DPCH info for each RL~~

~~Information Element/Group name~~	~~Type and reference~~	~~Value/Remark~~
~~CHOICE *mode*~~		
~~>FDD~~		
~~>>Primary CPICH usage for channel estimation~~	~~Primary CPICH usage for channel estimation~~	~~Primary CPICH may be used~~

~~Information Element/Group name~~	~~Type and reference~~	~~Value/Remark~~
	~~10.3.6.62~~	
~~>>DPCH frame offset~~	~~Integer(0..38144 by step of 256)~~	~~This should be reflected by the IE" Cell synchronisation information" in received MEASUREMENT REPORT message~~
~~>>Secondary CPICH info~~	~~Secondary CPICH info 10.3.6.73~~	~~Not Present~~
~~>>DL channelisation code~~		
~~>>>Secondary scrambling code~~	~~Secondary scrambling code 10.3.6.74~~	~~Not Present~~
~~>>>Spreading factor~~	~~Integer(4, 8, 16, 32, 64, 128, 256, 512)~~	~~128~~
~~>>>Code number~~	~~Integer(0..Spreading factor - 1)~~	~~96~~
~~>>>Scrambling code change~~	~~Enumerated (code change, no code change)~~	~~No code change~~
~~>>TPC combination index~~	~~TPC combination index 10.3.6.85~~	~~0~~
~~>>SSDT Cell Identity~~	~~SSDT Cell Identity 10.3.6.76~~	~~Not Present~~
~~>>Closed loop timing adjustment mode~~	~~Integer(1, 2)~~	~~Not Present~~

8.3.1.5 Test requirements

Table 8.3.1.1.3: Cell specific test parameters for Soft handover

Parameter	Unit	Cell 1						Cell 2					
		T1	T2	T3	T4	T5	T6	T1	T2	T3	T4	T5	T6
CPICH_Ec/Ior	dB	-9.3						-9.3					
PCCPCH_Ec/Ior	dB	-11.3						-11.3					
SCH_Ec/Ior	dB	-11.3						-11.3					
PICH_Ec/Ior	dB	-14.3						-14.3					
DPCH_Ec/Ior	dB	Note1	Note1	Note1		N/A	N/A	N/A	N/A	Note3	Note1	Note1	
OCNS		Note2	Note2	Note2		-1.13	-1.13	-1.13	-1.13	Note2	Note2	Note2	
$\hat{I}_{or}/I_{oc}$	dB	0	2.91	2.91		2.91	2.91	-Inf	2.91	2.91	2.91	2.91	
I_{oc}	dBm/ 3.84 MHz	-70											
CPICH_Ec/Io	dB	-12.3	-13.3	-13.3		-13.3	-13.3	-Inf	-13.3	-13.3	-13.3	-13.3	
Propagation Condition		AWGN											
Relative delay of paths received from cell 2 with respect to cell 1	chips	{-147.5 Ö 147.5} Note 4											
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or} Note 3: The DPCH level is controlled by the power control loop. The initial power shall be set equal to the DPCH_Ec/Ior of Cell 1 at the end of T2. Note 4: The relative delay of the path from cell 2 with respect to cell 1 shall always be within ñ147.5 Ö 147.5 chip.													

The average measured quality on the DTCH of the UE downlink during T6 shall be BLER =0.01±30%. (The final BLER shall be achieved by integrating over a number of repetitions of procedure step 10).

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #25
Malta, 2th ñ 5th November 2004

Tdoc ⌘T1-041667

CR-Form-v7.1

CHANGE REQUEST

⌘ **34.121**	**CR** 442	⌘ **rev**	**-**	⌘	Current version:	**5.5.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Corrections to RRM test cases 8.6.1.2 Event riggered reportingÖ		
Source:	⌘	Rohde & Schwarz		
Work item code:	⌘		***Date:*** ⌘	20/10/2004
Category:	⌘	**F**	***Release:*** ⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *Ph2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)* *Rel-7 (Release 7)*

Reason for change:	⌘	The start of T2 is not an instant, minimum requirements are referred to. Currently T2 controlls the instant of the Active Set Update Command. This is difficult for implementation and useless for test purpose. It is the same with T5
Summary of change:	⌘	The Active Set Update command is sent prior to the beginning of T2.
Consequences if not approved:	⌘	Difficult for SS implementation and useless for test purpose.

Clauses affected:	⌘	8.6.1.2				
		Y	**N**			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)

8.6.1.2.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the Release 99 FDD UE.

8.6.1.2.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.2.

8.6.1.2.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.2.4 Method of test

8.6.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The initial test parameters are given in table 8.6.1.2.4.

Table 8.6.1.2.1: Cell specific initial test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	0	-Inf	-Inf
$\hat{I}_{or}$ *(Note 1)*	dBm	-85	-Inf	-Inf
I_{oc}	dBm/3.84 MHz	-85		
CPICH_Ec/Io	dB	-13	-Inf	-Inf
Propagation Condition		AWGN		
Note 1: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.				

The test parameters are given in table 8.6.1.2.2 and 8.6.1.2.5. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A, 1C and 1B shall be used and the periodical reporting of the events is not applied. The CPICH Ec/Io and SFN-CFN observed time difference shall be reported together with Event 1A. The test consists of six successive time periods, with a time duration of T1, T2, T3, T4, T5 and T6 respectively. In the initial condition before the time T1, defined as T0, only Cell 1 is active.

Table 8.6.1.2.2: General test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		0	Applicable for event 1A and 1B
Replacement activation threshold		0	Applicable for event 1C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		32	NOTE: See Annex I for cell information.
T1	s	10	
T2	s	1	
T3	s	10	
T4	s	5	
T5	s	1	
T6	s	10	

Table 8.6.1.2.3: Cell specific test parameters for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit	Cell 1						Cell 2						Cell3					
		T1	T2	T3	T4	T5	T6	T1	T2	T3	T4	T5	T6	T1	T2	T3	T4	T5	T6
CPICH_Ec/Ior	dB	-10						-10						-10					
PCCPCH_Ec/Ior	dB	-12						-12						-12					
SCH_Ec/Ior	dB	-12						-12						-12					
PICH_Ec/Ior	dB	-15						-15						-15					
DPCH_Ec/Ior	dB	Note 1						N/A						N/A	Note 1			N/A	
OCNS_Ec/Ior	dB	Note 2						-0.941						-0.941	Note 2			-0.941	
$\hat{I}_{or}/I_{oc}$	dB	6.97		6.93	5.97		6.12	-Inf		9.43	6.97		7.62	5.97		6.93	-Inf		5.62
$\hat{I}_{or}$ (Note 3)	dBm	-78.03		-78.07	-79.03		-78.88	-Inf		-75.57	-78.03		-77.38	-79.03		-78.07	-Inf		-79.38
I_{oc}	dBm/ 3.84 MHz	-85																	
CPICH_Ec/Io	dB	-13		-16	-14		-15.5	-Inf		-13.5	-13		-14	-14		-16	-Inf		-16
Propagation Condition		AWGN																	

Note 1: The DPCH level is controlled by the power control loop
Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}
Note 3 : The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.6.1.2.4.2 Procedure

1) The RF parameters are set up according to T0 in table 8.6.1.2.4.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) 5 seconds after step4 has completed, the SS shall switch the power settings for T0 to T1 in table 8.6.1.2.5.

6) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T1 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

7) During the time period T1, the SS shall after the Event 1A triggered measurement is reported send an Active Set Update command with activation time ìstart of T2î adding cell 3 to the active set. The Active Set Update message shall be sent to the UE, so that the whole message is available at the UE at least the RRC procedure delay prior to the beginning of T2.

8) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

9) After 11 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T3 in table 8.6.1.2.5.

10) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. The measurement reporting delay from the beginning of T3 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

11) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T3 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

12) Void.

13) After 10 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4 in table 8.6.1.2.5.

14) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1B. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

15) During the time period T4, SS shall after the Event 1B triggered measurement is reported send an Active Set Update command with activation time ìstart of T5î removing cell 3 from the active set. The Active Set Update message shall be sent to the UE, so that the whole message is available at the UE at least the RRC procedure delay prior to the beginning of T5

16) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

17) After 6 seconds from the beginning of T4, the SS shall switch the power settings from T5 to T6 in table 8.6.1.2.5.

18) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T6 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

19) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

20) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

21) After 10 seconds from the beginning of T6, the UE is switched off.

22) Repeat steps 1-21 until the confidence level according to annex F.6.2 is achieved.

3GPP TSG-T1 Meeting #25
Malta, 1st ñ 5th November 2004

Tdoc ⌘T1-041684

CR-Form-v7

CHANGE REQUEST

⌘	**34-121**	**CR** 443	⌘ **rev**	**-**	⌘ Current version:	**5.5.0** ⌘

For ***HELP*** *on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects:	UICC apps⌘ [ ]	ME [X]	Radio Access Network [ ]	Core Network [ ]

Title:	⌘	Update of references to GSM core specifications		
Source:	⌘	Ericsson		
Work item code:	⌘	TEI	***Date:*** ⌘	21/10/2004
Category:	⌘	**F**	***Release:*** ⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	TS 34.121 currently only reference to the R99 GSM core specifications for 05.05 and 05.08. From Rel-4 05.05 and 05.08 have been renumbered to 45.005 and 45.008 respectively.
Summary of change:	⌘	1. Added 45.005 and 45.008 to list of refernces (section 2) 2. References to 05.05 have been updated to also reference to 45.005 for Rel-4 and later releases 3. References to 05.08 have been updated to also reference to 45.008 for Rel-4 and later releases
Consequences if not approved:	⌘	Incorrect references to GSM core specifications for Rel-4 and later releases.

Clauses affected:	⌘	2, 8.2.3, 8.3.5 and 8.7.3A			
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Affects Rel4 and Rel5 UEs.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<Start of first modified section>

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document.

- For a Release 1999 UE, references to 3GPP documents are to version 3.x.y.
- For a Release 4 UE, references to 3GPP documents are to version 4.x.y.
- For a Release 5 UE, references to 3GPP documents are to version 5.x.y.

[1] 3GPP TS 25.101 "UE Radio transmission and reception (FDD)".

[2] 3GPP TS 25.133 "Requirements for Support of Radio Resource Management (FDD)".

[3] 3GPP TS 34.108 "Common Test Environments for User Equipment (UE) Conformance Testing".

[4] 3GPP TS 34.109 "Terminal logical test interface; Special conformance testing functions".

[5] 3GPP TS 25.214 "Physical layer procedures (FDD)".

[6] 3GPP TR 21.905 "Vocabulary for 3GPP Specifications".

[7] 3GPP TR 25.990 "Vocabulary".

[8] 3GPP TS 25.331: "Radio Resource Control (RRC); Protocol Specification".

[9] 3GPP TS 25.433 "UTRAN Iub Interface NBAP Signalling".

[10] ITU-R Recommendation SM.329: "Spurious emissions".

[11] 3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode".

[12] 3GPP TS 25.303: "Interlayer Procedures in Connected Mode".

[13] 3GPP TS 25.321: "Medium Access Control (MAC) protocol specification".

[14] 3GPP TS 25.213: "Spreading and modulation (FDD)".

[15] 3GPP TS 25.223: "Spreading and modulation (TDD)".

[16] ETSI ETR 273-1-2: "Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".

[17] 3GPP TR 25.926: "UE Radio Access Capabilities".

[18] 3GPP TR 21.904: "UE capability requirements".

[19] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".

[20] 3GPP TS 05.08 (R99): "Technical Specification Group GSM/EDGE Radio Access Network; Radio subsystem link control".

[21] 3GPP TS 34.123-1: "User Equipment (UE) Conformance Specification; Part 1: Protocol Conformance Specification".

[22] 3GPP TS 25.215: "Physical Layer ñ Measurements (FDD)".

[23] 3GPP TS 25.101 "UE Radio transmission and reception (FDD), Release 5".

[24] 3GPP TR 34.902 " Derivation of test tolerances for multi-cell Radio Resource Management (RRM) conformance tests ".

[25] 3GPP TS 51.010-1: "Mobile Station (MS) conformance specification; Part 1: Conformance specification ".

[26] 3GPP TS 25.307 "Requirements on UEs supporting a release independent frequency band".

[27] ITU-T recommendation O.153: "Basic parameters for the measurement of error performance at bit rates below the primary rate".

[28] 3GPP TS 05.05 (R99): "Technical Specification Group GSM/EDGE Radio Access Network; Radio transmission and reception".

[29] 3GPP TS 45.005 (Rel-4 and later releases): "Technical Specification Group GSM/EDGE Radio Access Network; Radio transmission and reception".

[30] 3GPP TS 45.008 (Rel-4 and later releases): "Technical Specification Group GSM/EDGE Radio Access Network; Radio subsystem link control".

<End of modified section>

<Start of first modified section>

8.2.3 UTRAN to GSM Cell Re-Selection

8.2.3.1 Scenario 1: Both UTRA and GSM level changed

8.2.3.1.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell and starts to send the RR Channel Request message for location update to the new cell.

The requirements and this test apply to the combined FDD and GSM UE.

8.2.3.1.2 Minimum requirement

The cell re-selection delay shall be less than 26 s + T_{BCCH}, where TBCCH is the maximum time allowed to read BCCH data from GSM cell, see TS 05.08 [20] for R99 and TS 45.008 [30] for Rel-4 and later releases.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: 4* $T_{measureGSM}$ + T_{BCCH}, where:

$T_{measureGSM}$ See table 4.1 in TS 25.133 [2] clause 4.2.2.

T_{BCCH} Maximum time allowed to read BCCH data from GSM cell, see TS 05.08 [20] for R99 and TS 45.008 [30] for Rel-4 or later releases.
According to [20] and [30], the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.

This gives a total of 25.6 s + T_{BCCH}, allow 26 s + T_{BCCH} in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2 and A.4.3.1.

8.2.3.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.3.1.4 Method of test

8.2.3.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected, as given in tables 8.2.3.1.1 to 8.2.3.1.5. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 12 GSM cells. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.3.1.1: Scenario 1: General test parameters for UTRAN to GSM Cell Re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cell		Cell2	
Final condition	Active cell		Cell2	
HCS				Not used
DRX cycle length		s	1.28	
T1		s	45	
T2		s	35	

Table 8.2.3.1.2: Scenario 1: Test parameters for Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	DB	-10	
PCCPCH_Ec/Ior	DB	-12	
SCH_Ec/Ior	DB	-12	
PICH_Ec/Ior	DB	-15	
OCNS_Ec/Ior	DB	-0.941	
$\hat{I}_{or}/I_{oc}$	DB	0	-5
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io	DB	-13	-16.2
CPICH_RSCP	DBm	-80	-85
Propagation Condition		AWGN	
Cell_selection_and_ reselection_quality_measure		CPICH E_c/N_0	
Qqualmin	DB	-20	
Qrxlevmin	DBm	-115	
UE_TXPWR_MAX_RACH	DBm	21	
Qoffset1$_{s, n}$	DB	C1, C2: 0	
Qhyst1	DB	0	
Treselection	S	0	
Ssearch$_{RAT}$	DB	not sent	

Table 8.2.3.1.3: Scenario 1: Test parameters for Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	DBm	-90	-75
RXLEV_ACCESS_MIN	DBm	-104	
MS_TXPWR_MAX_CCH	DBm	33	

8.2.3.1.4.2 Procedure

1) The SS activates cell 1 and 2 with T1 defined parameters in tables 8.2.3.1.4 and 8.2.3.1.5 and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

3) The SS waits for random access requests from the UE on cell 1.

4) After 45 s, the parameters are changed as described for T2 in tables 8.2.3.1.4 and 8.2.3.1.5.

5) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 28 s then the number of successful tests is increased by one.

6) After 35 s, the parameters are changed as described for T1 in tables 8.2.3.1.4 and 8.2.3.1.5.

7) The SS waits for random access requests from the UE on cell 1.

8) Repeat step 4) to 7) until the confidence level according to annex F.6.2 is achieved.

8.2.3.1.5 Test requirements

Table 8.2.3.1.4: Scenario 1: Cell re-selection UTRAN to GSM cell case (cell 1), test requirements

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-9.9	-10.1
PCCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
OCNS_Ec/Ior	dB	-0.953	-0,928
$\hat{I}_{or}/I_{oc}$	dB	0.3	-5.3
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io (Note 1)	dB	-12.8	-16.5
CPICH_RSCP (Note1)	dBm	-79.6	-85.4
Propagation Condition		AWGN	
Cell_selection_and_ reselection_quality_measure		CPICH E_c/N_0	
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
Qoffset1$_{s, n}$	dB	C1, C2: 0	
Qhyst1	dB	0	
Treselection	s	0	
Ssearch$_{RAT}$	dB	not sent	

Table 8.2.3.1.5: Scenario 1: Cell re-selection UTRAN to GSM cell case (cell 2), test requirements

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-90.3	-74.7
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

NOTE 1: CPICH_Ec/Io and CPICH_RSCP levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95 %.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.3.2 Scenario 2: Only UTRA level changed

8.2.3.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell and starts to send the RR Channel Request message for location update to the new cell.

The requirements and this test apply to the combined FDD and GSM UE.

8.2.3.2.2 Minimum requirement

The cell re-selection delay shall be less than 7.7 s + T_{BCCH}, where TBCCH is the maximum time allowed to read BCCH data from GSM cell, see TS 05.08 [20] for R99 and TS 45.008 [30] for Rel-4 and later releases.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: Max (3* $T_{measureFDD}$, $T_{measureGSM}$+DRX cycle length) + T_{BCCH}, where:

$T_{measureFDD}$	See table 4.1 in TS 25.133 [2] clause 4.2.2.
$T_{measureGSM}$	See table 4.1 in TS 25.133 [2] clause 4.2.2.
DRX cycle length	1.28s see Table A.4.7.A in TS 25.133 [2] clause A.4.3.2.
T_{BCCH}	Maximum time allowed to read BCCH data from GSM cell, see TS 05.08 [20] for R99 and TS 45.008 [30] for Rel-4 and later releases. According to [20] and [30], the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.

This gives a total of 7.68 s + T_{BCCH}, allow 7.7 s + T_{BCCH} in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2 and A.4.3.2.

<End of modified section>

<Start of next modified section>

8.3.5.3 Cell Reselection to GSM

8.3.5.3.1 Definition and applicability

The cell re-reselection delay is defined as the time from the beginning of time period T2, to the moment when the UE starts to transmit the random access in Cell 2 (the GSM cell).

This requirements and this test apply to UE supporting FDD PS and GSM GPRS.

8.3.5.3.2 Minimum requirements

The cell re-selection delay shall be less than 5.5 + $\mathbf{T_{RA}}$ s.

The rate of correct reselections observed during repeated tests shall be at least 90%.

NOTE: The cell re-selection delay can be expressed

$$T_{reselection,\,GSM} = T_{identify,GSM} + T_{measurement,\,GSM} + 40 + T_{BCCH} + T_{RA}\ \text{ms}$$

where:

$T_{identify,GSM}$	Specified in TS 25.133 [2] clause 8.4.2.5.2.1, here it is 2880 ms
$T_{measurement,\,GSM}$	Specified in TS 25.133 [2] clause 5.5.2.1.4, here it is 640 ms
T_{BCCH}	According to TS 05.08 [20] for R99 and TS 45.008 [30] for Rel-4 and later releases, the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.
T_{RA}	The additional delay caused by the random access procedure in the GSM cell, is 10 ms (2 GSM radio frames).

These requirements assume radio conditions to be sufficient, so reading of system information can be done without errors.

The normative reference for this requirement is TS 25.133 [2] clauses 5.5.2.1.4 and A.5.5.3.

<End of modified section>

<Start of next modified section>

8.7.3A GSM Carrier RSSI

8.7.3A.1 Definition and applicability

The GSM carrier RSSI measurement is used for handover between UTRAN and GSM.

The requirements and this test apply to the combined FDD and GSM UE.

8.7.3A.2 Minimum Requirements

The UE shall meet the measurement accuracy requirements stated for RXLEV below, when the given measurement time allows the UE to take at least 3 GSM carrier RSSI samples per GSM carrier in the monitored set during the measurement period.

The absolute accuracy shall be as follows:

The R.M.S received signal level at the receiver input shall be measured by the UE and the BSS over the full range of -110 dBm to -48 dBm with an absolute accuracy of ±4 dB from -110 dBm to -70 dBm under normal conditions and ±6 dB over the full range under both normal and extreme conditions. The R.M.S received signal level at the receiver input shall be measured by the UE above -48 dBm up to -38 dBm with an absolute accuracy of ± 9 dB under both normal and extreme conditions.

If the received signal level falls below the reference sensitivity level for the type of UE or BSS, then the measured level shall be within the range allowing for the absolute accuracy specified above. In case the upper limit of this range is below the reference sensitivity level for the type of UE or BSS, then the upper limit shall be considered as equal to the reference sensitivity level.

The relative accuracy shall be as follows:

If signals of level x1 and x2 dBm are received (where x1 ≤ x2) and levels y1 and y2 dBm respectively are measured, if x2 - x1 < 20 dB and x1 is not below the reference sensitivity level, then y1 and y2 shall be such that:

(x2 - x1) - a ≤ y2 - y1 ≤ (x2 - x1 + b) if the measurements are on the same or on different RF channel within the same frequency band;

and

(x2 - x1) - c ≤ y2 - y1 ≤(x2 - x1 + d) if the measurements are on different frequency bands:

a, b, c and d are in dB and depend on the value of x1 as follows:

	a	b	c	d
x1 ≥ s+14, x2< -48 dBm	2	2	4	4
s+14 > x1 ≥ s+1	3	2	5	4
s+1 > x1	4	2	6	4

For single band MS or BTS and measurements between ARFCN in the same band for a multiband

MS or BTS;

s = reference sensitivity level as specified in 3GPP TS 05.05 [28] for R99 and in 3GPP TS 45.005 [29] for Rel-4 and later releases.

For measurements between ARFCN in different bands;

s = the reference sensitivity level as specified in ~~3GPP TS 05.05~~ [28] and [29] for the band including x1.

At extreme temperature conditions an extra 2 dB shall be added to c and d in above table.

The selectivity of the received signal level measurement shall be as follows:

- for adjacent (200 kHz) channel ≥ 16 dB;

- for adjacent (400 kHz) channel ≥ 48 dB;
- for adjacent (600 kHz) channel ≥ 56 dB.

The selectivity shall be met using random, continuous, GSM-modulated signals with the wanted signal at the level 20 dB above the reference sensitivity level.

The reporting range and mapping specified for RXLEV in TS 05.08[20] for R99 and in TS 45.008 [30] for Rel-4 and later releases shall apply.

The normative reference for this requirement is:

For R99: TS 25.133 [2] clause 8.1.2.5 and 9.1.4 and TS 05.08 [20] clause 8.1.2.

For Rel-4 and later releases: TS 25.133 [2] clause 8.1.2.5 and 9.1.4 and TS 45.008 [30] clause 8.1.2.

8.7.3A.3 Test purpose

The purpose of this test is to verify that the GSM Carrier RSSI measurement accuracy in CELL_DCH state, for UE that needs compressed mode to perform GSM measurements, is within the specified limits. This measurement is for UTRAN to GSM handover evaluation.

8.7.3A.4 Method of test

8.7.3A.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In the test in Cell_DCH state compressed mode with purpose ìGSM Carrier RSSI Measurementî is applied to measure on GSM. The gap length is 7, detailed definition is in clause C.5, Set 2 of table C.5.2 except for TGPRC and TGCFN. TGPRC and TGCFN shall set to "'Infinity" and "(Current CFN + (256 ñ TTI/10msec))mod 256". Table 8.7.3A.1 defines the limits of signal strengths and code powers on the UMTS FDD cell, where the requirement is applicable. In the measurement control information it is indicated to the UE that periodic reporting of the GSM RSSI measurement.

Table 8.7.3A.1: General GSM Carrier RSSI test parameters

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in section C.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns - GSM carrier RSSI measurement		Compressed mode reference pattern 2 Set 2	As specified in table C.5.2 section C.5
Inter-RAT measurement quantity		GSM Carrier RSSI	
BSIC verification required		Not required	
Monitored cell list size		6 GSM neighbours	Measurement control information is sent before the compressed mode patterns starts.

Table 8.7.3A.2: Cell specific GSM Carrier RSSI test parameters

Parameter	Unit	Cell 1
UTRA RF Channel number	-	Channel 1
CPICH_Ec/Ior	DB	-1
Ioc	dBm/ 3.84 MHz	-70
Propagation condition	-	AWGN

1) The SS is set to produce the BCCHs of 6 surrounding cells at 28 dBµVemf( ). The fading profile for the BCCHs of the surrounding cells will be set to static, see 51.010-1 [25]. The limits of the GSM test parameters are defined in TS 05.08 [20] for R99 and in TS 45.008 [30] for Rel-4 and latere releases.

2) After 30 seconds a call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Cell 1 is set up according to table 8.7.3A.1 and 8.7.3A.2.

<End of modified section>

3GPP TSG-T1 Meeting #25
Malta, 1st ñ 5th November, 2004

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CR-Form-v7

CHANGE REQUEST

⌘ 34.121	CR 445	⌘ rev - ⌘	Current version: 5.5.0 ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘ Clarification of HS-PDSCH and HS-SCCH signal structure		
Source:	⌘ Rohde & Schwarz		
Work item code:	⌘	***Date:*** ⌘	26/10/2004
Category:	⌘ **F** *Use one of the following categories:* ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	***Release:*** ⌘	R5 *Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘ 1) In some places HS-PDSCH shall be transmitted continuously In some places HS-PDSCH shall be part time DTXed In some places nothing is mentioned 2) The HS-SCCH signal structure, where it does not address the UE under test, is undefined.
Summary of change:	⌘ 1) It is clarified that HS-PDSCH is transmitted with constant power continuously and test specifically allocated or not allocated to the UE 2) It is clarified, that HS-SCCH_1 is transmitted with constant power continuously and test specifically allocated or not allocated to the UE. If HS-SCCH_2,3,4 are not DTXed, they are transmitted with constant power continuously.
Consequences if not approved:	⌘ Confusion where nothing is mentioned. Unnecessary functionality in the tester, as DTX is not relevant for the test

Clauses affected:	⌘ 9.3, 9.4, C.8, E.5				
		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘ 25.101 clarified the same in R4-040526 and 527 with respect to (1)				

9.3 Reporting of Channel Quality Indicator

9.3.1 AWGN Propagation Conditions

9.3.1.1 Definition and applicability

The reporting accuracy of channel quality indicator (CQI) under AWGN environments is determined by the reporting variance and the BLER performance using the transport format indicated by the reported CQI median.

The UE shall be tested only according to the data rate, supported. The data-rate-corresponding requirements shall apply to the UE.

The requirements and this test apply to all types of UTRA for the FDD UE for Release 5 and later releases that support HSDPA.

9.3.1.2 Minimum requirements

For the parameters specified in Table 9.3.1.1 and 9.3.1.2, the the reported CQI value shall be in the range of +/-2 of the reported median more than 90% of the time. If the HS-PDSCH BLER using transport format indicated by median CQI is less than 0.1, BLER using transport format indicated by (median CQI +2) shall be larger than 0.1. If the HS-PDSCH BLER using transport format indicated by median CQI is larger than 0.1, BLER using transport format indicated by (median CQI -1) shall be less than 0.1.

Table 9.3.1.1: Test Parameter for CQI: categories 1-6

Parameter	Unit	Test 1	Test 2	Test 3
$\hat{I}_{or}/I_{oc}$	dB	0	5	10
I_{oc}	dBm/3.84 MHz	-60		
Phase reference	-	P-CPICH		
HS-PDSCH E_c/I_{or} (*)	dB	-3		
HS-SCCH_1 E_c/I_{or}	dB	-10		
DPCH E_c/I_{or}	dB	-10		
Maximum number of H-ARQ transmission	-	1		
Number of HS-SCCH set to be monitored	-	1		
CQI feedback cycle	ms	2		
CQI repetition factor	-	1		
HS-DSCH transmission pattern	-	ìXOOXOOXî to incorporate inter-TTI=3 UEs, where ìXî indicates TTI in which HS-PDSCH is allocated to the UE, and ìOî indicates TTI, in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.		
Note1: Measurement power offset ìΓî is configured by RRC accordingly and as defined in [8]. Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI, median CQI -1, median CQI+2 are used. Other physical channel parameters are configured according to the CQI mapping table described in TS25.214				

Table 9.3.1.2: Test Parameter for CQI: categories 11,12

Parameter	Unit	Test 1	Test 2	Test 3
$\hat{I}_{or}/I_{oc}$	dB	0	5	10
I_{oc}	dBm/3.84 MHz	-60		
Phase reference	-	P-CPICH		
HS-PDSCH E_c/I_{or} (*)	dB	-3		
HS-SCCH_1 E_c/I_{or}	dB	-10		
DPCH E_c/I_{or}	dB	-10		
Maximum number of H-ARQ transmission	-	1		
Number of HS-SCCH set to be monitored	-	1		
CQI feedback cycle	ms	2		
CQI repetition factor	-	1		
HS-DSCH transmission pattern	-	ìXOOXOOXî, where ìXî indicates TTI in which HS-PDSCH is allocated to the UE, and ìOî indicates TTI, in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.		
Note1: Measurement power offset ìΓî is configured by RRC accordingly and as defined in [8]. Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI, median CQI -1, median CQI+2 are used. Other physical channel parameters are configured according to the CQI mapping table described in TS25.214				

The reference for this requirement is TS 25.101 [1] clauses 9.3.1.1 and 9.3.1.2.

9.3.1.3 Test purpose

To verify the UE receiver is capable of reporting the channel quality indicator (CQI) under AWGN by the reporting variance and the BLER performance using the transport format indicated by the reported CQI median such that CQI reported by the UE falls within the acceptable range.

9.3.1.4 Method of test

9.3.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1. Connect SS and an AWGN noise source to the UE antenna connector as shown in figure A.10.
2. Set Ack/Nack handling at the SS such that regardless of the response from the UE (Ack, Nack or DTX) new data is sent each time, this is because HARQ transmissions are set to one, i.e. no re-transmission of failed blocks.

9.3.1.4.2 Procedure

1) Set up an HSDPA call according to TS 34.108 [3] clause 7.3.6.3. Set test conditions according to test 1 according table 9.3.2.1 (Category 1-6) or 9.3.2.3 (Category 11,12).

2) Set test conditions according to test 1 according table 9.3.1.1

Note: the following part of the procedure will test, if the UE reports a limited range of CQI values under the predefined channel conditions.

3) The SS shall send TF according to CQI value [16] and keep it regardless of the CQI value, sent by the UE. For any HSDPA block, transmitted by the SS, record the received CQI value. Continue transmission and CQI collection up to [2000]

4) Set up a relative frequency distribution for the CQI-values, reported. Calculate the median value (Median CQI is the CQI that is at or crosses 50% distribution). This CQI-value is declared as Median CQI value,

5) If [1800] or more of the CQI values are in the range (Median CQI - 2) ≤ Median CQI ≤ (Median CQI + 2) then continue with step(7), otherwise fail the UE.

Note: the following part of the procedure will test, if BLER versus CQI has the correct sense.

6) The SS shall transmit the TF according to the median-CQI value and shall not react on the UEís CQI value. For any HSDPA block, transmitted by the SS, record ACK, NACK or DTX

Upon a transmission:
ACK received → record a success,
NACK received → record a fail
DTX received → record a fail

Continue transmission and ACK, NACK and DTX collection up to [1000] times

If the ratio (No of fails / No of fails + successes) < 0.1 then goto (7), otherwise goto (8)

7) The SS shall transmit the TF according to the median-CQI+2 value and shall not react on the UEís CQI value. For any HSDPA block, transmitted by the SS, record ACK, NACK or DTX

Upon a transmission:
ACK received → record a success,
NACK received → record a fail
DTX received → record a fail

Continue transmission and ACK, NACK and DTX collection up to [1000] times

If the ratio (No of fails / No of fails + successes) > 0.1

then pass the UE, otherwise fail the UE

8) The SS shall transmit the TF according to the median-CQI-1 value and shall not react on the UEís CQI value. For any HSDPA block, transmitted by the SS, record ACK, NACK or DTX

Upon a transmission:
ACK received → record a success,
NACK received → record a fail
DTX received → record a fail

Continue transmission and ACK, NACK and DTX collection up to [1000] times

If the ratio (No of fails / No of fails + successes) < 0.1

then pass the UE, otherwise fail the UE.

Note: The statistical selectivity based on [1000] samples is not sufficient to distinguish between BLER < 0.1 and > 0.1. However, it is assumed that the following differences

[true BLER on Median CQI - true BLER on (Median CQI + 2)] and
[true BLER on Median CQI - true BLER on (Median CQI - 1)]

are large enough to exceed the statistical uncertainty and hence the measurement can indicate the correct sense of BLER.

9) Repeat the same procedure (3 to 8) with test conditions according to the table 9.3.1.1 and table 9.3.1.2 for the other tests:

Category 1-6: Test 2 and Test 3
Category 11,12: Test 1 and Test 2

9.3.1.5 Test Requirements

The pass fail decision is already described in the test procedure 9.3.1.4.2.
No setting test tolerances are applied to the test parameters.

9.3.2 Fading Propagation Conditions

9.3.2.1 Definition and applicability

The reporting accuracy of the channel quality indicator (CQI) under fading environments is determined by the BLER performance using the transport format indicated by the reported CQI median.

In calculating BLER, for an HARQ process, if an odd number of consecutive DTXs are reported, the corresponding packets and one subsequent packet shall be discarded from BLER calculation. If an even number of consecutive DTXs are reported, the corresponding packets shall be discarded from BLER calculation.

The requirements and the test case apply to all types of UTRA for the FDD UE that supports HSDPA.

9.3.2.2 Minimum requirements

For the parameters specified in Table 9.3.2.1, the requirements are specified in terms of maximum BLERs at particular reported CQIs when transmitting a fixed transport format given by the CQI median as shown in Table 9.3.2.2.. The BLER at a particular reported CQI is obtained by associating a particular CQI reference measurement period with HS-PDSCH subframe overlapping with the end of this CQI reference measurement period and calculating the fraction of erroneous HS-PDSCH subframes.

Table 9.3.2.1: Test Parameters for CQI test in fading: categories 1-6

Parameter	Unit	Test 1	Test 2
HS-PDSCH E_c / I_{or} (*)	dB	-8	-4
$\hat{I}_{or} / I_{oc}$	dB	0	5
I_{oc}	dBm/3.84 MHz	-60	
Phase reference	-	P-CPICH	
HS-SCCH_1 E_c / I_{or}	dB	-8.5	
DPCH E_c / I_{or}	dB	-6	
Maximum number of H-ARQ transmission	-	1	
Number of HS-SCCH set to be monitored	-	1	
CQI feedback cycle	ms	2	
CQI repetition factor	-	1	
HS-DSCH transmission pattern	-	ìÖ .XOOXOOXÖ .î to incorporate inter-TTI=3 UEs, where ìXî indicates TTI in which HS-PDSCH is allocated to the UE, and ìOî indicates TTI in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.	
Propagation Channel		Case 8	
Note1: Measurement power offset ìΓî is configured by RRC accordingly and as defined in [7] Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI is used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214			

Table 9.3.2.2: Minimum requirement for CQI test in fading for categories 1-6

Reported CQI	Maximum BLER	
	Test 1	Test2
CQI median	60%	60%
CQI median + 3	15%	15%

For the parameters specified in Table 9.3.2.3, the requirements are specified in terms of BLERs at particular reported CQIs when a fixed transport format given by CQI median as shown in Table 9.3.2.4. The BLER at a particular reported CQI is obtained by associating a particular CQI reference measurement period with HS-PDSCH subframe overlapping with the end of this CQI reference measurement period and calculating the fraction of erroneous HS-PDSCH subframes.

Table 9.3.2.3: Test Parameters for CQI test in fading: categories 11-12

Parameter	Unit	Test 1	Test 2
HS-PDSCH E_c/I_{or} (*)	dB	-8	-4
$\hat{I}_{or}/I_{oc}$	dB	0	5
I_{oc}	dBm/3.84 MHz	-60	
Phase reference	-	P-CPICH	
HS-SCCH_1 E_c/I_{or}	dB	-8.5	
DPCH E_c/I_{or}	dB	-6	
Maximum number of H-ARQ transmission	-	1	
Number of HS-SCCH set to be monitored	-	1	
CQI feedback cycle	ms	2	
CQI repetition factor	-	1	
HS-DSCH transmission pattern	-	ìÖ .XOOXOOXÖ .î to incorporate inter-TTI=3 UEs, where ìXî indicates TTI in which HS-PDSCH is allocated to the UE, and ìOî indicates ~~DTX~~ <u>TTI, in which the HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.</u>	
Propagation Channel		Case 8	
Note1: Measurement power offset ìΓî is configured by RRC accordingly and as defined in [7] Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI is used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214			

Table 9.3.2.4: Minimum requirement for CQI test in fading for categories 11-12

Reported CQI	Maximum BLER	
	Test 1	Test 2
CQI median	60%	60%
CQI median + 3	15%	15%

The reference for this requirement is TS 25.101 [1] clauses 9.3.2.1 and 9.3.2.2.

9.3.2.3 Test purpose

To verify that the UE receiver is capable of reporting the channel quality indicator (CQI) under fading propagation conditions. When using the transport format indicated by the reported CQI median BLER shall meet the test requirements specified in tables 9.3.2.2 and 9.3.2.4.

9.3.2.4 Method of test

9.3.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect SS, multipath fading simulator and an AWGN noise source to the UE antenna connector as shown in figure A.10.

2) Set Ack/Nack handling at the SS such that regardless of the response from the UE (Ack, Nack or DTX) new data is sent each time, this is because HARQ transmissions are set to one, i.e. no re-transmission of failed blocks.

9.3.2.4.2 Procedure

1) Set up an HSDPA call according to TS 34.108 [3] clause 7.3.6.3. Set test conditions according to test 1 according table 9.3.2.1 (Category 1-6) or 9.3.2.3 (Category 11,12).

2) For an HSDPA block, transmitted by the SS, record the equivalent CQI value. SS shall not react on UEís reported CQI value, only record the reported CQI value.

3) Repeat step 2 up to [2000] times.

4) Set up a relative frequency distribution for the CQI-values, reported. Calculate the median value (Median CQI is the CQI that is at or crosses 50% distribution). This CQI-value is declared as Median CQI value,

5) The SS shall transmit the TF according to the median-CQI value and shall not react on the UEís reported CQI value.

6) Measure BLER as described below. Continue measuring BLER until [1000] events (ACK or NACK discarded DTXs not included) has occurred for each R1 and R2.

In the test there are two BLER requirements to be tested:

R1: HSDPA block with corresponding reported CQI = Median CQI BLER < 60%

R2: HSDPA block with corresponding reported CQI = Median CQI + 3 BLER < 15%

For any HSDPA block, transmitted by the SS, record ACK/NACK value (ACK, NACK or DTX) and the corresponding CQI report. These values are combined to obtain the BLER (Figure 9.3.2.1).

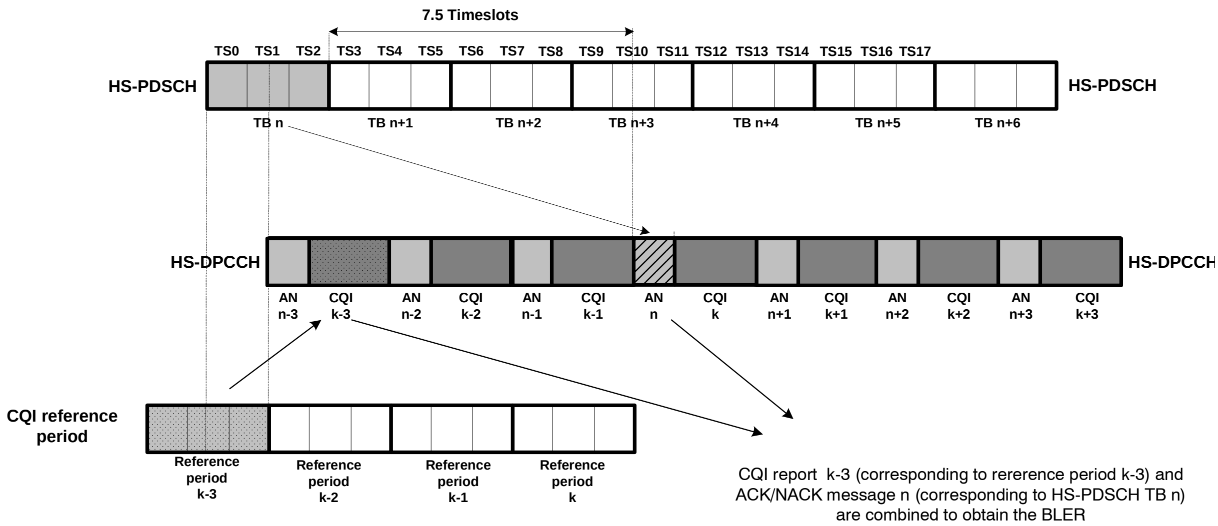

Figure 9.3.2.1 Combination of ACK/NACK message and the CQI report for BLER calculation

Upon a transmission:

CQI with ACK received → record a success,

CQI with NACK received → record a fail

In calculating BLER, for an HARQ process, if an odd number of consecutive DTXs are reported, the corresponding packets and one subsequent packet shall be discarded from BLER calculation. If an even number of consecutive DTXs are reported, the corresponding packets shall be discarded from BLER calculation

Repeat the same procedure with test conditions according to the table 9.3.2.1 and table 9.3.2.3 for the other tests:

Category 1-6: Test 2 of table 9.3.2.1

Category 11,12: Test 2 of table 9.3.2.3

9.3.2.5 Test Requirements

The measured BLER shall not exceed values specified in tables 9.3.2.2 and 9.3.2.4.

No setting test tolerance is applied to the test parameters.

9.4 HS-SCCH Detection Performance

9.4.1 Definition and applicability

The detection performance of the HS-SCCH is determined by the probability of event E_m, which is declared when the UE is signalled on HS-SCCH-1, but DTX is observed in the corresponding HS-DPCCH ACK/NACK field. The probability of event E_m is denoted $P(E_m)$.

The requirements and this test apply to all types of UTRA for FDD UE that support HSDPA.

9.4.2 Minimum requirements

For the parameters specified in Table 9.4.2, for each value of HS-SCCH-1 E_c/I_{or} specified in Table 9.4.3 the measured $P(E_m)$ shall be less than or equal to the corresponding specified value of $P(E_m)$.

Table 9.4.2: Test parameters for HS-SCCH detection

Parameter	Unit	Test 1	Test 2	Test 3
I_{oc}	dBm/3.84 MHz	-60		
Phase reference	-	P-CPICH		
P-CPICH E_c/I_{or} (*)	dB	-10		
HS-SCCH UE Identity ($x_{ue,1}$, $x_{ue,2}$, Ö, $x_{ue,16}$)		HS-SCCH-1: 1010101010101010 (UE under test addressed solely via HS-SCCH-1) HS-SCCH-2: 0001001010101010 HS-SCCH-3: 0001101010101010 HS-SCCH-4: 0001111110101010		
HS-DSCH TF of UE1		TF corresponding to CQI1		
HS-SCCH-1 TTI Transmission Pattern	-	ìÖ XOOXOOXÖ î, where ìXî indicates TTI in which HS-SCCH-1 signals the UE, and ìOî indicates ~~no signalling~~ TTI, in which the HS-SCCH_1 is not allocated to the UE. All HS-SCCHís shall be transmitted continuously with constant power.		

Table 9.4.3: Test requirement for HS-SCCH detection

Test Number	Propagation Conditions	Reference value		
		HS-SCCH-1 E_c/I_{or} **(dB)**	$\hat{I}_{or}/I_{oc}$ **(dB)**	$P(E_m)$
1	PA3	-9	0	0.05
2	PA3	-9.9	5	0.01
3	VA30	-10	0	0.01

The reference for this requirement is TS 25.101 [1] clause 9.4.1.

9.4.2.1 Test purpose

To verify that $P(E_m)$ does not exceed a specified limit.

9.4.2.2 Method of test

9.4.2.2.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1. Connect SS, multipath fading simulator and an AWGN noise source to the UE antenna connector as shown in figure A.16.

2. Set the test parameters for test 1-3 as specified in table 9.4.4 and 9.4.5. Setup fading simulators as fading condition, which are described in table D.2.2.1A. Power of downlink channels is defined in table E.5.4.

9.4.2.2.2 Procedure

1. The UE is switched on.

2. An RRC connection is set-up according to the generic HSDPA set-up procedure specified in TS 34.108 [3].

3. Count the number of NACK, ACK and DTX on the UL HS-DPCCH during the test interval and decide pass or fail according to Annex F.6.1. NACK and ACK are counted as a pass and DTX is counted as a failure.

9.4.2.3 Test Requirements

The parameters and requirements are specified in tableís 9.4.2 and 9.4.3. The probability of event E_m denoted as $P(E_m)$ (test procedure step 3) shall not exceed a specified value.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

C.8 DL reference channel parameters for HSDPA tests

C.8.1 Fixed Reference Channel (FRC)

C.8.1.1 Fixed Reference Channel Definition H-Set 1

Table C.8.1.1: Fixed Reference Channel H-Set 1

Parameter	Unit	Value	
Nominal Avg. Inf. Bit Rate	kbps	534	777
Inter-TTI Distance	TTIís	3	3
Number of HARQ Processes	Processes	2	2
Information Bit Payload (N_{INF})	Bits	3202	4664
Number Code Blocks	Blocks	1	1
Binary Channel Bits Per TTI	Bits	4800	7680
Total Available SMLís in UE	SMLís	19200	19200
Number of SMLís per HARQ Proc.	SMLís	9600	9600
Coding Rate		0.67	0.61
Number of Physical Channel Codes	Codes	5	4
Modulation		QPSK	16QAM
Note: The HS-DSCH shall be transmitted continuously with constant power but only every third TTI shall be allocated to the UE under test			

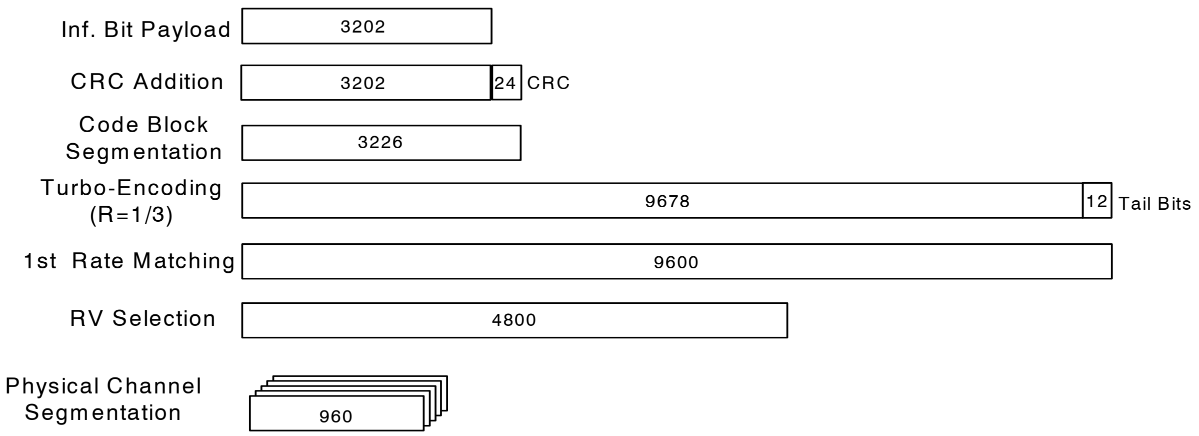

Figure C.8.1: Coding rate for Fixed reference Channel H-Set 1 (QPSK)

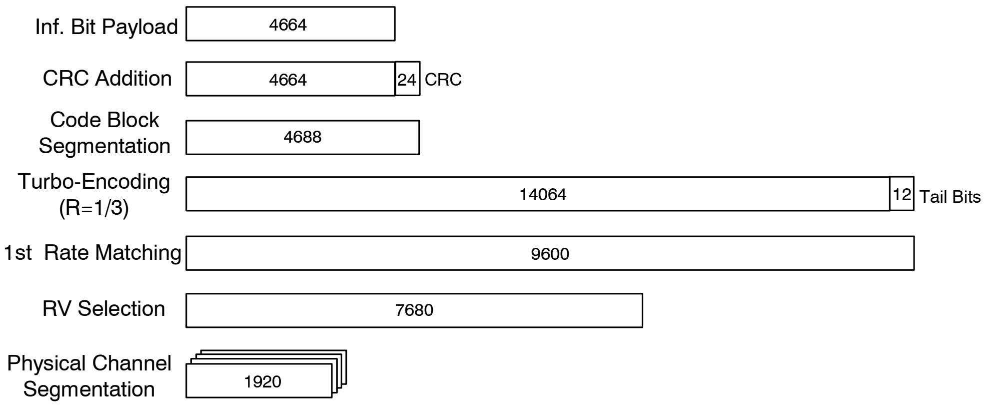

Figure C.8.2: Coding rate for Fixed reference Channel H-Set 1 (16 QAM)

C.8.1.2 Fixed Reference Channel Definition H-Set 2

Table C.8.1.2: Fixed Reference Channel H-Set 2

Parameter	Unit	Value	
Nominal Avg. Inf. Bit Rate	kbps	801	1166
Inter-TTI Distance	TTIís	2	2
Number of HARQ Processes	Processes	3	3
Information Bit Payload (N_{INF})	Bits	3202	4664
Number Code Blocks	Blocks	1	1
Binary Channel Bits Per TTI	Bits	4800	7680
Total Available SMLís in UE	SMLís	28800	28800
Number of SMLís per HARQ Proc.	SMLís	9600	9600
Coding Rate		0.67	0.61
Number of Physical Channel Codes	Codes	5	4
Modulation		QPSK	16QAM
Note: The HS-DSCH shall be transmitted continuously with constant power but only every second TTI shall be allocated to the UE under test			

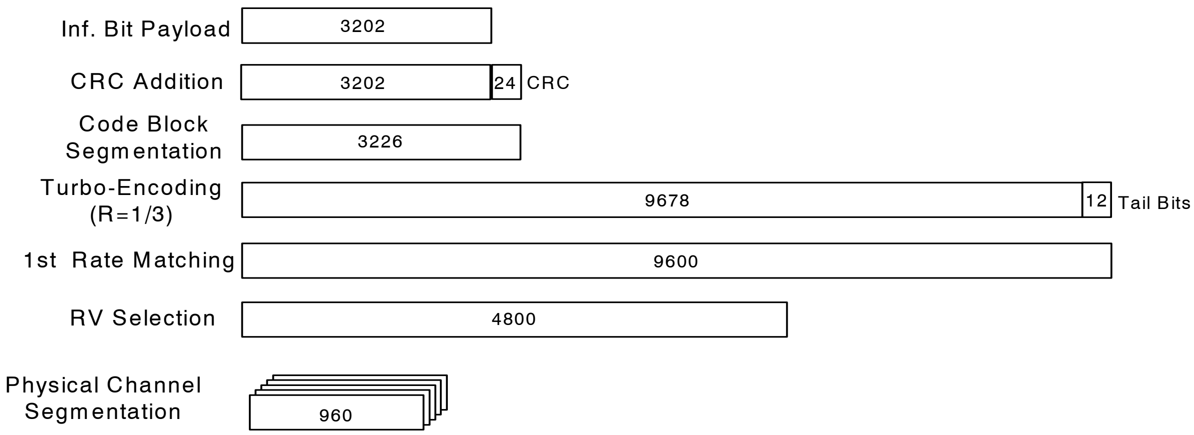

Figure C.8.3: Coding rate for Fixed Reference Channel H-Set 2 (QPSK)

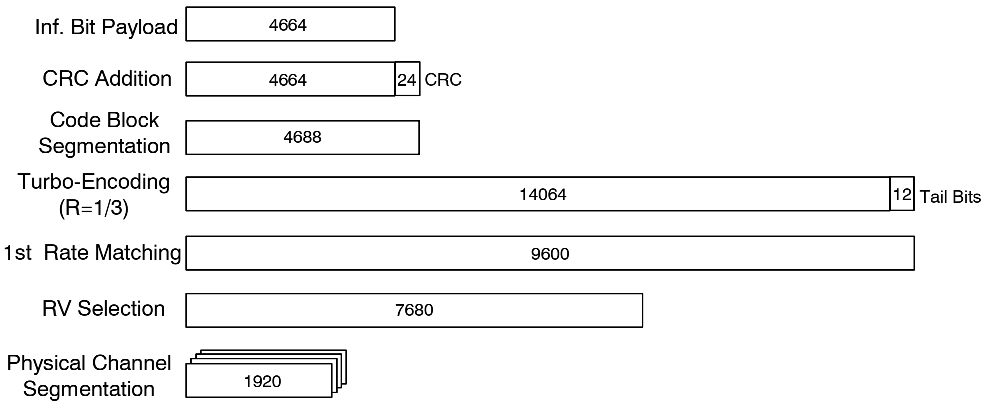

Figure C.8.4: Coding rate for Fixed Reference Channel H-Set 2 (16QAM)

C.8.1.3 Fixed Reference Channel Definition H-Set 3

Table C.8.1.3: Fixed Reference Channel H-Set 3

Parameter	Unit	Value	
Nominal Avg. Inf. Bit Rate	kbps	1601	2332
Inter-TTI Distance	TTIís	1	1
Number of HARQ Processes	Processes	6	6
Information Bit Payload (N_{INF})	Bits	3202	4664
Number Code Blocks	Blocks	1	1
Binary Channel Bits Per TTI	Bits	4800	7680
Total Available SMLís,in UE	SMLís	57600	57600
Number of SMLís per HARQ Proc.	SMLís	9600	9600
Coding Rate		0.67	0.61
Number of Physical Channel Codes	Codes	5	4
Modulation		QPSK	16QAM

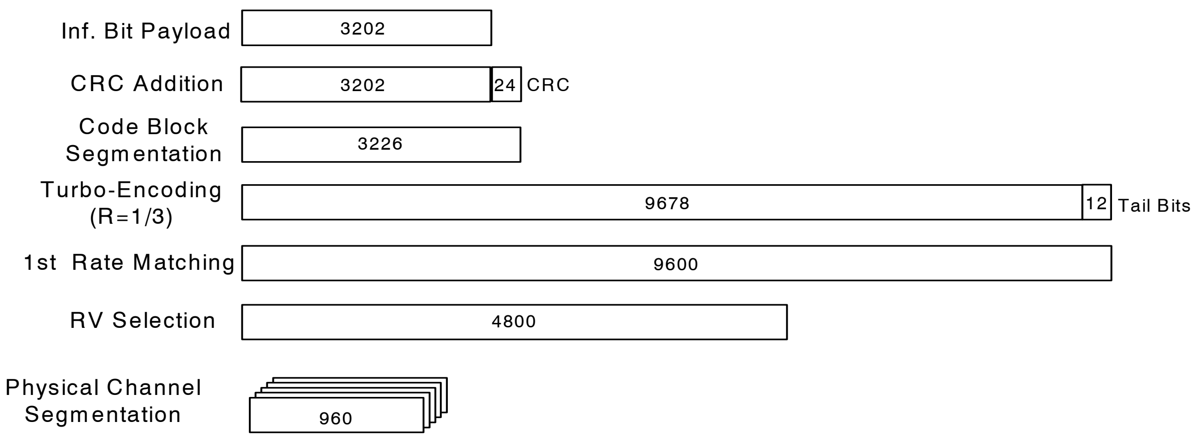

Figure C.8.5: Coding rate for Fixed reference Channel H-Set 3 (QPSK)

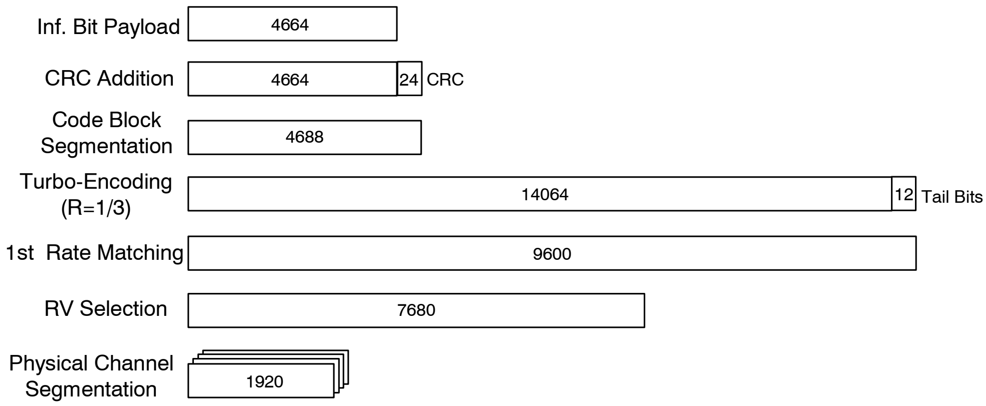

Figure C.8.6: Coding rate for Fixed reference Channel H-Set 3 (16QAM)

C.8.1.4 Fixed Reference Channel Definition H-Set 4

Table C.8.1.4: Fixed Reference Channel H-Set 4

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	534
Inter-TTI Distance	TTIís	2
Number of HARQ Processes	Processes	2
Information Bit Payload (N_{INF})	Bits	3202
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	4800
Total Available SMLís in UE	SMLís	14400
Number of SMLís per HARQ Proc.	SMLís	7200
Coding Rate		0.67
Number of Physical Channel Codes	Codes	5
Modulation		QPSK
Note: This test case verifies the minimum inter-TTI distance and therefore HS-PDSCH transmission shall be as follows: Ö 00X0X000X0XÖ , where ëXí marks TTI in which HS-PDSCH is transmitted to the UE and ë0í marks ~~DTX~~TTI, in which the HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.		

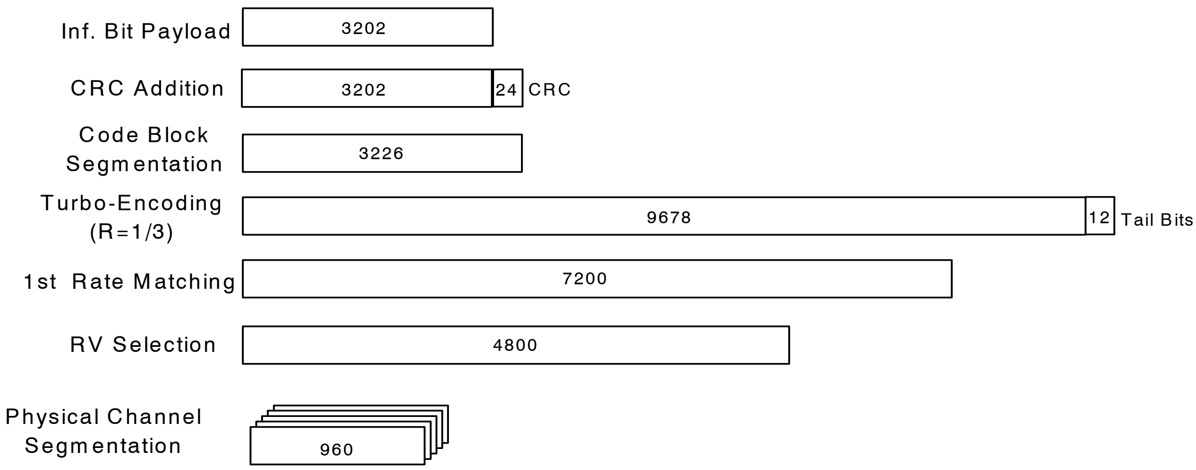

Figure C.8.7: Coding rate for Fixed Reference Channel H-Set 4

C.8.1.5 Fixed Reference Channel Definition H-Set 5

Table C.8.1.5: Fixed Reference Channel H-Set 5

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	801
Inter-TTI Distance	TTIís	1
Number of HARQ Processes	Processes	3
Information Bit Payload (N_{INF})	Bits	3202
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	4800
Total Available SMLís in UE	SMLís	28800
Number of SMLís per HARQ Proc.	SMLís	9600
Coding Rate		0.67
Number of Physical Channel Codes	Codes	5
Modulation		QPSK
Note: This test case verifies the minimum inter-TTI distance and therefore HS-PDSCH transmission shall be as follows: Ö 00XXX000XXXÖ , where ëXí marks TTI in which HS-PDSCH is allocated to the UE and ë0í marks ~~DTX~~ TTI, in which the HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.		

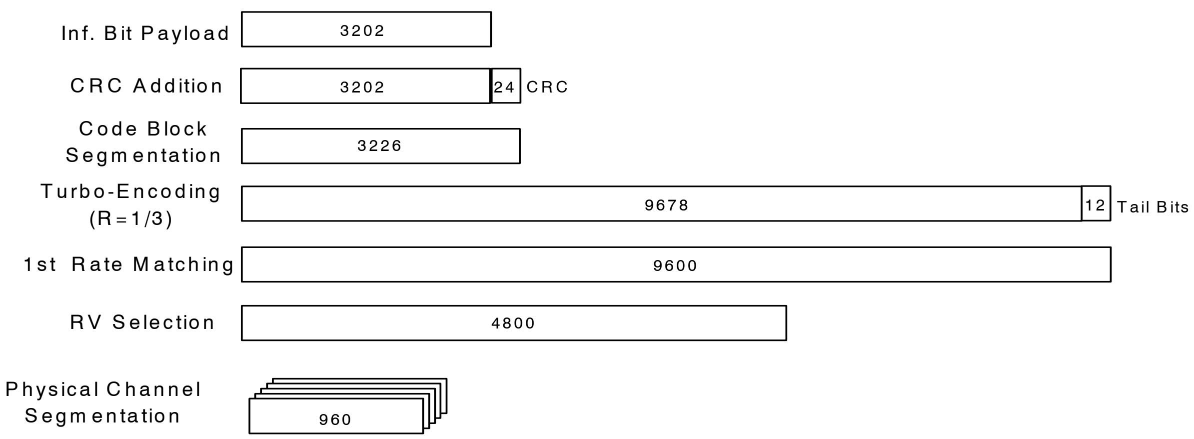

Figure C.8.8: Coding rate for Fixed Reference Channel H-Set 5

E.5 HSDPA DL Physical channels

E.5.1 Downlink Physical Channels connection set-up

Table E.5.1 is applicable for the measurements for tests in subclause 9.2.1 and 9.3. Table E.5.2 is applicable for the measurements for tests in subclause 9.2.2. Table E.5.3 is applicable for the measurements for tests in subclause 9.2.3. Table E.5.4 is applicable for the measurements for tests in subclause 9.4.

Table E.5.1: Downlink physical channels for HSDPA receiver testing for Single Link performance.

Physical Channel	Parameter	Value	Note
P-CPICH	P-CPICH_Ec/Ior	-10dB	
P-CCPCH	P-CCPCH_Ec/Ior	-12dB	Mean power level is shared with SCH.
SCH	SCH_Ec/Ior	-12dB	Mean power level is shared with P-CCPCH ñ SCH includes P- and S-SCH, with power split between both. P-SCH code is S_dl,0 as per [14] S-SCH pattern is scrambling code group 0
PICH	PICH_Ec/Ior	-15dB	
DPCH	DPCH_Ec/Ior	Test-specific	12.2 kbps DL reference measurement channel as defined in Annex C.3.1
HS-SCCH_1	HS-SCCH_Ec/Ior	Test-specific	Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval). During TTIs, in which the HS-SCCH is not allocated to the UE the HS-SCCH shall be transmitted continuously with constant power.
HS-SCCH_2	HS-SCCH_Ec/Ior	DTXíd	No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/Ior	DTXíd	As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/Ior	DTXíd	As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	OCNS interference consists of 6 dedicated data channels as specified in table E.5.5

Table E.5.2: Downlink physical channels for HSDPA receiver testing for Open Loop Transmit Diversity performance.

Physical Channel	Parameter	Value	Note
P-CPICH (antenna 1)	P-CPICH_Ec1/Ior	-13dB	1. Total P-CPICH_Ec/Ior = -10dB
P-CPICH (antenna 2)	P-CPICH_Ec2/Ior	-13dB	
P-CCPCH (antenna 1)	P-CCPCH_Ec1/Ior	-15dB	1. STTD applied. 2. Total P-CCPCH Ec/Ior is ñ12dB.
P-CCPCH (antenna 2)	P-CCPCH_Ec2/Ior	-15dB	
SCH (antenna 1/2)	SCH_Ec/Ior	-12dB	1. TSTD applied. 2. Power divided equally between primary and secondary SCH.
PICH (antenna 1)	PICH_Ec1/Ior	-18dB	1. STTD applied. 2. Total PICH Ec/Ior is ñ15dB.
PICH (antenna 2)	PICH_Ec2/Ior	-18dB	
DPCH	DPCH_Ec/Ior	Test-specific	1. STTD applied.
HS-SCCH_1	HS-SCCH_Ec/Ior	Test-specific	1. STTD applied. 2. Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval). During TTIs, in which the HS-SCCH_1 is not allocated to the UE, the HS-SCCH_1 shall be transmitted continuously with constant power.
HS-SCCH_2	HS-SCCH_Ec/Ior	DTXíd	1. UE assumes STTD applied. 2. No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/Ior	DTXíd	1. As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/Ior	DTXíd	2. As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	1. STTD applied.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	1. STTD applied. 2. Balance of power I_{or} of the Node-B is assigned to OCNS. 3. Power divided equally between antennas.

Table E.5.3: Downlink physical channels for HSDPA receiver testing for Closed Loop Transmit Diversity (Mode-1) performance.

Physical Channel	Parameter	Value	Note
P-CPICH (antenna 1)	P-CPICH_Ec1/Ior	-13dB	1. Total P-CPICH_Ec/Ior = -10dB
P-CPICH (antenna 2)	P-CPICH_Ec2/Ior	-13dB	
P-CCPCH (antenna 1)	P-CCPCH_Ec1/Ior	-15dB	1. STTD applied. 2. Total P-CCPCH Ec/Ior is ñ12dB.
P-CCPCH (antenna 2)	P-CCPCH_Ec2/Ior	-15dB	
SCH (antenna 1/2)	SCH_Ec/Ior	-12dB	1. TSTD applied. 2. Power divided equally between primary and secondary SCH.
PICH (antenna 1)	PICH_Ec1/Ior	-18dB	1. STTD applied. 2. Total PICH Ec/Ior is ñ15dB.
PICH (antenna 2)	PICH_Ec2/Ior	-18dB	
DPCH	DPCH_Ec/Ior	Test-specific	1. CL1 applied.
HS-SCCH_1	HS-SCCH_Ec/Ior	Test-specific	1. [TBD] applied. 2. Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval). During TTIs, in which the HS-SCCH_1 is not allocated to the UE, the HS-SCCH_1 shall be transmitted continuously with constant power.
HS-SCCH_2	HS-SCCH_Ec/Ior	DTXíd	1. UE assumes [TBD] applied. 2. No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/Ior	DTXíd	1. As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/Ior	DTXíd	2. As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	1. CL1 applied.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	1. STTD applied. 2. Balance of power I_{or} of the Node-B is assigned to OCNS. 3. Power divided equally between antennas.

Table E.5.4: Downlink physical channels for HSDPA receiver testing for HS-SCCH detection performance

Parameter	Units	Value	Comment
CPICH E_c/I_{or}	DB	-10	
CCPCH E_c/I_{or}	DB	-12	Mean power level is shared with SCH.
SCH E_c/I_{or}	DB	-12	Mean power level is shared with P-CCPCH ñ SCH includes P- and S-SCH, with power split between both. P-SCH code is S_dl,0 as per [14] S-SCH pattern is scrambling code group 0
PICH E_c/I_{or}	DB	-15	
HS-DSCH-1 E_c/I_{or}	DB	-10	HS-DSCH associated with HS-SCCH-1. The HS-DSCH shall be transmitted continuously with constant power.
HS-DSCH-2 E_c/I_{or}	DB	DTX	HS-DSCH associated with HS-SCCH-2
HS-DSCH-3 E_c/I_{or}	DB	DTX	HS-DSCH associated with HS-SCCH-3
HS-DSCH-4 E_c/I_{or}	DB	DTX	HS-DSCH associated with HS-SCCH-4
DPCH E_c/I_{or}	DB	-8	12.2 kbps DL reference measurement channel as defined in Annex C.3.1
HS-SCCH-1 E_c/I_{or}	DB	Test Specific	All HS-SCCHís allocated equal E_c/I_{or}. Specifies E_c/I_{or} when TTI is active. During TTIs, in which the HS-SCCHís are not allocated to the UE, the HS-SCCHís shall be transmitted continuously with constant power.
HS-SCCH-2 E_c/I_{or}	DB		
HS-SCCH-3 E_c/I_{or}	DB		
HS-SCCH-4 E_c/I_{or}	DB		
OCNS E_c/I_{or}	DB	Remaining power at Node-B (including HS-SCCH power allocation when HS-SCCHís inactive).	OCNS interference consists of 6 dedicated data channels as specified in table E.5.5

E.5.2 OCNS Definition

The selected channelization codes and relative power levels for OCNS transmission during for HSDPA performance assessment are defined in Table E.5.5. The selected codes are designed to have a single length-16 parent code.

Table E.5.5: OCNS definition for HSDPA receiver testing

Channelization Code at SF=128	Relative Level setting (dB)	DPCH Data
2	-6	The DPCH data for each channelization code shall be uncorrelated with each other and with any wanted signal over the period of any measurement.
3	-8	
4	-8	
5	-10	
6	-7	
7	-9	

3GPP TSG-T1 Meeting #25
Malta, 2th ñ 5th November 2004

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CR-Form-v7.1

CHANGE REQUEST

⌘	**34.121**	**CR**	451	⌘**rev**	**-**	⌘ Current version:	**5.5.0** ⌘

For ***HELP*** *on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘ Corrections to RRM test case 8.5.1 UE Transmit Timing			
Source:	⌘ Rohde & Schwarz			
Work item code:	⌘		***Date:*** ⌘	02/11/2004
Category:	⌘ **F**		***Release:*** ⌘	Rel-5

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(addition of feature),*
- ***C*** *(functional modification of feature)*
- ***D*** *(editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
- *Ph2 (GSM Phase 2)*
- *R96 (Release 1996)*
- *R97 (Release 1997)*
- *R98 (Release 1998)*
- *R99 (Release 1999)*
- *Rel-4 (Release 4)*
- *Rel-5 (Release 5)*
- *Rel-6 (Release 6)*
- *Rel-7 (Release 7)*

Reason for change: ⌘
a) In-complete test case procedure.
b) Incorrect measurement control message.
c) Measurement release message not sent before re-sending the measurement control message.
d) Events in the measurement report messages not specified.

Summary of change: ⌘
a) Clarified test procedure for event types reported in the measurement report messages.
b) Specified the measurement release message and corrected the procedure section for sending it.
c) Added PSC to Primary CPICH info in ACTIVESET UPDATE messages.
d) Moved 2) of Initial conditons to 1. of test procedure.
e) Made some editorial changes in test procedure.

Consequences if not approved: ⌘ Test case cannot be correctly implemented with the current specification.

Clauses affected: ⌘ 8.5.1

Other specs affected: ⌘	Y	N		
		X	Other core specifications	⌘
		X	Test specifications	

	X	O&M Specifications
Other comments:	⌘	

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.5.1 UE Transmit Timing

8.5.1.1 Definition and applicability

The UE transmit timing is defined as the timing of the uplink DPCCH/DPDCH frame relative to the first detected path (in time) of the corresponding downlink DPCCH/DPDCH frame from the reference cell. The reference point is the antenna connector of the UE.

The requirements and this test apply to all types of UTRA of the FDD UE.

8.5.1.2 Minimum requirements

The UE transmission timing error shall be less than or equal to ±1.5 chips. The reference point for the UE initial transmit timing control requirement shall be the time when the first detected path (in time) of the corresponding downlink DPCCH/DPDCH frame is received from the reference cell plus T_0 chips. T_0 is defined in TS25.211 [19].

When the UE is not in soft handover, the reference cell shall be the one the UE has in the active set. The cell, which is selected as a reference cell, shall remain as a reference cell even if other cells are added to the active set. In case that the reference cell is removed from the active set the UE shall start adjusting its transmit timing no later than the time when the whole active set update message is available at the UE taking the RRC procedure delay into account.

The UE shall be capable of changing the transmission timing according the received downlink DPCCH/DPDCH frame. The maximum amount of the timing change in one adjustment shall be ° chip.

The minimum adjustment rate shall be 233ns per second. The maximum adjustment rate shall be ° chip per 200 ms. In particular, within any given 800*d ms period, the UE transmit timing shall not change in excess of ±d chip from the timing at the beginning of this 800*d ms period, where $0 \le d \le 1/4$.

The normative reference for this requirement is TS 25.133 [2] clause 7.1.2.

8.5.1.3 Test purpose

The purpose of this test is to verify that the UE initial transmit timing accuracy, maximum amount of timing change in one adjustment, minimum and maximum adjustment rate are within the limits specified in 8.5.1.2.

8.5.1.4 Method of test

8.5.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

For this test, two cells on the same frequency are used.

The reporting of event 1A and event 1B is configured with SIB 11.

1) Connect the test system to the UE antenna connector as shown in figure A.1.

~~2) A call is set up with Cell 1 according to the Generic call setup procedure. The test parameters are set up according to table 8.5.1.1.~~

Table 8.5.1.1: Test parameters for UE Transmit Timing requirements

Parameter	Unit	Level
DPCH_Ec/ Ior, Cell 1 and Cell 2	dB	-17
CPICH_Ec/ Ior, Cell 1 and Cell 2	dB	-10
PCCPH_Ec/ Ior, Cell 1 and Cell 2	dB	-12
SCH_Ec/ Ior, Cell 1 and Cell 2	dB	-12
PICH_Ec/ Ior, Cell 1 and Cell 2	dB	-15
OCNS_Ec/ Ior, Cell 1 and Cell 2	dB	-1.05
$\hat{I}_{or}$ Cell 1	dBm/3.84 MHz	-96
$\hat{I}_{or}$ Cell 2	dBm/3.84 MHz	-99
Information data rate	Kbps	12.2
Relative delay of path received from cell 2 with respect to cell 1	µs	+/-2
Propagation condition	AWGN	

8.5.1.4.2 Procedure

1. A call is set up with Cell 1 according to the Generic call setup procedure. The test parameters are set up according to table 8.5.1.1.

~~a)~~2. After a connection is set up with cell 1, the test system shall verify that the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.

~~b)~~3. Test system introduces cell 2 into the test system at delay +2 µs from cell 1. UE transmits Measurement report message triggered by event 1A.~~, and~~ Test system transmits ACTIVESET UPDATE message (Radio link addition information).

~~c)~~4. Test system transmits Measurement Control message.~~, and it~~ Test system verifies that cell 2 is added to the active set.

~~d)~~5. Test system shall verify that the UE transmit timing offset is still within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.

~~e)~~6. Test system switches Tx timing of cell 2 to a delay of -2 µs with respect to cell 1.

~~f)~~7. Test system verifies cell 2 remains in the active set. SS then sends a Measurement Control message(measurement release for measurement ID 2)

~~g)~~8. Test system shall verify that the UE transmit timing offset is still within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.

~~h)~~9. Test system stops sending cell 1 signals.

~~i)~~10. Void

~~j)~~11. UE transmits Measurement report message triggered by event 1B, and Test system transmits ACTIVE SET UPDATE message (Radio link removal information). Test system verifies that UE transmit timing adjustment starts no later than the time when the whole active set update message is available at the UE taking the RRC procedure delay into account. The adjustment step size and the adjustment rate shall be according to the requirements in clause 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.

~~k)~~12. Test system shall verify that the UE transmit timing offset stays within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.

~~l)~~13. Test system starts sending cell 1 signal again with its original timing. UE transmits Measurement report message triggered by event 1A.~~, and~~ Test system transmits ACTIVESET UPDATE message (Radio link addition information).

~~m)~~14. Test system transmits Measurement Control message.~~, and it~~Test system verifies that cell 1 is added to the active set. ~~.~~SS then sends a Measurement Control message(measurement release for measurement ID 2).

~~n)~~15. Test system verifies that the UE transmit timing is still within $T_0 \pm 1.5$chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.

~~o)~~16. Test system stops sending cell 2 signals.

~~p)~~17. Void.

~~q)~~18. UE transmits Measurement report message triggered by event 1B, and Test system transmits ACTIVE SET UPDATE message (Radio link removal information). Test system verifies that UE transmit timing adjustment starts no later than the time when the whole active set update message is available at the UE taking the RRC procedure delay into account. The adjustment step size and the adjustment rate shall be according to the requirements in clause 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.

~~r)~~19. Test system shall verify that the UE transmit timing offset stays within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.

MEASUREMENT CONTROL message

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Intra-frequency measurement - Intra-frequency measurement objects list -Intra-frequency cell info list -Intra-frequency measurement quantity -Filter coefficient -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity -Reporting quantities for active set cells -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for monitored set cells -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for detected set cells -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -CHOICE *report criteria* -Amount of reporting -Reporting interval	 ~~1~~2 ~~Modify~~Setup Acknowledged mode RLC Periodical reporting Not Present Intra-frequency measurement Not Present 0 FDD CPICH RSCP TRUE TRUE FDD TRUE TRUE FALSE FALSE FALSE FDD FALSE FALSE FALSE Not Present Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Periodical reporting criteria Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

ACTIVESET UPDATE message (Radio link addition information)

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements - RRC transaction identifier - Integrity check info -message authentication code -RRC message sequence number - Activation time - New U-RNTI	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. "now". Not Present
CN information elements - CN Information info	 Not Present
Phy CH information elements **Uplink radio resources** - Maximum allowed UL TX power	 33 dBm
Downlink radio resources - Radio link addition information - Radio link addition information - Primary CPICH info - Primary scrambling code - Downlink DPCH info for each RL	 1 ~~Adding Cell~~ Same as adding cell
- CHOICE mode - Primary CPICH usage for channel estimation - DPCH frame offset - Secondary CPICH info	FDD Primary CPICH may be used This should be refrlected by the IE" Cell synchronisation information" in received MEASUREMENT REPORT message Not Present
- DL channelisation code - Secondary scrambling code - Spreading factor - Code number - Scrambling code change - TPC combination index - SSDT Cell Identity - Closed loop timing adjustment mode - TFCI combining indicator - SCCPCH Information for FACH - Radio link removal information - TX Diversity Mode	 Not Present 128 96 No code change 0 Not Present Not Present FALSE Not Present Not Present Not Present
- SSDT information	Not Present

ACTIVESET UPDATE message (Radio link removal information)

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements - RRC transaction identifier - Integrity check info -message authentication code -RRC message sequence number - Activation time - New U-RNTI	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. "now". Not Present
CN information elements - CN Information info	 Not Present
Phy CH information elements **Uplink radio resources** - Maximum allowed UL TX power	 33 dBm
Downlink radio resources - Radio link addition information - Radio link removal information - Primary CPICH info - Primary scrambling code - TX Diversity Mode	 Not Present 1 ~~Removing Cell~~ Same as removing cell Not Present
- SSDT information	Not Present

Measurement Control message (measurement release)

Information Element/Group name	**Value/Remark**
Message Type (10.2.17)	
UE information elements - RRC transaction identifier - Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity	 2
-Measurement Command	release

8.5.1.5 Test requirements

1) In step ~~a)~~2, ~~d)~~5. and ~~g)~~8., UE transmit timing offset shall be within T_0 ±1.5 chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.

2) In step ~~j)~~11., the adjustment step size and the adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within T_0 ±1.5 chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.

3) In step ~~k)~~12. and ~~n)~~15., UE transmit timing offset shall be within T_0 ± 1.5 chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.

4) In step ~~q)~~18., the adjustment step size and the adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within T_0 ± 1.5 chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.

5) In step ~~r)~~19., UE transmit timing offset shall be within T_0 ± 1.5 chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.

NOTE 1: The above Test Requirement differs from the Test Requirement of TS 25.133 [2] clause A7.1.2, from which the requirements for the test system are subtracted to give the above Test Requirement.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

Tdoc ⌘T1-041831

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CHANGE REQUEST

⌘	**34.121**	**CR**	452	⌘ **rev**	**-**	⌘	Current version:	**5.5.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects:	UICC apps⌘		ME	X	Radio Access Network		Core Network

Title:	⌘	Corrections and additions to Release 5 RRM test case 8.6.2.2
Source:	⌘	Rohde & Schwarz
Work item code:	⌘	
Date:	⌘	02/11/2004
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
Ph2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)
Rel-7 (Release 7)

Reason for change: ⌘
a) Test Procedure needs to be completed and corrected
b) Measurement control message is incorrect.
c) Compressed Mode Parameters are not specified.

Summary of change: ⌘
a) Added step 5 in the test procedure to transmit Physical Channel Configuration message to the UE containing Compressed Mode parameters.
b) Fading is started in step 6.
c) Description for the Physical Channel Configuration message is provided.
d) Measurement Control Message is corrected.

Consequences if not approved: ⌘
In the current specification of this test case:
a) It is unclear when fading will be started.
b) No Compressed mode parameters are transmitted to the UE which may be required for Inter-frequency measurements.
c) The Measurement Control message description does not comply with the ASN.1 coding, New Cell 3 is described in New Inter Frequency cells but is not configured in the test system.

Clauses affected: ⌘ 8.6.2.2

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	

	X	O&M Specifications
Other comments:	⌘	This CR applys to UEs for Release 5 and later releases.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6.2.2 Correct reporting of neighbours in fading propagation condition

8.6.2.2.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit the measurement report over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH. The requirements and this test apply to the FDD UE.

The requirements and this test apply to all types of UTRA for the FDD UE for Release 5 and later releases.

8.6.2.2.2 Minimum requirements

The requirements are the same as in sub clause 8.6.2.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.3 and A.8.2.2.

8.6.2.2.3 Test purpose

To verify that the UE meets the minimum requirements. The test is performed in fading propagation conditions.

8.6.2.2.4 Method of test

8.6.2.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mod range; see clause G.2.4.

The test parameters are given in table 8.6.2.2.4.1 and 8.6.2.2.4.2. In the measurement control information it is indicated to the UE that event-triggered reporting 2C shall be used. The test consists of two successive time periods, each with time duration of T1 and T2 respectively.

Table 8.6.2.2.4.1: General test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Compressed mode		A.22 set 2 (TGPL1=12)	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Absolute Threshold (Ec/N0) for Event 2C	dB	-18	
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		Total 24 8 on frequency Channel 2	NOTE: See Annex I for cell information.The information is sent before the compressed mode pattern starts.
Propagation Condition		Case 5	As specified in Annex B of TS 25.101.
Frequency offset	ppm	+/- 0.1	Frequency offset between Cell 1 and Cell 2.
T1	s	2	
T2	s	40	

Table 8.6.2.2.4.2: Cell specific test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	Note 1		N/A	
OCNS_Ec/Ior	dB	Note 2		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	0		-Infinity	-1.8
I_{oc}	dBm/3.84 MHz	-70		-70	
CPICH_Ec/Io	dB	-13		-Infinity	-14
Propagation Condition	Case 5 as specified in Annex B of TS25.101				
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.					

8.6.2.2.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up in AWGN conditions, according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

6) The fading simulator is switched on, configured with settings described in the tables above. T1 starts.

~~5~~7) After 2 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

~~6~~8) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C. The measurement reporting delay from the beginning of T2 shall be less than 36.4 s. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

~~7~~9) After 40 seconds from the beginning of T2, the UE is switched off.

~~8~~10) Repeat steps 1-~~7~~9 according to Annex F.6.2 Table 6.2.8.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 2 Setup AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) - CHOICE Inter-frequency cell removal - New Inter frequency cells - Inter frequency cell id - Frequency info - CHOICE mode - UARFCN uplink(Nu) - UARFCN downlink(Nd) - Cell info - Cell individual offset - Reference time difference to cell - Read SFN indicator - CHOICE mode - Primary CPICH info - Primary scrambling code - Primary CPICH Tx Power - Tx Diversity Indicator ~~- Cell Selection and Re-selection info~~ - Cell for measurement -Inter-frequency measurement quantity (10.3.7.18) -~~Intra-frequency~~CHOICE reporting criteria ~~-Intra-frequency measurement quantity (10.3.7.38)~~ ~~-Filter coefficient (10.3.7.9)~~ ~~-CHOICE mode~~ ~~-Measurement quantity~~ ~~-Inter-frequency reporting criteria~~ -Filter coefficient (10.3.7.9) -CHOICE mode -Measurement quantity for frequency quality estimate -Inter-frequency reporting quantity (10.3.7.21) -UTRA Carrier RSSI -Frequency quality estimate -Non frequency related cell reporting quantities (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	Inter-frequency measurement Not Present 0 FDD Not Present Same frequency as "Channel2" in Table 8.6.2.1.3 Not Present Not Present TRUE FDD Set to Primary scrambling code of Cell2~~3~~ Set to Primary CPICH Tx Power of Cell2~~3~~ described in Table 8.6.2.1.3 FALSE ~~Set to Cell Selection and Re-selection info of Cell3~~ Not Present Inter-frequency reporting criteria ~~0~~ ~~FDD~~ ~~CPICH_Ec/N0~~ 0 FDD CPICH_Ec/N0 FALSE FALSE TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE report criteria	Not Present Not Present Inter-frequency measurement reporting criteria

Information Element/Group name	Value/Remark
-Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event	 1
-Inter-frequency event identity -Threshold used frequency -W used frequency -Hysteresis -Time to trigger -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Parameters required for each non-used frequency -Threshold non used frequency -W non-used frequency	Event 2C Not present Not present 0 dB 0 ms Report all active set cells + cells within monitored set on used frequency 3 -18 dB 1
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present
NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.	

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement:

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 ñ TTI/10msec))mod 256
-Transmission gap pattern sequence configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	UNDEFINED
-TGPL1	12
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	B
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present

-Downlink information per radio link list	
- Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

These messages are common for all inter frequency test cases and are described in Annex I.

8.6.2.2.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95% According to annex F.6.2. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #25 **Tdoc ⌘T1-041832**
Malta, 1st ñ 5th November, 2004

CR-Form-v7

CHANGE REQUEST

⌘ **34.121**	**CR 453**	⌘**rev**	**-** ⌘	Current version:	**5.5.0** ⌘

For ***HELP*** *on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects:	UICC apps⌘ [ ]	ME [X]	Radio Access Network [ ]	Core Network [ ]

Title:	⌘	Measurement Channel for BLER measurement in 8.3.1 FDD/FDD Soft Handover.		
Source:	⌘	Rohde & Schwarz		
Work item code:	⌘		***Date:*** ⌘	2/11/2004
Category:	⌘	**F**	***Release:*** ⌘	R5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Downlink BLER measurement cannot be done accurately with the standard Reference Measurement Channels.
Summary of change:	⌘	Changed reference to the DCH transport channels in table 8.3.1.1.1 to indicate Auxiliary measurement channels rather than Reference measurement channels. Added loopback command in procedure step 3
Consequences if not approved:	⌘	UE downlink BLER measurement will not be measured accurately if the current DCH configuration is used.

Clauses affected:	⌘	8.3.1				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This is a re-submission of T1-041363r1				

8.3 UTRAN Connected Mode Mobility

8.3.1 FDD/FDD Soft Handover

8.3.1.1 Definition and applicability

The active set update delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying soft handover to the switch off of the old downlink DPCH.

The requirements and this test apply to the FDD UE.

8.3.1.2 Minimum requirement

The active set update delay is defined as the time from when the UE has received the ACTIVE SET UPDATE message from UTRAN, or at the time stated through the activation time when to perform the active set update, to the time when the UE successfully uses the set of radio links stated in that message for power control.

The active set update delay is depending on the number of known cells referred to in the ACTIVE SET UPDATE message. A cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set.
- the cell has been measured by the UE during the last 5 seconds and the SFN of the cell has been decoded by the UE.

And the phase reference is the primary CPICH.

The active set update delay shall be less than 50+10*KC+100*OC ms, where

KC is the number of known cells in the active set update message.

OC is the number of cells that are not known in the active set update message.

If the UE have radio links in the active set that it can not use for data detection (due to low signal level), the UE shall at least every 150 ms search for the radio link.

The normative reference for this requirement is TS 25.133 [2] clauses 5.1.2 and A.5.1.1. The active set update delay shall be less than 60 ms in CELL_DCH state when using test parameters as given in table 8.3.1.1.1.

8.3.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.1.4 Method of test

8.3.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1.1.1 and 8.3.1.1.2 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A shall be used, and that CPICH Ec/Io and SFN-CFN observed time difference shall be reported together with Event 1A. The test consists of six successive time periods, with a time duration of T1, T2, T3, T4, T5 and T6 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

Table 8.3.1.1.1: General test parameters for Soft handover

Parameter		Unit	Value	Comment
DCH parameters			DL~~ and UL~~ Reference Measurement Channel 12.2 kbps and UL Auxiliary Measurement Channel 12.2 kbps	DL Measurement Channel ~~A~~as specified in clause C.3.1~~ and C.2.1~~ UL Auxiliary Measurement Channel as specified in clause C.6.3
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range		dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting deactivation threshold			0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	5	
T2		s	3	
T3		s	0.5	
T4		ms	60	This is the requirement on active set update delay, see clause 8.3.1.2, where KC=1 and OC=0.
T5		s	10	
T6		s	2	

Table 8.3.1.1.2: Cell specific test parameters for Soft handover

Parameter	Unit	Cell 1						Cell 2					
		T1	T2	T3	T4	T5	T6	T1	T2	T3	T4	T5	T6
CPICH_Ec/Ior	dB	-10						-10					
PCCPCH_Ec/Ior	dB	-12						-12					
SCH_Ec/Ior	dB	-12						-12					
PICH_Ec/Ior	dB	-15						-15					
DPCH_Ec/Ior	dB	Note1	Note1	Note1		N/A	N/A	N/A	N/A	Note3	Note1	Note1	
OCNS_Ec/Ior	dB	Note2	Note2	Note2		-0.94	-0.94	-0.94	-0.94	Note2	Note2	Note2	
$\hat{I}_{or}/I_{oc}$	dB	0	2.91	2.91		2.91	2.91	-Inf	2.91	2.91	2.91	2.91	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-13	-14	-14		-14	-14	-Inf	-14	-14	-14	-14	
Propagation Condition		AWGN											
Relative delay of paths received from cell 2 with respect to cell 1	chips	{-148 Ö 148} Note 4											

Note 1: The DPCH level is controlled by the power control loop
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}
Note 3: The DPCH level is controlled by the power control loop. The initial power shall be set equal to the DPCH_Ec/Ior of Cell 1 at the end of T2.
Note 4: The relative delay of the path from cell 2 with respect to cell 1 shall always be within ±148 chip.

8.3.1.4.2 Procedure

1) The RF parameters are set up according to T1 in table 8.3.1.1.3 .

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 without Compressed mode parameters and test loop mode 2 is used. See TS 34.109 [4] for details regarding loopback test.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) 5 seconds after step4 has completed, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1A containing the CFN-SFN observed time difference between cell 1 and cell 2.

7) At the beginning of T3 the downlink DPCH of cell 2 shall be activated.

8) SS shall send an ACTIVE SET UPDATE message with activation time "now ", adding cell 2 to the active set. The ACTIVE SET UPDATE message shall be sent to the UE so that the whole message is available at the UE at the beginning of T4.

9) At the beginning of T5 the DPCH from cell 1 shall be switched off.

10) The UE downlink BLER shall be measured during time period T6.

11) 5 seconds after step10 has completed, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

12) BLER is measured during concatenated time periods T6.Repeat step 1-11 until the confidence level for BLER is achieved. This is defined in annex F.6.1.10

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity (10.3.7.41)	Intra-frequency measurement Not Present 0 FDD CPICH_Ec/N0
-Reporting quantities for active set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE report criteria -Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event	Not Present Not Present Intra-frequency measurement reporting criteria 2
-Intra-frequency event identity -Triggering condition 2 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status	Event 1A Active set cells and monitored set cells 3 dB Not Present 1.0 0 dB Not Present 0 Not Present 0 ms Infinity 0 ms (Note 2) Not Present
-Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis	Event 1B Active set cells and monitored set cells 3 dB Not Present 1.0 0 dB

Information Element/Group name	Value/Remark
-Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status	Not Present Not Present Not Present 0 ms Not Present Not Present Not Present
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present
Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL. Note 2: Reporting interval = 0 ms means no periodical reporting	

ACTIVE SET UPDATE message (step 8):

Information Element/Group name	Type and reference	Value/Remark
Message Type	Message Type	
UE information elements		
RRC transaction identifier	RRC transaction identifier 10.3.3.36	0
Integrity check info message authentication code RRC message sequence number	Integrity check info 10.3.3.16	 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Integrity protection mode info	Integrity protection mode info 10.3.3.19	Not Present
Ciphering mode info	Ciphering mode info 10.3.3.5	Not Present
Activation time	Activation time 10.3.3.1	"now".
New U-RNTI	U-RNTI 10.3.3.47	Not Present
CN information elements		
CN Information info	CN Information info 10.3.1.3	Not Present
Phy CH information elements		
Uplink radio resources		
Maximum allowed UL TX power	Maximum allowed UL TX power 10.3.6.39	33 dBm
Downlink radio resources		
Radio link addition information		Radio link addition information required for each RL to add
>Radio link addition information	Radio link addition information 10.3.6.68	
Radio link removal information		Radio link removal information required for each RL to remove
>Radio link removal information	Radio link removal information 10.3.6.69	Not Present
TX Diversity Mode	TX Diversity Mode 10.3.6.86	None
SSDT information	SSDT information 10.3.6.77	Not Present

Radio link addition information

Information Element/Group name	Need	Multi	Type and reference	Value/Remark
Primary CPICH info	MP		Primary CPICH info 10.3.6.60	Same as defined in cell2
Downlink DPCH info for each RL	MP		Downlink DPCH info	See below

Information Element/Group name	Need	Multi	Type and reference	Value/Remark
			for each RL 10.3.6.21	
TFCI combining indicator	MP		TFCI combining indicator 10.3.6.81	FALSE
SCCPCH Information for FACH	OP		SCCPCH Information for FACH 10.3.6.70	Not Present

Downlink DPCH info for each RL

Information Element/Group name	Type and reference	Value/Remark
CHOICE *mode*		
>FDD		
>>Primary CPICH usage for channel estimation	Primary CPICH usage for channel estimation 10.3.6.62	Primary CPICH may be used
>>DPCH frame offset	Integer(0..38144 by step of 256)	This should be reflected by the IE" Cell synchronisation information" in received MEASUREMENT REPORT message
>>Secondary CPICH info	Secondary CPICH info 10.3.6.73	Not Present
>>DL channelisation code		
>>>Secondary scrambling code	Secondary scrambling code 10.3.6.74	Not Present
>>>Spreading factor	Integer(4, 8, 16, 32, 64, 128, 256, 512)	128
>>>Code number	Integer(0..Spreading factor - 1)	96
>>>Scrambling code change	Enumerated (code change, no code change)	No code change
>>TPC combination index	TPC combination index 10.3.6.85	0
>>SSDT Cell Identity	SSDT Cell Identity 10.3.6.76	Not Present
>>Closed loop timing adjustment mode	Integer(1, 2)	Not Present

8.3.1.5 Test requirements

Table 8.3.1.1.3: Cell specific test parameters for Soft handover

Parameter	Unit	Cell 1						Cell 2					
		T1	**T2**	**T3**	**T4**	**T5**	**T6**	**T1**	**T2**	**T3**	**T4**	**T5**	**T6**
CPICH_Ec/Ior	dB	-9.3						-9.3					
PCCPCH_Ec/Ior	dB	-11.3						-11.3					
SCH_Ec/Ior	dB	-11.3						-11.3					
PICH_Ec/Ior	dB	-14.3						-14.3					
DPCH_Ec/Ior	dB	Note1	Note1	Note1		N/A	N/A	N/A	N/A	Note3	Note1	Note1	
OCNS		Note2	Note2	Note2		-1.13	-1.13	-1.13	-1.13	Note2	Note2	Note2	
$\hat{I}_{or}/I_{oc}$	dB	0	2.91	2.91		2.91	2.91	-Inf	2.91	2.91	2.91	2.91	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-12.3	-13.3	-13.3		-13.3	-13.3	-Inf	-13.3	-13.3	-13.3	-13.3	
Propagation Condition		AWGN											
Relative delay of paths received from cell 2 with respect to cell 1	chips	{-147.5 Ö 147.5} Note 4											

Note 1: The DPCH level is controlled by the power control loop
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}
Note 3: The DPCH level is controlled by the power control loop. The initial power shall be set equal to the DPCH_Ec/Ior of Cell 1 at the end of T2.
Note 4: The relative delay of the path from cell 2 with respect to cell 1 shall always be within ñ147.5 Ö 147.5 chip.

The average measured quality on the DTCH of the UE downlink during T6 shall be BLER =0.01±30%. (The final BLER shall be achieved by integrating over a number of repetitions of procedure step 10).

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #25 **Tdoc ⌘ T1-041852**
St Paul's Bay, Malta, 1st - 5th November 2004

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	460	⌘ **rev**	**-**	⌘	Current version:	**5.5.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Corrections to HSDPA test 9.3 (CQI reporting)
Source:	⌘	Agilent Technoliges, Ericsson
Work item code:	⌘	TEI
Date:	⌘	4/11/2004
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(addition of feature),*
- ***C*** *(functional modification of feature)*
- ***D*** *(editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
- *2 (GSM Phase 2)*
- *R96 (Release 1996)*
- *R97 (Release 1997)*
- *R98 (Release 1998)*
- *R99 (Release 1999)*
- *Rel-4 (Release 4)*
- *Rel-5 (Release 5)*
- *Rel-6 (Release 6)*

Reason for change: ⌘ Clarification of the text and correction of several incorrect references

Summary of change: ⌘

a) Clarified the test purpose 9.3.1.3
b) Corrected the connection diagram to use for CQI in AWGN from A.10 to A.16.
c) Corrected the connection diagram to use for CQI in fading from A.10 to A.17.
d) Added missing reference to E.5.1 in 9.3.1.4.2 procedure
e) Added units to [2000] in 9.3.1.4.2 procedure step 3
f) Added in 9.3.2.4.2 step 4 criteria for determining Median CQI when the distribution falls exactly across two values. Opted for the lower value since it is probably easier to exceed 10% at CQI + 2 than it is to drop below 10% with CQI-1.
g) Multiple clarifications to 9.3.1.4.2 procedure step 6, 7 and step 8
h) Added ìstatî to DTX in various places in 9.3.
i) Modified step 7 of the procedure 9.3.1.4.2 from > 0.1 to ≥ 0.1
j) Clarified the test purpose 9.3.2.3
k) Corrected connection diagram from A.10 to A.16 in 9.3.2.4.1
l) Added missing reference to E.5.1 in 9.3.2.4.2 procedure
m) Added in 9.3.2.4.2 step 4 criteria for determining Median CQI when the distribution falls exactly across two values. Opted for the lower value since this favours passing the UE.
n) Corrected ì<î in step 6 of the procedure 9.3.2.4.2 to ì≤î
o) Clarified the BLER calculation in step 6 of the procedure 9.3.2.4.2

Merged changes from T1-041695:
1. Section 9.3.1.2 (Minimum requirement): It is clarified that current requirement

		in Rel-5 is only applicable to UE capability categories 1-6 and 11,12. 2. Test procedure a. Step 1): reference to tables 9.3.2.1 and 9.3.2.3 changed to refer to new merged table 9.3.1.1. b. Step 9): The SS should repeat test 2 and test 3 independent of UE capability category. 3. Editorial changes to test requirement
Consequences if not approved:	⌘	The test conditions will not be correct and the test may fail a good UE.

Clauses affected:	⌘	9.3				
		Y	**N**			
Other specs Affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

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Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

9.3 Reporting of Channel Quality Indicator

9.3.1 AWGN Propagation Conditions

9.3.1.1 Definition and applicability

The reporting accuracy of channel quality indicator (CQI) under AWGN environments is determined by the reporting variance and the BLER performance using the transport format indicated by the reported CQI median.

The UE shall be tested only according to the data rate, supported. The data-rate-corresponding requirements shall apply to the UE.

The requirements and this test apply to all types of UTRA for the FDD UE for Release 5 and later releases that support HSDPA.

9.3.1.2 Minimum requirements

For UE capability categories 1-6 and 11, 12:

For the parameters specified in Table 9.3.1.1 and 9.3.1.2, the the reported CQI value shall be in the range of +/-2 of the reported median more than 90% of the time. If the HS-PDSCH BLER using transport format indicated by median CQI is less than 0.1, BLER using transport format indicated by (median CQI +2) shall be larger than 0.1. If the HS-PDSCH BLER using transport format indicated by median CQI is larger than 0.1, BLER using transport format indicated by (median CQI -1) shall be less than 0.1.

Table 9.3.1.1: Test Parameter for CQI: categories 1-6

Parameter	Unit	Test 1	Test 2	Test 3
$\hat{I}_{or}/I_{oc}$	dB	0	5	10
I_{oc}	dBm/3.84 MHz	-60		
Phase reference	-	P-CPICH		
HS-PDSCH E_c/I_{or} (*)	dB	-3		
HS-SCCH_1 E_c/I_{or}	dB	-10		
DPCH E_c/I_{or}	dB	-10		
Maximum number of H-ARQ transmission	-	1		
Number of HS-SCCH set to be monitored	-	1		
CQI feedback cycle	ms	2		
CQI repetition factor	-	1		
HS-DSCH transmission pattern	-	ìXOOXOOXî to incorporate inter-TTI=3 UEs, where ìXî indicates TTI in which HS-PDSCH is allocated to the UE, and ìOî indicates TTI, in which HS-PDSCH is not allocated to the UE.		
Note1: Measurement power offset ìΓî is configured by RRC accordingly and as defined in [8]. Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI, median CQI -1, median CQI+2 are used. Other physical channel parameters are configured according to the CQI mapping table described in TS25.214				

Table 9.3.1.2: Test Parameter for CQI: categories 11,12

Parameter	Unit	Test 1	Test 2	Test 3
$\hat{I}_{or}/I_{oc}$	dB	0	5	10
I_{oc}	dBm/3.84 MHz	-60		
Phase reference	-	P-CPICH		
HS-PDSCH E_c/I_{or} (*)	dB	-3		
HS-SCCH_1 E_c/I_{or}	dB	-10		
DPCH E_c/I_{or}	dB	-10		
Maximum number of H-ARQ transmission	-	1		
Number of HS-SCCH set to be monitored	-	1		
CQI feedback cycle	ms	2		
CQI repetition factor	-	1		
HS-DSCH transmission pattern	-	ìXOOXOOXî, where ìXî indicates TTI in which HS-PDSCH is allocated to the UE, and ìOî indicates TTI, in which HS-PDSCH is not allocated to the UE.		
Note1: Measurement power offset ìΓî is configured by RRC accordingly and as defined in [8]. Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI, median CQI -1, median CQI+2 are used. Other physical channel parameters are configured according to the CQI mapping table described in TS25.214				

The reference for this requirement is TS 25.101 [1] clauses 9.3.1.1 and 9.3.1.2.

For UE capability categories 7-10:

FFS

9.3.1.3 Test purpose

~~To verify the UE receiver is capable of reporting the channel quality indicator (CQI) under AWGN by the reporting variance and the BLER performance using the transport format indicated by the reported CQI median such that CQI reported by the UE falls within the acceptable range.~~To verify that the variance of the CQI reports when using TF based on CQI 16 is within the limits defined and that a BLER of 10% falls between the TF based on Median CQI-1 and the TF based on Median CQI TF or between the TF based on Median CQI and the TF based on Median CQI+2.

9.3.1.4 Method of test

9.3.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1. Connect SS and an AWGN noise source to the UE antenna connector as shown in figure A.16~~0~~.
2. Set Ack/Nack handling at the SS such that regardless of the response from the UE (Ack, Nack or DTX) new data is sent each time, this is because HARQ transmissions are set to one, i.e. no re-transmission of failed blocks.

9.3.1.4.2 Procedure

1) Set up an HSDPA call according to TS 34.108 [3] clause 7.3.6.3. Set test conditions according to test 1 according table 9.3.1.1~~9.3.2.1~~ (Category 1-6) or 9.3.1.2~~9.3.2.3~~ (Category 11,12).

2) Set test conditions according to test 1 according table 9.3.1.1. The configuration of the downlink channels is defined in table E.5.1.

Note: the following part of the procedure will test, if the UE reports a limited range of CQI values under the predefined channel conditions.

3) The SS shall send TF according to CQI value 16~~[16]~~ and keep it regardless of the CQI value~~,~~ sent by the UE. For any HSDPA block~~,~~ transmitted by the SS, record the received CQI value. Continue transmission of the HS-PDSCH and CQI collection ~~up to~~ until [2000] reports have been gathered.

4) Set up a relative frequency distribution for the CQI-values, reported. Calculate the median value (Median CQI is the CQI that is at or crosses 50% distribution from the lower CQI side). This CQI-value is declared as Median CQI value,

5) If [1800] or more of the CQI values are in the range (Median CQI - 2) ≤ Median CQI ≤ (Median CQI + 2) then continue with step 6)~~(7)~~, otherwise fail the UE.

Note: the following part of the procedure will test, if BLER versus CQI has the correct sense.

6) The SS shall transmit the TF according to the median-CQI value and shall not react on the UEís CQI ~~value~~reports. For any HSDPA block, transmitted by the SS, record ACK, NACK ~~or~~ and statDTX

~~Upon a transmission:~~
~~ACK received → record a success,~~
~~NACK received → record a fail~~
~~DTX received → record a fail~~

~~Continue transmission and ACK, NACK and DTX collection~~ up to [1000] times

If the ratio (~~No of fails~~ NACK + statDTX / ACK + NACK + statDTX~~No of fails + successes~~) < 0.1 then goto step 7)~~(7)~~, otherwise goto step 8)~~(8)~~

7) The SS shall transmit the TF according to the median-CQI+2 value and shall not react on the UEís CQI~~-~~ reports~~value~~. For any HSDPA block, transmitted by the SS, record ACK, NACK or statDTX

~~Upon a transmission:~~

~~ACK received → record a success,~~
~~NACK received → record a fail~~
~~DTX received → record a fail~~

~~Continue transmission and ACK, NACK and DTX collection~~ up to [1000] times

If the ratio (~~No of fails~~ NACK + statDTX~~-~~ / ACK + NACK + statDTX ~~No of fails + successes~~) ~~>~~≥ 0.1

then pass the UE, otherwise fail the UE

8) The SS shall transmit the TF according to the median-CQI-1 value and shall not react on the UEís CQI value. For any HSDPA block, transmitted by the SS, record ACK, NACK ~~or~~ statDTX

~~Upon a transmission:~~
~~ACK received → record a success,~~
~~NACK received → record a fail~~
~~DTX received → record a fail~~

~~Continue transmission and ACK, NACK and DTX collection~~ up to [1000] times

If the ratio (~~No of fails~~ NACK + statDTX~~-~~ / ACK + NACK + statDTX ~~No of fails + successes~~) < 0.1

then pass the UE, otherwise fail the UE.

Note: The statistical selectivity based on [1000] samples is not sufficient to distinguish between BLER < 0.1 and > 0.1. However, it is assumed that the ~~following~~ difference~~s~~ between

[true BLER on Median CQI~~—~~ - ~~—~~true BLER on (Median CQI + 2)] and [true BLER on Median CQI~~—~~ - ~~—~~true BLER on (Median CQI - 1)]

~~are~~ is large enough to exceed the statistical uncertainty and hence the measurement can indicate the correct sense of BLER.

9) Repeat the same procedure (steps 3 to 8) with test conditions according to the table 9.3.1.1 and table 9.3.1.2 for Test 2 and Test 3.~~the other tests:~~

~~Category 1-6: Test 2 and Test 3~~

~~Category 11,12: Test 1 and Test 2~~

9.3.1.5 Test Requirements

The pass fail decision as specified ~~is already described~~ in the test procedure in 9.3.1.4.2.

No ~~setting~~ test tolerance~~s~~ ~~are~~ is applied to the test parameters.

9.3.2 Fading Propagation Conditions

9.3.2.1 Definition and applicability

The reporting accuracy of the channel quality indicator (CQI) under fading environments is determined by the BLER performance using the transport format indicated by the reported CQI median.

In calculating BLER~~,~~ for an HARQ process, if an odd number of consecutive statDTXs are reported, the corresponding packets and one subsequent packet shall be discarded from BLER calculation. If an even number of consecutive statDTXs are reported, only the corresponding packets shall be discarded from BLER calculation.

The requirements and the test case apply to all types of UTRA for the FDD UE that supports HSDPA.

9.3.2.2 Minimum requirements

For the parameters specified in Table 9.3.2.1, the requirements are specified in terms of maximum BLERs at particular reported CQIs when transmitting a fixed transport format given by the CQI median as shown in Table 9.3.2.2.. The BLER at a particular reported CQI is obtained by associating a particular CQI reference measurement period with HS-PDSCH subframe overlapping with the end of this CQI reference measurement period and calculating the fraction of erroneous HS-PDSCH subframes.

Table 9.3.2.1: Test Parameters for CQI test in fading: categories 1-6

Parameter	Unit	Test 1	Test 2
HS-PDSCH E_c/I_{or} (*)	dB	-8	-4
$\hat{I}_{or}/I_{oc}$	dB	0	5
I_{oc}	dBm/3.84 MHz	-60	
Phase reference	-	P-CPICH	
HS-SCCH_1 E_c/I_{or}	dB	-8.5	
DPCH E_c/I_{or}	dB	-6	
Maximum number of H-ARQ transmission	-	1	
Number of HS-SCCH set to be monitored	-	1	
CQI feedback cycle	ms	2	
CQI repetition factor	-	1	
HS-DSCH transmission pattern	-	ìÖ .XOOXOOXÖ .î to incorporate inter-TTI=3 UEs, where ìXî indicates TTI in which HS-PDSCH is allocated to the UE, and ìOî indicates TTI in which HS-PDSCH is not allocated to the UE.	
Propagation Channel		Case 8	
Note1: Measurement power offset ìΓî is configured by RRC accordingly and as defined in [7] Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI is used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214			

Table 9.3.2.2: Minimum requirement for CQI test in fading for categories 1-6

Reported CQI	Maximum BLER	
	Test 1	Test2
CQI median	60%	60%
CQI median + 3	15%	15%

For the parameters specified in Table 9.3.2.3, the requirements are specified in terms of BLERs at particular reported CQIs when a fixed transport format given by CQI median as shown in Table 9.3.2.4. The BLER at a particular reported CQI is obtained by associating a particular CQI reference measurement period with the HS-PDSCH subframe overlapping with the end of this CQI reference measurement period and calculating the fraction of erroneous HS-PDSCH subframes.

Table 9.3.2.3: Test Parameters for CQI test in fading: categories 11-12

Parameter	Unit	Test 1	Test 2
HS-PDSCH E_c / I_{or} (*)	dB	-8	-4
$\hat{I}_{or} / I_{oc}$	dB	0	5
I_{OC}	dBm/3.84 MHz	-60	
Phase reference	-	P-CPICH	
HS-SCCH_1 E_c / I_{or}	dB	-8.5	
DPCH E_c / I_{or}	dB	-6	
Maximum number of H-ARQ transmission	-	1	
Number of HS-SCCH set to be monitored	-	1	
CQI feedback cycle	ms	2	
CQI repetition factor	-	1	
HS-DSCH transmission pattern	-	ìÖ .XOOXOOXÖ .î to incorporate inter-TTI=3 UEs, where ìXî indicates TTI in which HS-PDSCH is allocated to the UE, and ìOî indicates DTX	
Propagation Channel		Case 8	
Note1: Measurement power offset ìΓî is configured by RRC accordingly and as defined in [7] Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI is used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214			

Table 9.3.2.4: Minimum requirement for CQI test in fading for categories 11-12

Reported CQI	Maximum BLER	
	Test 1	Test 2
CQI median	60%	60%
CQI median + 3	15%	15%

The reference for this requirement is TS 25.101 [1] clauses 9.3.2.1 and 9.3.2.2.

9.3.2.3 Test purpose

~~To verify that the UE receiver is capable of reporting the channel quality indicator (CQI) under fading propagation conditions. When using the transport format indicated by the reported CQI median BLER shall meet the test requirements specified in tables 9.3.2.2 and 9.3.2.4.~~ To verify that when using the TF based on the Median CQI that the BLER for blocks associated with CQI reports of Median CQI is ≤ 60% and that the BLER for blocks associated with CQI reports of Median CQI+3 is ≤ 15%.

9.3.2.4 Method of test

9.3.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect SS, multipath fading simulator and an AWGN noise source to the UE antenna connector as shown in figure A.16~~0~~.

2) Set Ack/Nack handling at the SS such that regardless of the response from the UE (Ack, Nack or DTX) new data is sent each time, this is because HARQ transmissions are set to one, i.e. no re-transmission of failed blocks.

9.3.2.4.2 Procedure

1) Set up an HSDPA call according to TS 34.108 [3] clause 7.3.6.3. Set test conditions according to test 1 according table 9.3.2.1 (Category 1-6) or 9.3.2.3 (Category 11,12). The configuration of the downlink channels is defined in table E.5.1.

2) For an HSDPA block, transmitted by the SS, record the equivalent CQI value. SS shall not react ~~on~~to the UEís reported CQI value, but only record the reported CQI value.

3) Repeat step 2 up to [2000] times.

4) Set up a relative frequency distribution for the reported CQI ~~-~~values~~, reported~~. Calculate the median value (Median CQI is the CQI that is at or crosses 50% distribution from the lower CQI side). This CQI-value is declared as Median CQI value,

5) The SS shall transmit the TF according to the median-CQI value and shall not react ~~on~~ tothe UEís reported CQI value.

6) Measure BLER as described below. Continue measuring BLER until [1000] events (ACK or NACK discarded DTXs not included) has occurred for each R1 and R2.

In the test there are two BLER requirements to be tested:

R1: HSDPA block with corresponding reported CQI = Median CQI BLER ~~<~~≤ 60%

R2: HSDPA block with corresponding reported CQI = Median CQI + 3 BLER ~~<~~≤ 15%

For any HSDPA block, transmitted by the SS, record ~~ACK/NACK value (~~ACK, NACK or statDTX~~)~~ and the corresponding CQI report. These values are combined to obtain the BLER (Figure 9.3.2.1).

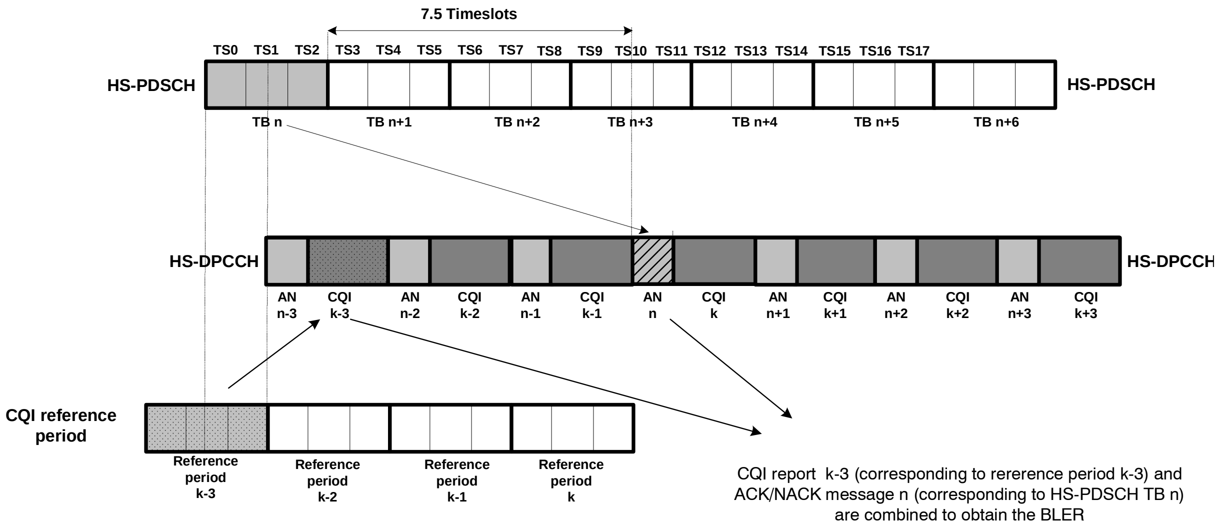

Figure 9.3.2.1 Combination of ACK/NACK message and the CQI report for BLER calculation

~~Upon a transmission:~~

~~CQI with ACK received → record a success,~~

~~CQI with NACK received → record a fail~~ For each set of events R1 and R2 the BLER = (NACK + statDTX) / (ACK + NACK + statDTX)

In calculating BLER, for an HARQ process, if an odd number of consecutive DTXs are reported, the corresponding packets and one subsequent packet shall be discarded from BLER calculation. If an even number of consecutive DTXs are reported, only the corresponding packets shall be discarded from BLER calculation

Repeat the same procedure with test conditions according to the table 9.3.2.1 and table 9.3.2.3 for the other tests:

Category 1-6: Test 2 of table 9.3.2.1

Category 11,12: Test 2 of table 9.3.2.3

9.3.2.5 Test Requirements

The measured BLER shall not exceed values specified in tables 9.3.2.2 and 9.3.2.4.

No ~~setting~~ test tolerance is applied to the test parameters.

3GPP TSG-T1 Meeting #25
St Paul's Bay, Malta, 1st - 5th November 2004

Tdoc ⌘ T1-041865

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	465	⌘ **rev**	**-**	⌘	Current version:	**5.5.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Addition of test tolerances and corrections for 8.6.2.1 Correct reporting of neighbours in AWGN propagation condition (34.121)		
Source:	⌘	Motorola, Agilent, Racal Instruments Wireless Solutions		
Work item code:	⌘	TEI	***Date:*** ⌘	04/11/2004
Category:	⌘	**F**	***Release:*** ⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	This change is to modify the test requirements for the effects of test system uncertainties.
Summary of change:	⌘	a) Test tolerances are added b) Revision of Annex F.1.5 table F.1.5 to define Test System Uncertainty c) Revision of Annex F.2 table F.2.4 to define Test Tolerances d) Revision of Annex F.4 table F4.4 to refer to derivation of test requirements
Consequences if not approved:	⌘	The test implementation will not match the requirements of 25.133 and may fail a good UE.

Clauses affected:	⌘	8.6.2.1, Annex F				
		Y	**N**			
Other specs Affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR is applicable for UEís supporting Rel-99 only.				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6.2.1 Correct reporting of neighbours in AWGN propagation condition (R99)

8.6.2.1.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit the measurement report over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to ~~the~~ Release 99 FDD UE only.

8.6.2.1.2 Minimum requirements

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify inter}} = Max\left\{5000, T_{\text{basic identify FDD,inter}} \cdot \frac{T_{\text{Measurement Period, Inter}}}{T_{\text{Inter}}} \cdot N_{Freq}\right\} ms$$

A cell shall be considered detectable when CPICH Ec/Io $\geq$ -20 dB, SCH_Ec/Io $\geq$ -17 dB for at least one channel tap and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

When transmission gaps are scheduled for FDD inter frequency measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.1 and 9.1.2 of 25.133 with measurement period given by

$$T_{\text{measurement inter}} = Max\left\{T_{\text{Measurement\_Period Inter}}, T_{\text{basic measurement FDD inter}} \cdot \frac{T_{\text{Measurement\_Period Inter}}}{T_{\text{Inter}}} \cdot N_{Freq}\right\} ms$$

If the UE does not need compressed mode to perform inter-frequency measurements, the measurement period for inter frequency measurements is 480 ms.

The UE shall be capable of performing CPICH measurements for $X_{\text{basic measurement FDD inter}}$ inter-frequency cells per FDD frequency of the monitored set or the virtual active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $T_{\text{Measurement\_ Inter}}$.

> $X_{\text{basic measurement FDDinter}} = 6$
>
> $T_{\text{Measurement\_Period Inter}}$ = 480 ms. The period used for calculating the measurement period $T_{\text{measurement\_inter}}$ for inter frequency CPICH measurements.
>
> T_{Inter}: This is the minimum time that is available for inter frequency measurements , during the period $T_{\text{Measurement\_Period inter}}$ with an arbitrarily chosen timing. The minimum time per transmission gap is calculated by using the actual idle length within the transmission gap as given in the table 11 of Annex B in TS 25.212 and by assuming 2*0.5 ms for implementation margin and after that taking only full slots into account in the calculation.
>
> $T_{\text{basic\_identify\_FDD,inter}}$ = 800 ms. This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.
>
> $T_{\text{basic\_measurement\_FDD inter}}$ = 50 ms. This is the time period used in the equation for defining the measurement period for inter frequency CPICH measurements.
>
> N_{Freq}: Number of FDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{\text{identify inter}}$ defined in Clause 8.1.2.3.1 of 25.133 When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{\text{identify\_inter}}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{\text{Measurement\_Period Inter}}$ provided the timing to that cell has not changed more than +/-32 chips while transmission gap has not been available and the L3 filter has not been used.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.3 and A.8.2.1.

8.6.2.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.2.1.4 Method of test

8.6.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The initial test parameters are given in table 8.6.2.1.1

Table 8.6.2.1.1: Cell specific initial test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	**T0**	**T0**
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	0	-Inf	-Inf
$\hat{I}_{or}$ *(Note 1)*	dBm	-70	-Inf	-Inf
I_{oc}	dBm/3.84 MHz	-70		
CPICH_Ec/Io	dB	-13	-Inf	-Inf
Propagation Condition	AWGN			
Note 1: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.				

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables 8.6.2.1.2 and 8.6.2.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

Table 8.6.2.1.2: General test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Compressed mode		C.5.2 set 1	As specified in C.5.
Active cell		Cell 1	
Threshold non used frequency	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range	dB	4	Applicable for event 1A
Hysteresis	dB	0	
W		1	Applicable for event 1A
W non-used frequency		1	Applicable for event 2C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1 16 on channel 2	NOTE: See Annex I for cell information.The information is sent before the compressed mode pattern starts.
T1	s	10	
T2	s	5	

Table 8.6.2.1.3: Cell Specific parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-17		N/A		N/A	
OCNS_Ec/Ior	dB	-1.049		ñ0.941		ñ0.941	
$\hat{I}_{or}/I_{oc}$	dB	0	5.42	-Infinity	3.92	-1.8	-1.8
$\hat{I}_{or}$ *(Note 1)*	dBm	-70	-64.58	-Infinity	-66.08	-71.80	-71.80
I_{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/Io	dB	-13	-13	-Infinity	-14.5	-14	-14
Propagation Condition		AWGN					
Note 1: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.							

8.6.2.1.4.2 Procedure

1) The ~~RF~~ parameters are set up according to ~~T0~~table 8.6.2.1.2 and table 8.6.2.1.4.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
4) SS shall transmit a MEASUREMENT CONTROL message (inter frequency).
5) SS shall transmit a MEASUREMENT CONTROL message (intra frequency).
6) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

7) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

8) 5 seconds after step7 has completed, the SS shall switch the power settings from T0 to T1 according to the parameters defined in table 8.6.2.1.5.

9) UE shall transmit a MEASUREMENT REPORT message (inter frequency) triggered by event 2C. The measurement reporting delay from the beginning of T1 shall be less than 9.08 seconds. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

10) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 according to the parameters defined in table 8.6.2.1.5.

11) UE shall transmit a MEASUREMENT REPORT message (intra frequency) triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 1040 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

12) After 5 seconds from the beginning of T2, the UE is switched off.

13) Repeat steps 1-12 until the confidence level according to annex F.6.2 is achieved.

NOTE: The measurement reporting delay is 956.2 ms plus 80 ms delay uncertainty (twice the TTI). This gives a total of 1036.2 ms and rounded off to 1040 ms.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement:

Information Element	Value/Remark
Message Type	
UE Information Elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number -Integrity protection mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. Not Present Not Present Not Present Not Present Not Present CELL_DCH Not Present
CN Information Elements -CN Information info	 Not Present
UTRAN mobility information elements -URA identity	 Not Present
RB information elements -Downlink counter synchronisation info	 Not Present
PhyCH information elements -Frequency info	 Not Present
Uplink radio resources -Maximum allowed UL TX power	 Not Present
Downlink radio resources -CHOICE mode -Downlink PDSCH information -Downlink information common for all radio links -Downlink DPCH info common for all RL -CHOICE mode -DPCH compressed mode info -Transmission gap pattern sequence -TGPSI -TGPS Status Flag -TGCFN -Transmission gap pattern sequence configuration parameters -TGMP -TGPRC -TGSN -TGL1 -TGL2 -TGD -TGPL1 -TGPL2 -RPP -ITP -CHOICE UL/DL mode -Downlink compressed mode method -Uplink compressed mode method -Downlink frame type -DeltaSIR1 -DeltaSIRafter1 -DeltaSIR2 -DeltaSIRafter2 -N Identify abort -T Reconfirm abort -TX Diversity Mode -SSDT information -Default DPCH Offset Value	 FDD Not Present Not Present FDD 1 Activate (Current CFN + (256 ñ TTI/10msec))mod 256 FDD measurement Not present 4 7 Not Present UNDEFINED 3 Not Present Mode 0 Mode 0 UL and DL SF/2 SF/2 B 3.0 3.0 Not Present Not Present Not Present Not Present Not Present Not Present Not Present

-Downlink information per radio link list	
- Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT CONTROL message (inter frequency):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
- CHOICE Inter-frequency cell removal	Not Present
- New Inter frequency cells	
- Inter frequency cell id	0
- Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Not Present
- UARFCN downlink(Nd)	Same frequency as "Channel2" in Table 8.6.2.1.~~3~~5
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to Primary scrambling code of Cell3
- Primary CPICH Tx Power	Set to Primary CPICH Tx Power of Cell3 described in Table 8.6.2.1.~~3~~5
- Tx Diversity Indicator	FALSE
- Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-Intra-frequency reporting criteria	
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Inter-frequency reporting criteria	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH_Ec/N0
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1

Information Element/Group name	Value/Remark
-Inter-frequency event identity	Event 2C
-Threshold used frequency	Not present
-W used frequency	Not present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status	
-CHOICE reported cell	Report cells within monitored set on non-used frequency
-Maximum number of reported cells	3
-Parameters required for each non-used frequency	
-Threshold non used frequency	-18 dB
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.	

MEASUREMENT CONTROL message (intra frequency):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0
-message authentication code -RRC message sequence number	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity (10.3.7.41)	Intra-frequency measurement Not Present 0 FDD CPICH_Ec/N0
-Reporting quantities for active set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE report criteria -Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event	Not Present Not Present Intra-frequency measurement reporting criteria 1
-Intra-frequency event identity -Triggering condition 2 -Reporting Range Constant -Cells forbidden to affect Reporting Range -CHOICE mode -Primary CPICH info (10.3.6.60) -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status	Event 1A Monitored set cells 4 dB Not Present FDD 1.0 0 dB Not Present 0 Not Present 0 ms Not Present 0 ms (Note 2) Not Present
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present

Information Element/Group name	Value/Remark
Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL. Note 2: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message for Inter frequency test cases

MEASUREMENT REPORT message for Intra frequency test cases

These messages are common for all inter and intra frequency test cases and are described in Annex I.

8.6.2.1.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

Table 8.6.2.1.4: Test requirements for initial test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-9.2	-9.2	-9.2
PCCPCH_Ec/Ior	dB	-11.2	-11.2	-11.2
SCH_Ec/Ior	dB	-11.2	-11.2	-11.2
PICH_Ec/Ior	dB	-14.2	-14.2	-14.2
DPCH_Ec/Ior	dB	-16.2	N/A	N/A
OCNS_Ec/Ior	dB	-1.30	-1.16	-1.16
$\hat{I}_{or}/I_{oc}$ (Note 1)	dB	0	-Inf	-Inf
$\hat{E}_{or}$	dBm	-70	-Inf	-Inf
I_{oc}	dBm/3.84 MHz	-70		
CPICH_Ec/Io (Note 1)	dB	-12.21	-Inf	-Inf
Propagation Condition		AWGN		
Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters..				

Table 8.6.2.1.5: Test requirements for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-9.2		-9.2		-9.2	
PCCPCH_Ec/Ior	dB	-11.2		-11.2		-11.2	
SCH_Ec/Ior	dB	-11.2		-11.2		-11.2	
PICH_Ec/Ior	dB	-14.2		-14.2		-14.2	
DPCH_Ec/Ior	dB	-16.2		N/A		N/A	
OCNS_Ec/Ior	dB	-1.30		-1.16		-1.16	
$\hat{I}_{or}/I_{oc}$ (Note 1)	dB	0	5.42	-Infinity	3.9	-1.8	-1.8
$\hat{E}_{or}$	dBm	0	-64.6	-Infinity	-66.10	-71.8	-71.8
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/Io (Note 1)	dB	-12.21	-12.20	-Infinity	-13.70	-13.20	-13.20
Propagation Condition		AWGN					
Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters..							

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

F.1.5 Requirements for support of RRM

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD	
8.6.2 FDD inter frequency measurements		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	~~TBD~~Channel 1 d~~D~~uring T0, T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} ±1.0 dB I_{or} (1) ±0.7 dB Channel 1 d~~D~~uring T2: I_{or} (2) relative to I_{or} (1) ±0.3 dB Channel 2 during T0, T1 and T2: I_{oc} ±1.0 dB Channel 2 during T1 and T2: I_{or} (3) ±0.7 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated) d) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2), are uncorrelated to each other. f) The absolute uncertainties for Ior(1) and Ior(3) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). g) The absolute uncertainties for Ioc(1) and Ioc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD	

F.2.4 Requirements for support of RRM

Table F.2.4: Test Tolerances for Radio Resource Management Tests

Clause	Test Tolerance
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD
8.6.2 FDD inter frequency measurements	
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	~~TBD~~ During T0 to T2: +0.80 dB for all Cell 1 Ec/Ior ratios +0.80 dB for all Cell 2 Ec/Ior ratios +0.80 dB for all Cell 3 Ec/Ior ratios
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD

F.4 Derivation of Test Requirements (This clause is informative)

The Test Requirements in the present document have been calculated by relaxing the Minimum Requirements of the core specification using the Test Tolerances defined in clause F.2. When the Test Tolerance is zero, the Test Requirement will be the same as the Minimum Requirement. When the Test Tolerance is non-zero, the Test Requirements will differ from the Minimum Requirements, and the formula used for this relaxation is given in table F.4.

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	~~TBD~~Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].~~TBD~~		
	During T0 to T2: Cell 1, Cell 2 and Cell 3: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Cell 1: DPCH_Ec/Ior = -17 dB	During T0 to T2: +0.80 dB +0.80 dB +0.80 dB +0.80 dB +0.80 dB	During T0 to T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD		

3GPP TSG-T1 Meeting #25 **Tdoc ⌘ T1-041866**
St Paul's Bay, Malta, 1st - 5th November 2004

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	466	⌘ **rev**	**-**	⌘	Current version:	**5.5.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction to Correct reporting of neighbours in fading progagation condition test case
Source:	⌘	Motorola, Aeroflex
Work item code:	⌘	TEI — ***Date:*** ⌘ 04/11/2004
Category:	⌘	**F** — ***Release:*** ⌘ Rel-5

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(addition of feature),*
- ***C*** *(functional modification of feature)*
- ***D*** *(editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
- *2 (GSM Phase 2)*
- *R96 (Release 1996)*
- *R97 (Release 1997)*
- *R98 (Release 1998)*
- *R99 (Release 1999)*
- *Rel-4 (Release 4)*
- *Rel-5 (Release 5)*
- *Rel-6 (Release 6)*

Reason for change:	⌘	This change is to void the R99 test case as it can not be completed due to error in core specification 25.133. The rel-4 and onwards test case is already aligned with 25.133.
Summary of change:	⌘	a) The R99 test case defined in 8.6.1.4 have been voided. b) Defined separate test 8.6.1.4A for Rel-4 and later. c) Revision of Annex F.1.5 table F.1.5 to define Test System Uncertainty d) Reviswion of Annex F.2 table F.2.4 to define Test Tolerances e) Revision of Annex F.4 table F4.4 to refer to derivation of test requirements
Consequences if not approved:	⌘	The test implementation will not match the requirements of 25.133 and may fail a good UE.

Clauses affected:	⌘	8.6.1.4, Annext F, new clause 8.6.1.4A			
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This CR is applicable for UEís supporting Rel-99 or later. The R99 test case have been voided since it can not be completed due to an error in core specification 25.133. The Rel-4 and later test is already aligned with 25.133.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6.1.4 Correct reporting of neighbours in fading propagation condition (R99)

8.6.1.4.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the Release 99 FDD UE.

8.6.1.4.2 Minimum requirements

[Editor's Note: The minimum requirements defined in TS 25.133 [2] are not completed for the release 99 test case therefore this test case is not testable and should be considered ìVoidî until the errors are fixed in TS 25.133.]

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.4.

8.6.1.4.3 Test purpose

To verify that the UE meets the minimum requirements and also verify that the UE performs sufficient layer 1 filtering of the measurements. The test is performed in fading propagation conditions.

8.6.1.4.4 Method of test

8.6.1.4.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.6.1.4.1 and 8.6.1.4.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and Event 1B shall be used. The test consists of two successive time periods, each with time duration of T1 and T2 respectively.

The TTI of the uplink DCCH shall be 20ms.

Table 8.6.1.4.1: General test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	0	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	120	
Filter coefficient		0	
Monitored cell list size		24	Signalled before time T1. NOTE: See Annex I for cell information.
T1	s	200	
T2	s	201	

Table 8.6.1.4.2: Cell specific test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	-17		N/A	
OCNS_Ec/Ior	dB	-1.049		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	7.29	3.29	3.29	7.29
I_{oc}	dBm/3.84 MHz	-70			
CPICH_Ec/Io	dB	-12	-16	-16	-12
Propagation Condition	Case 5 as specified in table D.2.2.1				

8.6.1.4.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up in AWGN conditions, according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) 5 seconds after step4 has completed, the fading simulator is switched on, configured with the settings described in the tables above at the beginning of T1.

6) UE shall start transmitting MEASUREMENT REPORT messages triggered by event 1A.

7) SS shall count the reports. The number of received event 1A reports shall be less than 60. If the SS fails to receive less than 60 event 1A reports, then then a failure is recorded. If the SS receives number of event 1A reports within the required limit, the number of succesfull tests is increased by one.

8) After 200 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

9) UE shall start transmitting MEASUREMENT REPORT messages triggered by event 1B.

10) During the first 1s of time period T2 no event reports shall be counted.

11) After the first 1s SS shall start counting the reports. The number of received event 1B reports shall be less than 60. If the SS receives number of event 1B reports within the required limit, the number of succesfull tests is increased by one.

12) After 201 seconds from the beginning of T2, the UE is switched off.

13) Repeat steps 1-12 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0
-message authentication code -RRC message sequence number	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity (10.3.7.41)	Intra-frequency measurement Not Present 0 FDD CPICH_Ec/N0
-Reporting quantities for active set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE report criteria -Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event	Not Present Not Present Intra-frequency measurement reporting criteria 2
-Intra-frequency event identity -Triggering condition 2 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status	Event 1A Active set cells and monitored set cells 0 dB Not Present 1.0 0 dB Not Present 0 Not Present 120 ms Not present 0 ms (Note 2) Not Present
-Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis	Event 1B Active set cells and monitored set cells 0 dB Not Present 1.0 0 dB

Information Element/Group name	Value/Remark
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	120 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL. Note 2: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.4.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check every time first if the number of the event 1A events is within the required limit, and then, check if the number of the event 1B events is within the required limit.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.1.4A Correct reporting of neighbours in fading propagation condition (Rel-4 and later)

8.6.1.4A.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the Release 4 and later FDD UE.

8.6.1.4A.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.4.

8.6.1.4A.3 Test purpose

To verify that the UE meets the minimum requirements and also verify that the UE performs sufficient layer 1 filtering of the measurements. The test is performed in fading propagation conditions.

8.6.1.4A.4 Method of test

8.6.1.4A.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.6.1.4A.1 and 8.6.1.4A.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and Event 1B shall be used. The test consists of two successive time periods, each with time duration of T1 and T2 respectively.

The TTI of the uplink DCCH shall be 20ms.

Table 8.6.1.4A.1: General test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	0	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	120	
Filter coefficient		0	
Monitored cell list size		24	Signalled before time T1. NOTE: See Annex I for cell information.
T1	s	200	
T2	s	201	

Table 8.6.1.4A.2: Cell specific test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	-17		N/A	
OCNS_Ec/Ior	dB	-1.049		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	7.29	3.29	3.29	7.29
$\hat{I}_{or}$ (Note 1)	dBm	-62.71	-66.71	-66.71	-62.71
I_{oc}	dBm/3.84 MHz	-70			
CPICH_Ec/Io	dB	-12	-16	-16	-12
Propagation Condition	Case 5 as specified in table D.2.2.1				
Note 1: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.					

8.6.1.4A.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up in AWGN conditions, according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) 5 seconds after step4 has completed, the fading simulator is switched on, configured with the settings in table 8.6.1.4A.3 at the beginning of T1.

6) UE shall start transmitting MEASUREMENT REPORT messages triggered by event 1A.

7) SS shall count the reports. The number of received event 1A reports shall be less than 60. If the SS fails to receive less than 60 event 1A reports, then a failure is recorded. If the SS receives number of event 1A reports within the required limit, the number of succesfull tests is increased by one.

8) After 200 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

9) UE shall start transmitting MEASUREMENT REPORT messages triggered by event 1B.

10) During the first 1s of time period T2 no event reports shall be counted.

11) After the first 1s SS shall start counting the reports. The number of received event 1B reports shall be less than 60. If the SS receives number of event 1B reports within the required limit, the number of succesfull tests is increased by one.

12) After 201 seconds from the beginning of T2, the UE is switched off.

13) Repeat steps 1-12 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0
-message authentication code -RRC message sequence number	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity (10.3.7.41)	Intra-frequency measurement Not Present 0 FDD CPICH_Ec/N0
-Reporting quantities for active set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE report criteria -Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event	Not Present Not Present Intra-frequency measurement reporting criteria 2
-Intra-frequency event identity -Triggering condition 2 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status	Event 1A Active set cells and monitored set cells 0 dB Not Present 1.0 0 dB Not Present 0 Not Present 120 ms Not present 0 ms (Note 2) Not Present
-Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis	Event 1B Active set cells and monitored set cells 0 dB Not Present 1.0 0 dB

Information Element/Group name	Value/Remark
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	120 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL. Note 2: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.4A.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check every time first if the number of the event 1A events is within the required limit, and then, check if the number of the event 1B events is within the required limit.

Table 8.6.1.4A.3: Test requirements for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
CPICH_Ec/Ior	dB	-9.30	-9.70	-9.70	-9.30
PCCPCH_Ec/Ior	dB	-11.30	-11.70	-11.70	-11.30
SCH_Ec/Ior	dB	-11.30	-11.70	-11.70	-11.30
PICH_Ec/Ior	dB	-14.30	-14.70	-14.70	-14.30
DPCH_Ec/Ior	dB	-16.30	-16.70	N/A	
OCNS_Ec/Ior	dB	-1.26	-1.14	-1.02	-1.13
$\hat{I}_{or}/I_{oc}$ (Note 1)	dB	7.30	3.30	3.30	7.30
$\hat{I}_{or}$ ~~(Note 1)~~	dBm	-62.70	-66.70	-66.70	-62.70
I_{oc}	dBm/3.84 MHz	-70			
CPICH_Ec/Io (Note 1)	dB	-11.30	-15.70	-15.70	-11.30
Propagation Condition	Case 5 as specified in table D.2.2.1				
Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.					

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

Annex F (normative): General test conditions and declarations

The requirements of this clause apply to all applicable tests in the present document.

Many of the tests in the present document measure a parameter relative to a value that is not fully specified in the UE specifications. For these tests, the Minimum Requirement is determined relative to a nominal value specified by the manufacturer.

When specified in a test, the manufacturer shall declare the nominal value of a parameter, or whether an option is supported.

In all the relevant clauses in this clause all Bit Error Ratio (BER), Block Error Ratio (BLER), False transmit format Detection Ratio **(**FDR) measurements shall be carried out according to the general rules for statistical testing in clause F.6.

F.1 Acceptable uncertainty of Test System

The maximum acceptable uncertainty of the Test System is specified below for each test, where appropriate. The Test System shall enable the stimulus signals in the test case to be adjusted to within the specified range, and the equipment under test to be measured with an uncertainty not exceeding the specified values. All ranges and uncertainties are absolute values, and are valid for a confidence level of 95 %, unless otherwise stated.

A confidence level of 95 % is the measurement uncertainty tolerance interval for a specific measurement that contains 95 % of the performance of a population of test equipment.

For RF tests it should be noted that the uncertainties in clause F.1 apply to the Test System operating into a nominal 50 ohm load and do not include system effects due to mismatch between the DUT and the Test System.

F.1.5 Requirements for support of RRM

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

<table>
<tr><th>Clause</th><th>Maximum Test System Uncertainty</th><th>Derivation of Test System Uncertainty</th></tr>
<tr><td>8.2 Idle Mode Tasks</td><td></td><td></td></tr>
<tr><td>8.2.2 Cell Re-Selection</td><td></td><td></td></tr>
<tr><td rowspan="2">8.2.2.1 Scenario 1: Single carrier case</td><td>During T1 and T2:
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{oc} ±1.0 dB

During T1:
I_{or} (2) ±0.7 dB

I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB

During T2:
I_{or} (1) ±0.7 dB

I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB</td><td></td></tr>
<tr><td colspan="2">Assumptions:
a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2.

b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other.

c) The relative uncertainties for Ior(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).

d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).

e) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).

f) The absolute uncertainty of Ior(2) at T1 and the relative uncertainty of Ior(1, 3, 4, 5, 6), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(1) at T2 and the relative uncertainty of Ior(2, 3, 4, 5, 6), are uncorrelated to each other.

An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].</td></tr>
</table>

<table>
<tr><th>Clause</th><th>Maximum Test System Uncertainty</th><th>Derivation of Test System Uncertainty</th></tr>
<tr><td rowspan="2">8.2.2.2 Scenario 2: Multi carrier case</td><td><u>Channel 1 during T1 and T2:</u>
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{oc} (1) ±1.0 dB

<u>Channel 1 during T1:</u>
I_{or} (1) ±0.7 dB

I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB

<u>Channel 1 during T2:</u>
I_{or} (1) ±0.7 dB

I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB

<u>Channel 2 during T1 and T2:</u>
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{oc} (2) ±1.0 dB

<u>Channel 2 during T1:</u>
I_{or} (2) ±0.7 dB

I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB

<u>Channel 2 during T2:</u>
I_{or} (2) ±0.7 dB

I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB</td><td></td></tr>
<tr><td colspan="2">Assumptions:
a) to e): Same as for the one-frequency test 8.2.2.1.

f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(2) and the relative uncertainty of Ior(5, 6), are uncorrelated to each other.

g) The absolute uncertainties for Ior(1) and Ior(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).

h) The absolute uncertainties for Ioc(1) and Ioc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).

An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].</td></tr>
<tr><td></td><td></td><td></td></tr>
</table>

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2.3 UTRAN to GSM Cell Re-Selection		
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc/RXLEV based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB.
8.2.3.2 Scenario 2: Only UTRA level changed	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.3.1
8.2.4 FDD/TDD cell re-selection	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.3 UTRAN Connected Mode Mobility		
8.3.1 FDD/FDD Soft Handover	<u>During T1 and T2/T3/T4/T5/T6:</u> $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB Relative delay of paths received from cell 2 with respect to cell 1: ±0.5 chips <u>During T1:</u> Already covered above <u>During T2/T3/T4/T5/T6:</u> I_{or} (2) relative to I_{or} (1) ±0.3 dB	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2), are uncorrelated to each other. An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	
8.3.2 FDD/FDD Hard Handover		
8.3.2.1 Handover to intra-frequency cell	During T1 and T2 / T3: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB During T1: Already covered above During T2 / T3: I_{or} (2) relative to I_{or} (1) ±0.3 dB	
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2), are uncorrelated to each other. An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.2.2 Handover to inter-frequency cell	Channel 1 during T1 and T2 / T3: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} (1) ±1.0 dB Channel 2 during T1 and T2 / T3: I_{oc} (2) ±1.0 dB Channel 2 during T1: Already covered above Channel 2 during T2 / T3: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (2) ±0.7 dB	
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) The uncertainty for Ioc(n) and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The absolute uncertainties for Ior(1) and Ior(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). f) The absolute uncertainties for Ioc(1) and Ioc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	
8.3.3 FDD/TDD Handover	TBD	
8.3.4 Inter-system Handover from UTRAN FDD to GSM	TBD	
8.3.5 Cell Re-selection in CELL_FACH		

<table>
<tr><th>Clause</th><th>Maximum Test System Uncertainty</th><th>Derivation of Test System Uncertainty</th></tr>
<tr><td rowspan="2">8.3.5.1 One frequency present in the neighbour list</td><td>During T1 and T2:
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{oc} ±1.0 dB
During T1:
I_{or} (2) ±0.7 dB
I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB
During T2:
I_{or} (1) ±0.7 dB
I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB</td><td></td></tr>
<tr><td colspan="2">Assumptions:
a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2.
b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other.
c) The relative uncertainties for Ior(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
e) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
f) The absolute uncertainty of Ior(2) at T1 and the relative uncertainty of Ior(1, 3, 4, 5, 6), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(1) at T2 and the relative uncertainty of Ior(2, 3, 4, 5, 6), are uncorrelated to each other.
An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].</td></tr>
</table>

<table>
<tr><th>Clause</th><th>Maximum Test System Uncertainty</th><th>Derivation of Test System Uncertainty</th></tr>
<tr><td rowspan="2">8.3.5.2 Two frequencies present in the neighbour list</td><td>Channel 1 during T1 and T2:
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{oc} (1) ±1.0 dB
Channel 1 during T1:
I_{or} (1) ±0.7 dB
I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB
Channel 1 during T2:
I_{or} (1) ±0.7 dB
I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB
Channel 2 during T1 and T2:
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{oc} (2) ±1.0 dB
Channel 2 during T1:
I_{or} (2) ±0.7 dB
I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB
Channel 2 during T2:
I_{or} (2) ±0.7 dB
I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB</td><td></td></tr>
<tr><td colspan="2">Assumptions:
a) to e): Same as for the one-frequency test 8.3.5.1.
f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(2) and the relative uncertainty of Ior(5, 6), are uncorrelated to each other.
g) The absolute uncertainties for Ior(1) and Ior(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
h) The absolute uncertainties for Ioc(1) and Ioc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].</td></tr>
</table>

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5.3 Cell Re-selection to GSM	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc/RXLEV based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB.
8.3.6 Cell Re-selection in CELL_PCH		
8.3.6.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.3.7 Cell Re-selection in URA_PCH		
8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control		
8.4.1 RRC Re-establishment delay	Settings. $\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the CPICH_Ec/Ior ratio. The absolute error of the AWGN is specified as 1.0 dB

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.4.2 Random Access	Settings. $\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{AICH\_E_c}{I_{or}}$ ±0.1 dB Measurements: Power difference. ± 1dB Maximum Power: same as 5.5.2	0.1 dB uncertainty in AICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the AICH_Ec/Ior ratio. The absolute error of the AWGN is specified as 1.0 dB Power difference: Assume symmetric meas error ±1.0 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error. Maximum Power: Assume asymmetric meas error -1.0 dB / 0.7 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error, and +0.7 dB for upper limit
8.4.3 Transport format combination selection in UE	$\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in DPCH_Ec ratio
8.5 Timing and Signalling Characteristics		
8.5.1 UE Transmit Timing	I_{or} ±1.0 dB I_{or1}/I_{or2} ±0.3 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in DPCH_Ec ratio 0.3 dB uncertainty in Ior1/Ior2 based on power meter measurement after the combiner The absolute error of the Ior is specified as 1.0 dB.
8.6 UE Measurements Procedures		
8.6.1 FDD intra frequency measurements		
8.6.1.1 Event triggered reporting in AWGN propagation conditions (R99)	<u>During T1/T4 and T2/T3:</u> $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB <u>During T1/T4 only:</u> Already covered above <u>During T2/T3 only:</u> I_{or} (2) relative to I_{or} (1) ±0.3 dB	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6.1.1 A Event triggered reporting in AWGN propagation conditions (Rel-4 and later)	During T1/T3 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB During T1/T3 only: Already covered above During T2 only: I_{or} (2) relative to I_{or} (1) ±0.3 dB	
8.6.1.1 and 8.6.1.1A	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2), are uncorrelated to each other. An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)	During T0 to T6: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB During T1/T2, T3 and T6: I_{or} (3) relative to I_{or} (1) ±0.3 dB During T3, T4/T5 and T6: I_{or} (2) relative to I_{or} (1) ±0.3 dB	
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [4], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) The relative uncertainties for Ior(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The uncertainty for Ioc and Ior(1) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2, 3), are uncorrelated to each other.	
8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)	TBD	
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6.1.4 Correct reporting of neighbours in fading propagation condition (R99)	TBD	
8.6.1.4A Correct reporting of neighbours in fading propagation condition (Rel-4 and later)	During T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB During T1 and T2: I_{or} (2) relative to I_{or} (1) ±0.3 dB	
8.6.1.4 and 8.6.1.4A	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2), are uncorrelated to each other. An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	
8.6.2 FDD inter frequency measurements		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD	
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD	
8.6.3 TDD measurements		
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD	
8.6.4 GSM Measurement	TBD	
8.7 Measurements Performance Requirements		
8.7.1 CPICH RSCP		
8.7.1.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.1
8.7.1.2 Inter frequency measurement accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.7.2 CPICH Ec/Io		

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.7.2.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.1
8.7.2.2 Inter frequency measurement accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.7.3 UTRA Carrier RSSI	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc1/Ioc2 based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.3A GSM Carrier RSSI	TBD	
8.7.3C UE Transmitted power	Mean power measurement ±0,7 dB	Downlink parameters are unimportant.
8.7.4 SFN-CFN observed time difference		
8.7.4.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Actual SFN-CFN observed time difference: ±0.5 chips	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.4.2 Inter frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Actual SFN-CFN observed time difference: ±0.5 chips	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.5.1 SFN-SFN observed time difference type 1	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Actual SFN-SFN observed time difference type 1: ±0.5 chips	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.6 UE Rx-Tx time difference	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Rx-Tx Timing Accuracy ±0.5 chip	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB.

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.7.8 P-CCPCH RSCP	TBD	

F.1.6 Performance requirement (HSDPA)

Table F.1.6: Maximum Test System Uncertainty for Performance Requirements (HSDPA)

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
9.2.1 Single Link Performance	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in Ec/Ior ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN Ioc is not important for any tests in clause 9 but is specified as 1.0 dB.
9.3.1 AWGN propagation conditions	No test system uncertainty applied	

F.2 Test Tolerances (This clause is informative)

The Test Tolerances defined in this clause have been used to relax the Minimum Requirements in the present document to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.).

F.2.1 Transmitter

Table F.2.1: Test Tolerances for transmitter tests.

Clause	Test Tolerance
5.2 Maximum Output Power	0.7 dB
5.3 Frequency error	10 Hz
5.4.1 Open loop power control in uplink	1.0 dB
5.4.2 Inner loop power control in the uplink	0.1 dB (1 dB and 0 dB range) 0.15 dB (2 dB range) 0.2 dB (3 dB range 0.3 dB (> 3 dB range))
5.4.3 Minimum Output Power	1.0 dB
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	0.4 dB
5.4.4 Out-of-synchronisation handling of output power: transmit ON/OFF time	0 ms
5.5.1 Transmit OFF power	1.0 dB
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0.7 dB / -1.0 dB Off power TT [ ] dB
5.6 Change of TFC: power control step size	0.3 dB
5.7 Power setting in uplink compressed mode:-UE output power	See subset of 5.4.2
5.8 Occupied Bandwidth	0 kHz
5.9 Spectrum emission mask	1.5 dB (0 dB for additional requirements for Band II)
5.10 ACLR	0.8 dB for ratio 0.0 dB for absolute power
5.11 Spurious emissions	0 dB
5.12 Transmit Intermodulation	0 dB
5.13.1 Transmit modulation: EVM	0%
5.13.2 Transmit modulation: peak code domain error	1.0 dB
5.13.4 PRACH preamble quality (EVM)	0%
5.13.4 PRACH preamble quality (Frequency error)	10 Hz

F.2.2 Receiver

Table F.2.2: Test Tolerances for receiver tests.

Clause	Test Tolerance
6.2 Reference sensitivity level	0.7 dB
6.3 Maximum input level:	0.7 dB for Ior
6.4 Adjacent channel selectivity	0 dB
6.5 Blocking characteristics	0 dB
6.6 Spurious Response	0 dB
6.7 Intermodulation Characteristics	0 dB
6.8 Spurious emissions	0 dB

F.2.3 Performance requirements

Table F.2.3: Test Tolerances for Performance Requirements.

Clause	Test Tolerance
7.2 Demodulation in Static Propagation Condition	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.3 Demodulation of DCH in multipath Fading Propagation conditions	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.4 Demodulation of DCH in Moving Propagation conditions	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.5 Demodulation of DCH in Birth-Death Propagation conditions	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.6.1 Demodulation of DCH in open loop Transmit diversity mode	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.7.1 Demodulation in inter-cell soft Handover conditions	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.7.2 Combining of TPC commands Test 1	0 dB for Ior1, Ior2 0.1 dB for DPCH_Ec/Ior
7.7.2 Combining of TPC commands Test 2	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.8.1 Power control in downlink constant BLER target	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.8.2, Power control in downlink initial convergence	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.8.3, Power control in downlink: wind up effects	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.9 Downlink compressed mode	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.10 Blind transport format detection Tests 1, 2, 3	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.10 Blind transport format detection Tests 4, 5, 6	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.11 Demodulation of paging channel (PCH)	TBD
7.12 Detection of acquisition indicator (AI)	TBD

F.2.4 Requirements for support of RRM

Table F.2.4: Test Tolerances for Radio Resource Management Tests

Clause	Test Tolerance
8.2 Idle Mode Tasks	
8.2.2 Cell Re-Selection	

Clause	Test Tolerance
8.2.2.1 Scenario 1: Single carrier case	<u>During T1 and T2:</u> +0.60 dB for all Cell 1 and 2 Ec/Ior ratios -0.50 dB for all Cell 3, 4 ,5, 6 Ec/Ior ratios +0.03 dB for Ior(3, 4, 5, 6) <u>During T1:</u> -0.27 dB for Ior(1) +0.13 dB for Ior(2) <u>During T2:</u> +0.13 dB for Ior(1) -0.27 dB for Ior(2)
8.2.2.2 Scenario 2: Multi carrier case	<u>Channel 1 during T1 and T2:</u> +0.70 dB for all Cell 1 Ec/Ior ratios -0.80 dB for all Cell 3 and 4 Ec/Ior ratios <u>Channel 1 during T1:</u> -0.01 dB for Ior(1) -0.01 dB for Ior(3, 4) No change for Ioc(1) <u>Channel 1 during T2:</u> +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.80 dB for Ioc(1) <u>Channel 2 during T1 and T2:</u> +0.70 dB for all Cell 2 Ec/Ior ratios -0.80 dB for all Cell 5 and 6 Ec/Ior ratios <u>Channel 2 during T1:</u> +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.80 dB for Ioc(2) <u>Channel 2 during T2:</u> -0.01 dB for Ior(2) -0.01 dB for Ior(5, 6) No change for Ioc(2)
8.2.3 UTRAN to GSM Cell Re-Selection	
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.2.3.2 Scenario 2: Only UTRA level changed	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.2.4 FDD/TDD cell re-selection	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc1/Ioc2
8.3 UTRAN Connected Mode Mobility	
8.3.1 FDD/FDD Soft Handover	<u>During T1 and T2/T3/T4/T5/T6:</u> +0.70 dB for all Cell 1 Ec/Ior ratios Relative delay: {ñ147.5 Ö +147.5} chips <u>During T1:</u> Already covered above <u>During T2/T3/T4/T5/T6:</u> +0.70 dB for all Cell 2 Ec/Ior ratios
8.3.2 FDD/FDD Hard Handover	

Clause	Test Tolerance
8.3.2.1 Handover to intra-frequency cell	During T1 and T2 / T3: +0.70 dB for all Cell 1 Ec/Ior ratios During T1: Already covered above During T2 / T3: +0.70 dB for all Cell 2 Ec/Ior ratios
8.3.2.2 Handover to inter-frequency cell	Channel 1 during T1 and T2 / T3: +0.80 dB for all Cell 1 Ec/Ior ratios Channel 2 during T1: Not applicable Channel 2 during T2 / T3: +0.80 dB for all Cell 2 Ec/Ior ratios
8.3.3 FDD/TDD Handover	TBD
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD
8.3.5 Cell Re-selection in CELL_FACH	
8.3.5.1 One frequency present in the neighbour list	During T1 and T2: +0.60 dB for all Cell 1 and 2 Ec/Ior ratios -0.50 dB for all Cell 3, 4 ,5, 6 Ec/Ior ratios +0.03 dB for Ior(3, 4, 5, 6) During T1: -0.27 dB for Ior(1) +0.13 dB for Ior(2) During T2: +0.13 dB for Ior(1) -0.27 dB for Ior(2)
8.3.5.2 Two frequencies present in the neighbour list	Channel 1 during T1 and T2: +0.60 dB for all Cell 1 Ec/Ior ratios -0.70 dB for all Cell 3 and 4 Ec/Ior ratios Channel 1 during T1: +0.05 dB for Ior(1) +0.05 dB for Ior(3, 4) No change for Ioc(1) Channel 1 during T2: +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.60 dB for Ioc(1) Channel 2 during T1 and T2: +0.60 dB for all Cell 2 Ec/Ior ratios -0.70 dB for all Cell 5 and 6 Ec/Ior ratios Channel 2 during T1: +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.60 dB for Ioc(2) Channel 2 during T2: +0.05 dB for Ior(2) +0.05 dB for Ior(5, 6) No change for Ioc(2)
8.3.5.3 Cell Re-selection to GSM	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.3.6 Cell Re-selection in CELL_PCH	

Clause	Test Tolerance
8.3.6.1 One frequency present in the neighbour list	Same as 8.2.2.1
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2
8.3.7 Cell Re-selection in URA_PCH	
8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2
8.4 RRC Connection Control	
8.4.1 RRC Re-establishment delay	0 dB for $\hat{I}_{or}/I_{oc}$ 0 dB for any_Ec/Ior Zero TT is applied, as level settings are not critical with respect to the outcome of the test.
8.4.2 Random Access	Settings: 0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for AICH_Ec/Ior Measurements: Power difference: ± 1dB Maximum Power: -1dB / +0.7dB
8.4.3 Transport format combination selection in UE	0 dB for DPCH_Ec/Ior
8.5 Timing and Signalling Characteristics	
8.5.1 UE Transmit Timing	TBD
8.6 UE Measurements Procedures	
8.6.1 FDD intra frequency measurements	
8.6.1.1 Event triggered reporting in AWGN propagation conditions (R99)	During T1/T4 and T2/T3: +0.70 dB for all Cell 1 Ec/Ior ratios During T1/T4 only: Already covered above During T2/T3 only: +0.70 dB for all Cell 2 Ec/Ior ratios
8.6.1.1 A Event triggered reporting in AWGN propagation conditions (Rel-4 and later)	During T1/T3 and T2: +0.70 dB for all Cell 1 Ec/Ior ratios During T1/T3 only: Already covered above During T2 only: +0.70 dB for all Cell 2 Ec/Ior ratios
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)	During T0 to T6: +0.70 dB for all Cell 1 Ec/Ior ratios +0.70 dB for all Cell 2 Ec/Ior ratios +0.70 dB for all Cell 3 Ec/Ior ratiosTBD
8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)	TBD
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD
8.6.1.4 Correct reporting of neighbours in fading propagation condition (R99)	TBD
8.6.1.4A Correct reporting of neighbours in fading propagation condition (Rel-4 and later)	During T1: +0.70 dB for all Cell 1 Ec/Ior ratios +0.30 dB for all Cell 2 Ec/Ior ratios During T2: +0.30 dB for all Cell 1 Ec/Ior ratios +0.70 dB for all Cell 2 Ec/Ior ratios
8.6.2 FDD inter frequency measurements	

Clause	Test Tolerance
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD
8.6.3 TDD measurements	
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD
8.7 Measurements Performance Requirements	TBD
8.7.1 CPICH RSCP	
8.7.1.1 Intra frequency measurements accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 1.0 dB for Ioc
8.7.1.2 Inter frequency measurement accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc1/Ioc2 1.0 dB for Ioc
8.7.2 CPICH Ec/Io	
8.7.2.1 Intra frequency measurements accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.7.2.2 Inter frequency measurement accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.7.3 UTRA Carrier RSSI	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc
8.7.3A GSM Carrier RSSI	TBD
8.7.3B Transport channel BLER	TBD
8.7.3C UE Transmitted power	0.7 dB for mean power measurement by test system
8.7.4 SFN-CFN observed time difference	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc ±0.5 chips for the actual SFN-CFN observed time difference
8.7.5.1 SFN-SFN observed time difference type 1	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc ±0.5 chips for the actual SFN-SFN observed time difference type 1
8.7.6 UE Rx-Tx time difference	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc 0.5 chip for Rx-Tx Timing Accuracy
8.7.7 Observed time difference to GSM cell	TBD
8.7.8 P-CCPCH RSCP	TBD

F.2.5 Performance requirements (HSDPA)

Table F.2.5: Test Tolerances for Performance Requirements (HSDPA).

Clause	Test Tolerance
9.2.1 Single Link Performance	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for Ec/Ior
9.4 HS-SCCH Detection Performance	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for P-CPICH_Ec/Ior and HS-SCCH_Ec/Ior

F.3 Interpretation of measurement results

The measurement results returned by the Test System are compared ñ without any modification ñ against the Test Requirements as defined by the shared risk principle.

The Shared Risk principle is defined in ETR 273-1-2 clause 6.5.

The actual measurement uncertainty of the Test System for the measurement of each parameter shall be included in the test report.

The recorded value for the Test System uncertainty shall be, for each measurement, equal to or lower than the appropriate figure in clause F.1 of the present document.

If the Test System for a test is known to have a measurement uncertainty greater than that specified in clause F.1, it is still permitted to use this apparatus provided that an adjustment is made value as follows.

Any additional uncertainty in the Test System over and above that specified in clause F.1 shall be used to tighten the Test Requirement ñ making the test harder to pass. (For some tests e.g. receiver tests, this may require modification of stimulus signals). This procedure will ensure that a Test System not compliant with clause F.1does not increase the chance of passing a device under test where that device would otherwise have failed the test if a Test System compliant with clause F.1 had been used.

For some of the more complex tests e.g. RRM, deriving the overall test system uncertainty is not straightforward. In such cases the derivation is given in TR 34.902 [24] rather than in subclause F.1. If it is deemed necessary to apply the additional test system uncertainty rules to these tests, the formula for deriving the new overall uncertainty from any excess fundamental test system uncertainties, shall use the formulas provided in 34.902.

F.4 Derivation of Test Requirements (This clause is informative)

The Test Requirements in the present document have been calculated by relaxing the Minimum Requirements of the core specification using the Test Tolerances defined in clause F.2. When the Test Tolerance is zero, the Test Requirement will be the same as the Minimum Requirement. When the Test Tolerance is non-zero, the Test Requirements will differ from the Minimum Requirements, and the formula used for this relaxation is given in table F.4.

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2 Idle Mode Tasks			
8.2.2 Cell Re-Selection			
8.2.2.1 Scenario 1: Single carrier case	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	<u>During T1 and T2:</u> Cells 1 and 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Cells 3, 4, 5, 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Ior(3, 4, 5, 6) = -69.73 dBm	<u>During T1 and T2:</u> +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for Ior(3, 4, 5, 6)	<u>During T1 and T2:</u> Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ior(3, 4, 5, 6) + TT
	<u>During T1:</u> Ior(1) = -62.73 dBm Ior(2) = -59.73 dBm	<u>During T1:</u> -0.27 dB for Ior(1) +0.13 dB for Ior(2)	<u>During T1:</u> Ior(1) + TT Ior(2) + TT
	<u>During T2:</u> Ior(1) = -59.73 dBm Ior(2) = -62.73 dBm	<u>During T2:</u> +0.13 dB for Ior(1) -0.27 dB for Ior(2)	<u>During T2:</u> Ior(1) + TT Ior(2) + TT
8.2.2.2 Scenario 2: Multi carrier case	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	<u>Channel 1 during T1 and T2:</u> Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Cells 3 and 4: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	<u>Channel 1 during T1 and T2:</u> +0.70 dB +0.70 dB +0.70 dB +0.70 dB -0.80 dB -0.80 dB -0.80 dB -0.80 dB	<u>Channel 1 during T1 and T2:</u> Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	<u>Channel 1 during T1:</u> Ior(1) = -73.39 dBm Ior(3, 4) = -77.39 dBm Ioc(1) = -70.00 dBm	<u>Channel 1 during T1:</u> -0.01 dB for Ior(1) -0.01 dB for Ior(3,4) 0.00 dB for Ioc(1)	<u>Channel 1 during T1:</u> Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 1 during T2: Ior(1) = -67.75 dBm Ior(3, 4) = -74.75 dBm Ioc(1) = -70.00 dBm	Channel 1 during T2: +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.80 dB for Ioc(1)	Channel 1 during T2: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT
	Channel 2 during T1 and T2: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Cells 5 and 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	Channel 2 during T1 and T2: +0.70 dB +0.70 dB +0.70 dB +0.70 dB -0.80 dB -0.80 dB -0.80 dB -0.80 dB	Channel 2 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 2 during T1: Ior(2) = -67.75 dBm Ior(5, 6) = -74.75 dBm Ioc(2) = -70.00 dBm	Channel 2 during T1: +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.80 dB for Ioc(2)	Channel 2 during T1: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
	Channel 2 during T2: Ior(2) = -73.39 dBm Ior(5, 6) = -77.39 dBm Ioc(2) = -70.00 dBm	Channel 2 during T2: -0.01 dB for Ior(2) -0.01 dB for Ior(5,6) 0.00 dB for Ioc(2)	Channel 2 during T2: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
8.2.3 UTRAN to GSM Cell Re-Selection			
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 0 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = - 5 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ - TT Ior/Ioc = -5.3 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2.3.2 Scenario 2: Only UTRA level changed	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 20 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 20.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = -9 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ - TT Ior/Ioc = -9.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -10.1 dB:
8.2.4 FDD/TDD cell re-selection	TBD		
8.3 UTRAN Connected Mode Mobility	TBD		
8.3.1 FDD/FDD Soft Handover	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	<u>During T1 and T2/T3/T4/T5/T6:</u> Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Relative delay of paths received from cell 2 with respect to cell 1 = {-148 Ö 148} chips	<u>During T1 and T2/T3/T4/T5/T6:</u> +0.70 dB +0.70 dB +0.70 dB +0.70 dB 0.5 chips	<u>During T1 and T2/T3/T4/T5/T6:</u> Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT {-148+TT Ö 148-TT} chips
	<u>During T1:</u> Already covered above	<u>During T1:</u> Covered above	<u>During T1:</u> Already covered above
	<u>During T2/T3/T4/T5/T6:</u> Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	<u>During T2/T3/T4/T5/T6:</u> +0.70 dB +0.70 dB +0.70 dB +0.70 dB	<u>During T2/T3/T4/T5/T6:</u> Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.3.2 FDD/FDD Hard Handover			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.2.1 Handover to intra-frequency cell	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 and T2 / T3: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1 / T2 / T3: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T1 and T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	During T1: Already covered above	During T1: Covered above	During T1: Already covered above
	During T2 / T3: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T2 / T3: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.3.2.2 Handover to inter-frequency cell	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	Channel 1 during T1 and T2 / T3: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	Channel 1 during T1 and T2 / T3: +0.80 dB +0.80 dB +0.80 dB +0.80 dB	Channel 1 during T1 and T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 2 during T1: Not applicable	Channel 2 during T1: Not applicable	Channel 2 during T1: Not applicable
	Channel 2 during T2 / T3: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	Channel 2 during T2 / T3: +0.80 dB +0.80 dB +0.80 dB +0.80 dB	Channel 2 during T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.3.3 FDD/TDD Handover	TBD		
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD		
8.3.5 Cell Re-selection in CELL_FACH			
8.3.5.1 One frequency present in the neighbour list	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	During T1 and T2: Cells 1 and 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 3, 4, 5, 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Ior(3, 4, 5, 6) = -69.73 dBm	During T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for Ior(3, 4, 5, 6)	During T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ior(3, 4, 5, 6) + TT
	During T1: Ior(1) = -62.73 dBm Ior(2) = -59.73 dBm	During T1: -0.27 dB for Ior(1) +0.13 dB for Ior(2)	During T1: Ior(1) + TT Ior(2) + TT
	During T2: Ior(1) = -59.73 dBm Ior(2) = -62.73 dBm	During T2: +0.13 dB for Ior(1) -0.27 dB for Ior(2)	During T2: Ior(1) + TT Ior(2) + TT
8.3.5.2 Two frequencies present in the neighbour list	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	Channel 1 during T1 and T2: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 3 and 4: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB	Channel 1 during T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Channel 1 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 1 during T1: Ior(1) = -71.85 dBm Ior(3, 4) = -76.85 dBm Ioc(1) = -70.00 dBm	Channel 1 during T1: +0.05 dB for Ior(1) +0.05 dB for Ior(3,4) 0.00 dB for Ioc(1)	Channel 1 during T1: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT
	Channel 1 during T2: Ior(1) = -67.75 dBm Ior(3, 4) = -74.75 dBm Ioc(1) = -70.00 dBm	Channel 1 during T2: +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.60 dB for Ioc(1)	Channel 1 during T2: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 2 during T1 and T2: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 5 and 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB	Channel 2 during T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Channel 2 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 2 during T1: Ior(2) = -67.75 dBm Ior(5, 6) = -74.75 dBm Ioc(2) = -70.00 dBm	Channel 2 during T1: +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.60 dB for Ioc(2)	Channel 2 during T1: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
	Channel 2 during T2: Ior(2) = -71.85 dBm Ior(5, 6) = -76.85 dBm Ioc(2) = -70.00 dBm	Channel 2 during T2: +0.05 dB for Ior(2) +0.05 dB for Ior(5,6) 0.00 dB for Ioc(2)	Channel 2 during T2: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
8.3.5.3 Cell Re-selection to GSM	During T1: $\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 0 dB Ioc/RXLEV = 20	 0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	 $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB: Ioc/RXLEV = 20.3
	During T2: $\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = - 5 dB Ioc/RXLEV = 5	 0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	 $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ - TT Ior/Ioc = -5.3 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB: Ioc/RXLEV = 4.7

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.6 Cell Re-selection in CELL_PCH			
8.3.6.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 10.27 dB Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ior/Ioc = 10.57 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 2.2 dB Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = 2.5 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.3.7 Cell Re-selection in URA_PCH			
8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control			
8.4.1 RRC Re-establishment delay	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.4.1.1 Test 1	Cell 1, T1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB DCH_Ec/Ior = -17 dB Ior/Ioc = 2.39 dB Cell 1, T2: Ior/Ioc = -infinity Cell 2, T1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Ior/Ioc = 4.39 dB Cell 2, T2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Ior/Ioc = 0.02 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc	Level settings in either direction are not critical with respect to the outcome of the test.
8.4.1.2 Test 2	Cell 1, T1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB DCH_Ec/Ior = -17 dB Ior/Ioc = -3.35 dB Cell 1, T2: Ior/Ioc = -infinity Cell 2, T1: Ior/Ioc = -infinity Cell 2, T2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Ior/Ioc = 0.02 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc	Level settings in either direction are not critical with respect to the outcome of the test.
8.4.2 Random Access	RACH power difference nominal 3dB ± 2dB UE setting uncertainty	Measurement TT:Power difference ± 1dBMaximum Power-1dB / +0.7dB	Test parameter settings unchanged.Power measurement:Upper limit +TT Lower limit -TT
8.4.3 Transport format combination selection in UE	DL Power control is ON so DPCH_Ec/Ior depends on TPC commands sent by UE	0 dB for DPCH_Ec/Ior	No test requirements for DPCH_Ec/Ior
8.5 Timing and Signalling Characteristics	TBD		
8.5.1 UE Transmit Timing	TBD		
8.6 UE Measurements Procedures			
8.6.1 FDD intra frequency measurements			
8.6.1.1 Event triggered reporting in AWGN propagation conditions	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
(R99)	During T1 to T4: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1 to T4: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T1 to T4: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	During T1/T4 only : Already covered above	During T1/T4 only: Covered above	During T1/T4 only: Already covered above
	During T2/T3 only: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T2/T3 only: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T2/T3 only: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.1 A Event triggered reporting in AWGN propagation conditions (Rel-4 and later)	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 / T2 / T3: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1 / T2 / T3: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T1 / T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	During T1/T3 only : Already covered above	During T1/T3 only: Covered above	During T1/T3 only: Already covered above
	During T2 only: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T2 only: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T2 only: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T0 to T6: Cell 1, Cell 2 and Cell 3: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T0 to T6: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T0 to T6: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)	TBD	TBD	TBD
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.6.1.4 Correct reporting of neighbours in fading propagation condition (R99)	TBD		
8.6.1.4A Correct reporting of neighbours in fading propagation condition (Rel-4 and later)	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 only: Cell 1: CPICH_Ec/Ior = -10dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB DPCH_Ec/Ior = -17 dB Cell 2: CPICH_Ec/Ior = -10dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1: +0.70 dB +0.70 dB +0.70 dB +0.70 dB +0.70 dB +0.30 dB +0.30 dB +0.30 dB +0.30 dB	During T1: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	During T2 only: Cell 1: CPICH_Ec/Ior = -10dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB DPCH_Ec/Ior = -17 dB Cell 2: CPICH_Ec/Ior = -10dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T2: +0.30 dB +0.30 dB +0.30 dB +0.30 dB +0.30 dB +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.2 FDD inter frequency measurements	TBD		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD		
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD		
8.6.3 TDD measurements	TBD		
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD		
8.7 Measurements Performance Requirements	TBD		
8.7.1 CPICH RSCP			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.1.1 Intra frequency measurements accuracy	see table 8.7.1.1.1.1 andtable 8.7.1.1.1.2	±1 dB for Ioc±0.3 dB for Ior/Ioc±0.1dB forÖ .._Ec/Ior	Any TT applied to the nominal setting shall fulfil:Test 1 (absolute and relative): Io shall not go below -69dBm Test 2(absolute and relative): Io shall not go above -50 dBmTest 3 (absolute and relative): Io shall not go below -94 dBm Ior/Ioc + TTTT on top of UE measurement accuracy:Absolute±1.0 dB for Ioc±0.3 dB for Ior/Ioc ±0.1dB for CPICH_Ec/Ior ∑ 1.4dBRelative±0.3 dB for Ior/Ioc (cell1)±0.3 dB for Ior/Ioc (cell2)±0.1dB for CPICH_Ec/Ior (cell1)±0.1dB for CPICH_Ec/Ior (cell2)∑ 0.8dB
8.7.1.2 Inter frequency measurement accuracy	See table 8.7.1.2.1.1 andtable 8.7.1.2.1.2	±1 dB for Ioc±0.3 dB for Ioc1/Ioc2±0.3 dB for Ior/Ioc±0.1dB for Ö .._Ec/Ior	Any TT applied to the nominal setting shall fulfil:Test 1: Io shall not go above -50 dBmTest 2: Io shall not go below -94 dBmIor/Ioc + TTTT on top of UE measurement accuracy:±0.3 dB for Ioc1/Ioc2±0.3 dB for Ior/Ioc (cell1)±0.3 dB for Ior/Ioc (cell2)±0.1dB for CPICH_Ec/Ior (cell1)±0.1dB for CPICH_Ec/Ior (cell2)∑ 1.1 dB
8.7.2 CPICH Ec/Io			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2.1 Intra frequency measurements accuracy	table 8.7.2.1.1.1 and table 8.7.2.1.1.2	±1 dB for Ioc ±0.3 dB for Ior/Ioc ±0.1dB for Ö .._Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1(absolute and relative): Io shall not go above -50 dBm Test 2 (absolute and relative): Io shall not go below -87dBm Test 3 (absolute and relative): Io shall not go below -94 dBm CPICH Ec/Io shall stay in the UE accuracy ranges Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute ±0.3 dB for Ior/Ioc ±0.1dB for CPICH_Ec/Ior ∑ 0.4dB Relative Ioc1=Ioc2 ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2.2 Inter frequency measurement accuracy	table 8.7.2.2.2.1 and table 8.7.2.2.2.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Ior/Ioc ±0.1dB for Ö .._Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1: Io shall not go above -50 dBm Test 2: Io shall not go below -87 dBm Test 3: Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Ioc1=Ioc2. ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8 dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.3 UTRA Carrier RSSI	Table 8.7.3.1.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Îor/Ioc	Any TT applied to the nominal setting shall fulfil: Test 1 (absolute): Io shall not go above -50 dBm Test 2 (absolute): Io shall not go below -69 dBm Test 3 (absolute and relative): Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute tests: Test 1: Max TT= Io_{max} ñ $Io_{nominal}$ $Io_{nominal}$ = -51.15 dBm Io_{max} = Ioc_{max} +Ior_{max} = (-53.5 dBm + 1dB) + (-52.5 dBm ñ 1.45 dB + 0.3 dB) = -50.0 dBm => Max TT = 1.15 dB Min TT = Io_{min} - Io Io_{min} = Ioc_{min} + Ior_{min} = (-53.5 dBm ñ1 dB) + (-54.5 dBm ñ 1.45 dB ñ 0.3 dB) = - 52.3 dBm => Min TT = -1.15 dB Test 2: Max TT= Io_{max} ñ $Io_{nominal}$ $Io_{nominal}$ = - 67.9 dBm Io_{max} = Ioc_{max} + Ior_{max} = (-69.27 dBm + 1dB) + (-68.27 dBm ñ 4.4 dB + 0.3 dB) = -66.8 dBm => Max TT = 1.1 dB Min TT = Io_{min} - Io Io_{min} = Ioc_{min} + Ior_{min} = (-69.27 dBm ñ 1 dB) + (-70.27 dBm ñ 4.4 dB ñ 0.3 dB) = -69.0 dBm => Min TT = -1.1 dB Test 3 (Band I): Max TT= Io_{max} ñ $Io_{nominal}$ $Io_{nominal}$ = -93 dBm Io_{max} = Ioc_{max} + Ior_{max} + No = (-93.46 dBm + 1dB) + (-92.46 dBm ñ 9.24 dB +0.3 dB) + -99 dBm = -91.2 => Max TT = 1.8 dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.3A GSM Carrier RSSI	TBD		
8.7.3B Transport channel BLER	TBD		
8.7.3C UE Transmitted power	Accuracy upper limit Accuracy lower limit Depends on PUEMAX see table 8.7.3C.2.1	0.7 dB	Formula: Upper accuracy limit + TT Lower accuracy limit ñ TT Add and subtract TT to all the values in table 8.7.3C.2.1.
8.7.4 SFN-CFN observed time difference	T able 8.7.4.1.2 and Table 8.7.4.2.2	±1.0 dB for Ioc ±0.3 dB for Ior/Ioc ±0.5 chips for the actual SFN-CFN observed time difference	Intra and inter frequency case: Test 1: Io shall not go above -50 dBm Test 2: No restrictions on Io value Test 3: Io shall not go below -94 dBm (Band 1), or below ñ92 dBm (Band II) or below ñ91 dBm (Band III) Œr/Ioc + TT TT on top of UE measurements accuracy: SFN-CFN observed time difference: 1.0 chips + TT
8.7.5.1 SFN-SFN observed time difference type 1	T able 8.7.5.1.2	±1.0 dB for Ioc ±0.3 dB for Ior/Ioc ±0.5 chips for the actual SFN-SFN observed time difference	Test 1: Io shall not go above -50 dBm Test 2: No restrictions on Io value Test 3: Io shall not go below -94 dBm (Band 1), or below ñ92 dBm (Band II) or below ñ91 dBm (Band III) Œr/Ioc + TT TT on top of UE measurements accuracy: SFN-SFN observed time difference: 1.0 chips + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.6 UE Rx-Tx time difference	*Io ñ10.9 dB = Ioc,* Test 1: Io = -94 dBm Test2 : Io = -72dBm Test3 : Io = -50dBm Timing Accuracy ± 1.5 chip	1 dB for Ioc 0.3 dB for Ior/Ioc 0.5 chip for timing accuracy	Test 1: Io = -92.7 dBm, Ioc = -103.6 dBm Formula: $Ioc*(1-TT_{Ioc}+ (Ior/Ioc-TT_{Ior/Ioc})) \geq$ -94 Test 2: unchanged (no critical RF parameters) Test 3: Io = -51.3 dBm, Ioc = -62.2 dBm Formula: $Ioc*(1+TT_{Ioc}+ (Ior/Ioc+TT_{Ior/Ioc})) \leq$ -50 Timing accuracy ±2.0 chip Formulas: Upper limit +TT Lower limit ñTT
8.7.7 Observed time difference to GSM cell	TBD		
8.7.8 P-CCPCH RSCP	TBD		

Table F.4.5: Derivation of Test Requirements (Performance tests HSDPA)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
9.2.1 Single Link Performance	$\frac{E_c}{I_{or}}$ -6 and -3 dB I_{OC} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 0 and 10 dB	0.1 dB for $\frac{E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{OC} unchanged

3GPP TSG-T1 Meeting #25
St Paul's Bay, Malta, 1st - 5th November 2004

Tdoc ⌘ T1-041867

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	467	⌘ rev	-	⌘	Current version:	5.5.0	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction to Event triggered reporting of two detectable neighbours in AWGN propagation condition test cases
Source:	⌘	Motorola, Nokia, Racal Instruments Wireless Soutions
Work item code:	⌘	TEI — ***Date:*** ⌘ 04/11/2004
Category:	⌘	**F** — ***Release:*** ⌘ Rel-5

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(addition of feature),*
- ***C*** *(functional modification of feature)*
- ***D*** *(editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
- *2 (GSM Phase 2)*
- *R96 (Release 1996)*
- *R97 (Release 1997)*
- *R98 (Release 1998)*
- *R99 (Release 1999)*
- *Rel-4 (Release 4)*
- *Rel-5 (Release 5)*
- *Rel-6 (Release 6)*

Reason for change: ⌘ This change is to alilgn the R99 test with changes in 25.133 R99. Also to add the test reiqrements for the effects of test system uncertainties.

Summary of change: ⌘
- a) The R99 test case defined in 8.6.1.3 need to be aligned with changes in 25.133 R99
- b) Add CPICH Ec/Io and SFN-CFN reporting in R99 Method of test 8.6.1.3.4
- c) Add new time pereoid T5 in R99 Method of test 8.6.1.3.4
- d) Add new time periods and revise durations for R99 test in table 8.6.1.3.2, and change the value of W to 0.
- e) Add new time periods for R99 test in table 8.6.1.3.3
- f) Change triggering condition 1 to ìActive set cellsî only, and change the value of W to 0, in the measurement control message for R99 test
- g) Intro new tables giving correct RF condition for R99 test
- h) Defined separate test 8.6.1.3A for Rel-4 and later.
- i) Revision of Annex F.1.5 table F.1.5 to define Test System Uncertainty
- j) Revision of Annex F.2 table F.2.4 to define Test Tolerances
- k) Revision of Annex F.4 table F4.4 to refer to derivation of test requirements

Consequences if not approved: ⌘ The test implementation will not match the requirements of 25.133 and may fail a good UE.

Clauses affected: ⌘ 8.6.1.3, Annext F, new clause 8.6.1.3A

		Y	N		
Other specs	⌘		X	Other core specifications	⌘

affected:	X Test specifications X O&M Specifications	
Other comments:	⌘	This CR is applicable for UEís supporting Rel-99 or later.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition (R99)

8.6.1.3.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the Release 99 FDD UE.

8.6.1.3.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.3.

8.6.1.3.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.3.4 Method of test

8.6.1.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The initial test parameters are given in table 8.6.1.3.4.

Table 8.6.1.3.1: Cell specific initial test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	5.87~~0~~	-Inf	-Inf
$\hat{I}_{or}$ (Note 1)	dBm	-79.13	-Inf	-Inf
I_{oc}	dBm/ 3.84 MHz	-85		
CPICH_Ec/Io	dB	-11	-Inf	-Inf
Propagation Condition	AWGN			
Note 1: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.				

The test parameters are given in table 8.6.1.3.~~1~~ 2 and 8.6.1.3.~~2~~5. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used and the periodical reporting of the events is not applied. CPICH Ec/Io and SFN-CFN observed time difference shall be reported together with Event 1A. The test consists of ~~four~~ five successive time periods, with a time duration of T1, T2, T3, T4 and T5~~T4~~ respectively. In the initial condition before the time T1 only Cell1 is active.

Table 8.6.1.3.2~~1~~: General test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		~~1~~0	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		32	NOTE: See Annex I for cell information.
T1	S	10	
T2	S	10	
T3	S	~~10~~1	
T4	S	10	
T5	S	10	

Table 8.6.1.3.3~~2~~: Cell specific test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1					Cell 2					Cell3				
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
CPICH_Ec/Ior	dB	-10					-10					-10				
PCCPCH_Ec/Ior	dB	-12					-12					-12				
SCH_Ec/Ior	dB	-12					-12					-12				
PICH_Ec/Ior	dB	-15					-15					-15				
DPCH_Ec/Ior	dB	~~-17~~Note 1					N/A		~~-0.941~~Note 1			N/A				
OCNS_Ec/Ior	dB	~~-1.049~~Note 2					-0.941		Note 2			-0.941				
$\hat{I}_{or}/I_{oc}$	dB	14.55	28.51 ~~14.45~~		~~28.51~~14.45	28.51	-Inf	27.51 ~~13.95~~		~~21.5 1~~13.95	21.51	8.05	21.51 ~~13.95~~		~~27.5 1~~13.95	27.5
$\hat{I}_{or}$ (Note 3~~1~~)	dBm	70.45	56.49		70.55	56.49	-Inf	-57.49		-71.05	-63.49	-76.95	-63.49		-71.05	-57.49
I_{oc}	dBm/3.84 MHz	-85														
CPICH_Ec/Io	dB	-11	-13 ~~-14.5~~		-~~13~~14.5	-13	-Inf	-14.0 ~~-15~~		-~~20~~15	-20	-17.5	-20 ~~-15~~		-~~14~~15	-14
Propagation Condition		AWGN														

Note 1 : The DPCH level is controlled by the power control loop
Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior
Note 3: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.6.1.3.4.2 Procedure

1) The RF parameters are set up according to ~~T1~~T0 in table 8.6.1.3.4.
2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 10 seconds from the beginning T0~~1~~, the SS shall switch the power settings from ~~T1 to T2~~T0 to T1 in table 8.6.1.3.5.

6) After a total of 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

~~6~~7) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

~~7~~8) After 10 seconds from the beginning T2, the SS shall switch the power settings from T2 to T4~~3~~.

~~8~~9) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T4~~3~~ shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

~~9~~10) After 10 seconds from the beginning T4~~3~~, the SS shall switch the power settings from T4~~3~~ to T5~~4~~.

~~10~~11) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1B. The measurement reporting delay from the beginning of T5~~4~~ shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

~~11~~12) After 10 seconds, the UE is switched off.

~~12~~13) Repeat steps 1-11 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0
-message authentication code -RRC message sequence number	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity (10.3.7.41)	Intra-frequency measurement Not Present 0 FDD CPICH_Ec/N0
-Reporting quantities for active set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE report criteria -Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event	Not Present Not Present Intra-frequency measurement reporting criteria 2
-Intra-frequency event identity -Triggering condition 2 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status	Event 1A Monitored set cells 3 dB Not Present ~~1.0~~0 0 dB Not Present 0 Not Present 0 ms Not present 0 ms (Note 2) Not Present
-Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis	Event 1B Active set cells~~ and monitored set cells~~ 3 dB Not Present ~~1.0~~0 0 dB

Information Element/Group name	Value/Remark
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL. NOTE 2: Reporting interval = 0 ms means no periodical reporting.	

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.3.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

Table 8.6.1.3.4: Initial test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-9.6~~5~~0	-9.6~~5~~0	-9.6~~5~~0
PCCPCH_Ec/Ior	dB	-11.6~~5~~0	-11.6~~5~~0	-11.6~~5~~0
SCH_Ec/Ior	dB	-11.6~~5~~0	-11.6~~5~~0	-11.6~~5~~0
PICH_Ec/Ior	dB	-14.6~~5~~0	-14.6~~5~~0	-14.6~~5~~0
DPCH_Ec/Ior	dB	-16.6~~5~~0	N/A	N/A
OCNS_Ec/Ior	dB	-1.1~~2~~0	-1.04~~7~~	-1.04~~7~~
$\hat{I}_{or}/I_{oc}$ (Note 1)	dB	5.90	-Inf	-Inf
$\hat{I}_{or}$ ~~(Note 1~~)	dBm	-79.10	-Inf	-Inf
I_{oc}	dBm/ 3.84 MHz	-85		
CPICH_Ec/Io (Note 1)	dB	-10.49	-Inf	-Inf
Propagation Condition		AWGN		
Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.~~Note 1: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.~~				

Table 8.6.1.3.5: Test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1					Cell 2					Cell3				
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
CPICH_Ec/Ior	dB	-9.6~~5~~0					-9.6~~5~~0					-9.6~~5~~0				
PCCPCH_Ec/Ior	dB	-11.6~~5~~0					-11.6~~5~~0					-11.6~~5~~0				
SCH_Ec/Ior	dB	-11.6~~5~~0					-11.6~~5~~0					-11.6~~5~~0				
PICH_Ec/Ior	dB	-14.6~~5~~0					-14.6~~5~~0					-14.6~~5~~0				
DPCH_Ec/Ior	dB	Note 1					N/A	Note 1				N/A				
OCNS_Ec/Ior	dB	Note 2					-1.04~~7~~	Note 2				-1.04~~7~~				
$\hat{I}_{or}/I_{oc}$ (Note 3)	dB	14.6	28.50		14.5	28.5	-Inf	27.50		14.0	21.50	8.05	21.50		14.0	27.5
$\hat{E}_{or}$ ~~(Note 1)~~	dBm	-70.40	-56.50		-70.50	-56.50	-Inf	-57.50		-71.00	-63.50	-76.90	-63.50		-71.00	-57.50
I_{oc}	dBm/3.84 MHz	-85														
CPICH_Ec/Io (Note 3)	dB	-10.50	-12.50		-14.0	-12.50	-Inf	-13.50		-14.50	-19.50	-17.0	-19.50		-14.50	-13.50
Propagation Condition		AWGN														

Note 1 : The DPCH level is controlled by the power control loop
Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior
Note 3: These parameters are not directly settable, but are derived by calculation from the settable parameters.~~The nominal Êor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured~~.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.1.3A Event triggered reporting of two detectable neighbours in AWGN propagation condition (Rel-4 and later)

8.6.1.3A.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the Rel-4 and later FDD UE.

8.6.1.3A.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.3.

8.6.1.3A.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.3A.4 Method of test

8.6.1.3A.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The initial test parameters are given in table 8.6.1.3A.4.

Table 8.6.1.3A.1: Cell specific initial test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	5.87~~0~~	-Inf	-Inf
$\hat{I}_{or}$ (Note 1)	dBm	-79.13	-Inf	-Inf
I_{oc}	dBm/ 3.84 MHz	-85		
CPICH_Ec/Io	dB	-11	-Inf	-Inf
Propagation Condition	AWGN			
Note 1: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.				

The test parameters are given in table 8.6.1.3A2 and 8.6.1.3A.5. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used and the periodical reporting of the events is not applied. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. In the initial condition before the time T1 only Cell1 is active.

Table 8.6.1.3A.2: General test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	Ms	0	
Filter coefficient		0	
Monitored cell list size		32	NOTE: See Annex I for cell information.
T1	S	10	
T2	S	10	
T3	S	10	
T4	S	10	

Table 8.6.1.3A.3: Cell specific test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2				Cell3			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
CPICH_Ec/Ior	dB	-10				-10				-10			
PCCPCH_Ec/Ior	dB	-12				-12				-12			
SCH_Ec/Ior	dB	-12				-12				-12			
PICH_Ec/Ior	dB	-15				-15				-15			
DPCH_Ec/Ior	dB	-17				N/A				N/A			
OCNS_Ec/Ior	dB	-1.049				-0.941				-0.941			
$\hat{I}_{or}/I_{oc}$	dB	14.55	28.51	14.45	28.51	-Inf	27.51	13.95	21.51	8.05	21.51	13.95	27.51
$\hat{I}_{or}$ (Note 1)	dBm	-70.45	-56.49	-70.55	-56.49	-Inf	-57.49	-71.05	-63.49	-76.95	-63.49	-71.05	-57.49
I_{oc}	dBm/3.84 MHz	-85											
CPICH_Ec/Io	dB	-11	-13	-14.5	-13	-Inf	-14.0	-15	-20	-17.5	-20	-15	-14
Propagation Condition		AWGN											
Note 1: The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.													

8.6.1.3A.4.2 Procedure

1) The RF parameters are set up according to T0 in table 8.6.1.3A.4.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 10 seconds from the beginning T0, the SS shall switch the power settings from T0 to T1 in 8.6.1.3A.5.

6) After a total of 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

7) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

8) After 10 seconds from the beginning T2, the SS shall switch the power settings from T2 to T3.

9) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

10) After 10 seconds from the beginning T3, the SS shall switch the power settings from T3 to T4.

11) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1B. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

12) After 10 seconds, the UE is switched off.

13) Repeat steps 1-11 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	2
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB

Information Element/Group name	Value/Remark
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.	
NOTE 2: Reporting interval = 0 ms means no periodical reporting.	

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.3A.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

Table 8.6.1.3A.4: Initial test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	**Unit**	**Cell 1**	**Cell 2**	**Cell3**
		T0	**T0**	**T0**
CPICH_Ec/Ior	dB	-9.60	-9.60	-9.60
PCCPCH_Ec/Ior	dB	-11.60	-11.60	-11.60
SCH_Ec/Ior	dB	-11.60	-11.60	-11.60
PICH_Ec/Ior	dB	-14.60	-14.60	-14.60
DPCH_Ec/Ior	dB	-16.60	N/A	N/A
OCNS_Ec/Ior	dB	-1.17	-1.04	-1.04
$\hat{I}_{or}/I_{oc}$ *(Note 1)*	dB	5.90	-Inf	-Inf
$\hat{I}_{or}$ ~~(Note 1~~)	dBm	-79.10	-Inf	-Inf
I_{oc}	dBm/ 3.84 MHz	-85		
CPICH_Ec/Io *(Note 1)*	dB	-10.59	-Inf	-Inf
Propagation Condition	AWGN			
Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.~~The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured~~.				

Table 8.6.1.3A.5: Test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2				Cell3			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
CPICH_Ec/Ior	dB	-9.60				-9.60				-9.60			
PCCPCH_Ec/Ior	dB	-11.60				-11.60				-11.60			
SCH_Ec/Ior	dB	-11.60				-11.60				-11.60			
PICH_Ec/Ior	dB	-14.60				-14.60				-14.60			
DPCH_Ec/Ior	dB	-16.60				N/A				N/A			
OCNS_Ec/Ior	dB	-1.17				-1.04				-1.04			
$\hat{I}_{or}/I_{oc}$ (Note 1)	dB	14.60	28.50	14.50	28.50	-Inf	27.50	14.0	21.50	8.10	21.50	14.0	27.50
$\hat{I}_{or}$ ~~(Note 1)~~	dBm	-70.40	-56.50	-70.50	-56.50	-Inf	-57.50	-71.00	-63.50	-76.90	-63.50	-71.00	-57.50
I_{oc}	dBm/3.84 MHz	-85											
CPICH_Ec/Io (Note 1)	dB	-10.60	-12.60	-14.10	-12.60	-Inf	-13.60	-14.60	-19.60	-17.10	-19.60	-14.60	-13.60
Propagation Condition		AWGN											
Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.~~The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured~~.													

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

Annex F (normative): General test conditions and declarations

The requirements of this clause apply to all applicable tests in the present document.

Many of the tests in the present document measure a parameter relative to a value that is not fully specified in the UE specifications. For these tests, the Minimum Requirement is determined relative to a nominal value specified by the manufacturer.

When specified in a test, the manufacturer shall declare the nominal value of a parameter, or whether an option is supported.

In all the relevant clauses in this clause all Bit Error Ratio (BER), Block Error Ratio (BLER), False transmit format Detection Ratio **(**FDR) measurements shall be carried out according to the general rules for statistical testing in clause F.6.

F.1 Acceptable uncertainty of Test System

The maximum acceptable uncertainty of the Test System is specified below for each test, where appropriate. The Test System shall enable the stimulus signals in the test case to be adjusted to within the specified range, and the equipment under test to be measured with an uncertainty not exceeding the specified values. All ranges and uncertainties are absolute values, and are valid for a confidence level of 95 %, unless otherwise stated.

A confidence level of 95 % is the measurement uncertainty tolerance interval for a specific measurement that contains 95 % of the performance of a population of test equipment.

For RF tests it should be noted that the uncertainties in clause F.1 apply to the Test System operating into a nominal 50 ohm load and do not include system effects due to mismatch between the DUT and the Test System.

F.1.5 Requirements for support of RRM

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

<table>
<tr><th>Clause</th><th>Maximum Test System Uncertainty</th><th>Derivation of Test System Uncertainty</th></tr>
<tr><td>8.2 Idle Mode Tasks</td><td></td><td></td></tr>
<tr><td>8.2.2 Cell Re-Selection</td><td></td><td></td></tr>
<tr><td rowspan="2">8.2.2.1 Scenario 1: Single carrier case</td><td>During T1 and T2:
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{oc} ±1.0 dB

During T1:
I_{or} (2) ±0.7 dB

I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB

During T2:
I_{or} (1) ±0.7 dB

I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB</td><td></td></tr>
<tr><td colspan="2">Assumptions:
a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2.

b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other.

c) The relative uncertainties for Ior(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).

d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).

e) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).

f) The absolute uncertainty of Ior(2) at T1 and the relative uncertainty of Ior(1, 3, 4, 5, 6), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(1) at T2 and the relative uncertainty of Ior(2, 3, 4, 5, 6), are uncorrelated to each other.

An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].</td></tr>
</table>

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2.2.2 Scenario 2: Multi carrier case	Channel 1 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (1) ±1.0 dB Channel 1 during T1: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 1 during T2: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 2 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (2) ±1.0 dB Channel 2 during T1: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB Channel 2 during T2: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
	Assumptions: a) to e): Same as for the one-frequency test 8.2.2.1. f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(2) and the relative uncertainty of Ior(5, 6), are uncorrelated to each other. g) The absolute uncertainties for Ior(1) and Ior(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). h) The absolute uncertainties for Ioc(1) and Ioc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	
8.2.3 UTRAN to GSM Cell Re-Selection		

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc/RXLEV based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB.
8.2.3.2 Scenario 2: Only UTRA level changed	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.3.1
8.2.4 FDD/TDD cell re-selection	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.3 UTRAN Connected Mode Mobility		
8.3.1 FDD/FDD Soft Handover	<u>During T1 and T2/T3/T4/T5/T6:</u> $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB Relative delay of paths received from cell 2 with respect to cell 1: ±0.5 chips <u>During T1:</u> Already covered above <u>During T2/T3/T4/T5/T6:</u> I_{or} (2) relative to I_{or} (1) ±0.3 dB	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2), are uncorrelated to each other. An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	
8.3.2 FDD/FDD Hard Handover		
8.3.2.1 Handover to intra-frequency cell	During T1 and T2 / T3: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB During T1: Already covered above During T2 / T3: I_{or} (2) relative to I_{or} (1) ±0.3 dB	
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2), are uncorrelated to each other. An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	

<table>
<tr><th>Clause</th><th>Maximum Test System Uncertainty</th><th>Derivation of Test System Uncertainty</th></tr>
<tr><td rowspan="2">8.3.2.2 Handover to inter-frequency cell</td><td><u>Channel 1 during T1 and T2 / T3:</u>
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{or} (1) ±0.7 dB
I_{oc} (1) ±1.0 dB

<u>Channel 2 during T1 and T2 / T3:</u>
I_{oc} (2) ±1.0 dB

<u>Channel 2 during T1:</u>
Already covered above

<u>Channel 2 during T2 / T3:</u>
$\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB
I_{or} (2) ±0.7 dB</td><td></td></tr>
<tr><td colspan="2">Assumptions:
a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2.
b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other.
c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
d) The uncertainty for Ioc(n) and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
e) The absolute uncertainties for Ior(1) and Ior(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
f) The absolute uncertainties for Ioc(1) and Ioc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).
An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].</td></tr>
<tr><td>8.3.3 FDD/TDD Handover</td><td>TBD</td><td></td></tr>
<tr><td>8.3.4 Inter-system Handover from UTRAN FDD to GSM</td><td>TBD</td><td></td></tr>
<tr><td>8.3.5 Cell Re-selection in CELL_FACH</td><td></td><td></td></tr>
</table>

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5.1 One frequency present in the neighbour list	<u>During T1 and T2:</u> $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} ±1.0 dB <u>During T1:</u> I_{or} (2) ±0.7 dB I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB <u>During T2:</u> I_{or} (1) ±0.7 dB I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB	
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) The relative uncertainties for Ior(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). f) The absolute uncertainty of Ior(2) at T1 and the relative uncertainty of Ior(1, 3, 4, 5, 6), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(1) at T2 and the relative uncertainty of Ior(2, 3, 4, 5, 6), are uncorrelated to each other. An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5.2 Two frequencies present in the neighbour list	Channel 1 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (1) ±1.0 dB Channel 1 during T1: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 1 during T2: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 2 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (2) ±1.0 dB Channel 2 during T1: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB Channel 2 during T2: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
	Assumptions: a) to e): Same as for the one-frequency test 8.3.5.1. f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(2) and the relative uncertainty of Ior(5, 6), are uncorrelated to each other. g) The absolute uncertainties for Ior(1) and Ior(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). h) The absolute uncertainties for Ioc(1) and Ioc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5.3 Cell Re-selection to GSM	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc/RXLEV based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB.
8.3.6 Cell Re-selection in CELL_PCH		
8.3.6.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.3.7 Cell Re-selection in URA_PCH		
8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control		
8.4.1 RRC Re-establishment delay	Settings. $\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the CPICH_Ec/Ior ratio. The absolute error of the AWGN is specified as 1.0 dB

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.4.2 Random Access	Settings. $\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{AICH\_E_c}{I_{or}}$ ±0.1 dB Measurements: Power difference. ± 1dB Maximum Power: same as 5.5.2	0.1 dB uncertainty in AICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the AICH_Ec/Ior ratio. The absolute error of the AWGN is specified as 1.0 dB Power difference: Assume symmetric meas error ±1.0 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error. Maximum Power: Assume asymmetric meas error -1.0 dB / 0.7 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error, and +0.7 dB for upper limit
8.4.3 Transport format combination selection in UE	$\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in DPCH_Ec ratio
8.5 Timing and Signalling Characteristics		
8.5.1 UE Transmit Timing	I_{or} ±1.0 dB I_{or1}/I_{or2} ±0.3 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in DPCH_Ec ratio 0.3 dB uncertainty in Ior1/Ior2 based on power meter measurement after the combiner The absolute error of the Ior is specified as 1.0 dB.
8.6 UE Measurements Procedures		
8.6.1 FDD intra frequency measurements		
8.6.1.1 Event triggered reporting in AWGN propagation conditions (R99)	<u>During T1/T4 and T2/T3:</u> $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB <u>During T1/T4 only:</u> Already covered above <u>During T2/T3 only:</u> I_{or} (2) relative to I_{or} (1) ±0.3 dB	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6.1.1 A Event triggered reporting in AWGN propagation conditions (Rel-4 and later)	<u>During T1/T3 and T2:</u> $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB <u>During T1/T3 only:</u> Already covered above <u>During T2 only:</u> I_{or} (2) relative to I_{or} (1) ±0.3 dB	
8.6.1.1 and 8.6.1.1A	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) The uncertainty for Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2), are uncorrelated to each other. An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)	<u>During T0 to T6:</u> $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB <u>During T1/T2, T3 and T6:</u> I_{or} (3) relative to I_{or} (1) ±0.3 dB <u>During T3, T4/T5 and T6:</u> I_{or} (2) relative to I_{or} (1) ±0.3 dB	
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [4], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) The relative uncertainties for Ior(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The uncertainty for Ioc and Ior(1) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2, 3), are uncorrelated to each other.	
8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)	TBD	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition (R99)	During T0 to T5: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB During T1, T2/T3, T4 and T5: I_{or} (3) relative to I_{or} (1) ±0.3 dB During T2/T3, T4 and T5: I_{or} (2) relative to I_{or} (1) ±0.3 dB~~TBD~~	
8.6.1.3A Event triggered reporting of two detectable neighbours in AWGN propagation condition (Rel-4 and later)	During T0 to T4: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB During T1, T2, T3 and T4: I_{or} (3) relative to I_{or} (1) ±0.3 dB During T2, T3 and T4: I_{or} (2) relative to I_{or} (1) ±0.3 dB	
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [4], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) The relative uncertainties for Ior(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The uncertainty for Ioc and Ior(1) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(2, 3), are uncorrelated to each other. An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is recorded in 3GPP TR 34 902 [24].	
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD	
8.6.2 FDD inter frequency measurements		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD	
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6.3 TDD measurements		
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD	
8.6.4 GSM Measurement	TBD	
8.7 Measurements Performance Requirements		
8.7.1 CPICH RSCP		
8.7.1.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.1
8.7.1.2 Inter frequency measurement accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.7.2 CPICH Ec/Io		
8.7.2.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.1
8.7.2.2 Inter frequency measurement accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.7.3 UTRA Carrier RSSI	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc1/Ioc2 based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.3A GSM Carrier RSSI	TBD	
8.7.3C UE Transmitted power	Mean power measurement □0,7 dB	Downlink parameters are unimportant.
8.7.4 SFN-CFN observed time difference		
8.7.4.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Actual SFN-CFN observed time difference: ±0.5 chips	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.7.4.2 Inter frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Actual SFN-CFN observed time difference: ±0.5 chips	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.5.1 SFN-SFN observed time difference type 1	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Actual SFN-SFN observed time difference type 1: ±0.5 chips	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.6 UE Rx-Tx time difference	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Rx-Tx Timing Accuracy ±0.5 chip	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB.
8.7.8 P-CCPCH RSCP	TBD	

F.1.6 Performance requirement (HSDPA)

Table F.1.6: Maximum Test System Uncertainty for Performance Requirements (HSDPA)

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
9.2.1 Single Link Performance	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in Ec/Ior ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN Ioc is not important for any tests in clause 9 but is specified as 1.0 dB.
9.3.1 AWGN propagation conditions	No test system uncertainty applied	

F.2 Test Tolerances (This clause is informative)

The Test Tolerances defined in this clause have been used to relax the Minimum Requirements in the present document to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.).

F.2.1 Transmitter

Table F.2.1: Test Tolerances for transmitter tests.

Clause	Test Tolerance
5.2 Maximum Output Power	0.7 dB
5.3 Frequency error	10 Hz
5.4.1 Open loop power control in uplink	1.0 dB
5.4.2 Inner loop power control in the uplink	0.1 dB (1 dB and 0 dB range) 0.15 dB (2 dB range) 0.2 dB (3 dB range 0.3 dB (> 3 dB range))
5.4.3 Minimum Output Power	1.0 dB
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	0.4 dB
5.4.4 Out-of-synchronisation handling of output power: transmit ON/OFF time	0 ms

Clause	Test Tolerance
5.5.1 Transmit OFF power	1.0 dB
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0.7 dB / -1.0 dB Off power TT [ ] dB
5.6 Change of TFC: power control step size	0.3 dB
5.7 Power setting in uplink compressed mode:-UE output power	See subset of 5.4.2
5.8 Occupied Bandwidth	0 kHz
5.9 Spectrum emission mask	1.5 dB (0 dB for additional requirements for Band II)
5.10 ACLR	0.8 dB for ratio 0.0 dB for absolute power
5.11 Spurious emissions	0 dB
5.12 Transmit Intermodulation	0 dB
5.13.1 Transmit modulation: EVM	0%
5.13.2 Transmit modulation: peak code domain error	1.0 dB
5.13.4 PRACH preamble quality (EVM)	0%
5.13.4 PRACH preamble quality (Frequency error)	10 Hz

F.2.2 Receiver

Table F.2.2: Test Tolerances for receiver tests.

Clause	Test Tolerance
6.2 Reference sensitivity level	0.7 dB
6.3 Maximum input level:	0.7 dB for Ior
6.4 Adjacent channel selectivity	0 dB
6.5 Blocking characteristics	0 dB
6.6 Spurious Response	0 dB
6.7 Intermodulation Characteristics	0 dB
6.8 Spurious emissions	0 dB

F.2.3 Performance requirements

Table F.2.3: Test Tolerances for Performance Requirements.

Clause	Test Tolerance
7.2 Demodulation in Static Propagation Condition	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.3 Demodulation of DCH in multipath Fading Propagation conditions	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.4 Demodulation of DCH in Moving Propagation conditions	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.5 Demodulation of DCH in Birth-Death Propagation conditions	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.6.1 Demodulation of DCH in open loop Transmit diversity mode	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.7.1 Demodulation in inter-cell soft Handover conditions	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.7.2 Combining of TPC commands Test 1	0 dB for Ior1, Ior2 0.1 dB for DPCH_Ec/Ior
7.7.2 Combining of TPC commands Test 2	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior

Clause	Test Tolerance
7.8.1 Power control in downlink constant BLER target	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.8.2, Power control in downlink initial convergence	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.8.3, Power control in downlink: wind up effects	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.9 Downlink compressed mode	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.10 Blind transport format detection Tests 1, 2, 3	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.10 Blind transport format detection Tests 4, 5, 6	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.11 Demodulation of paging channel (PCH)	TBD
7.12 Detection of acquisition indicator (AI)	TBD

F.2.4 Requirements for support of RRM

Table F.2.4: Test Tolerances for Radio Resource Management Tests

Clause	Test Tolerance
8.2 Idle Mode Tasks	
8.2.2 Cell Re-Selection	
8.2.2.1 Scenario 1: Single carrier case	During T1 and T2: +0.60 dB for all Cell 1 and 2 Ec/Ior ratios -0.50 dB for all Cell 3, 4 ,5, 6 Ec/Ior ratios +0.03 dB for Ior(3, 4, 5, 6) During T1: -0.27 dB for Ior(1) +0.13 dB for Ior(2) During T2: +0.13 dB for Ior(1) -0.27 dB for Ior(2)
8.2.2.2 Scenario 2: Multi carrier case	Channel 1 during T1 and T2: +0.70 dB for all Cell 1 Ec/Ior ratios -0.80 dB for all Cell 3 and 4 Ec/Ior ratios Channel 1 during T1: -0.01 dB for Ior(1) -0.01 dB for Ior(3, 4) No change for Ioc(1) Channel 1 during T2: +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.80 dB for Ioc(1) Channel 2 during T1 and T2: +0.70 dB for all Cell 2 Ec/Ior ratios -0.80 dB for all Cell 5 and 6 Ec/Ior ratios Channel 2 during T1: +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.80 dB for Ioc(2) Channel 2 during T2: -0.01 dB for Ior(2) -0.01 dB for Ior(5, 6) No change for Ioc(2)
8.2.3 UTRAN to GSM Cell Re-Selection	

Clause	Test Tolerance
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.2.3.2 Scenario 2: Only UTRA level changed	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.2.4 FDD/TDD cell re-selection	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc1/Ioc2
8.3 UTRAN Connected Mode Mobility	
8.3.1 FDD/FDD Soft Handover	During T1 and T2/T3/T4/T5/T6: +0.70 dB for all Cell 1 Ec/Ior ratios Relative delay: {ñ147.5 Ö +147.5} chips During T1: Already covered above During T2/T3/T4/T5/T6: +0.70 dB for all Cell 2 Ec/Ior ratios
8.3.2 FDD/FDD Hard Handover	
8.3.2.1 Handover to intra-frequency cell	During T1 and T2 / T3: +0.70 dB for all Cell 1 Ec/Ior ratios During T1: Already covered above During T2 / T3: +0.70 dB for all Cell 2 Ec/Ior ratios
8.3.2.2 Handover to inter-frequency cell	Channel 1 during T1 and T2 / T3: +0.80 dB for all Cell 1 Ec/Ior ratios Channel 2 during T1: Not applicable Channel 2 during T2 / T3: +0.80 dB for all Cell 2 Ec/Ior ratios
8.3.3 FDD/TDD Handover	TBD
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD
8.3.5 Cell Re-selection in CELL_FACH	
8.3.5.1 One frequency present in the neighbour list	<u>During T1 and T2:</u> +0.60 dB for all Cell 1 and 2 Ec/Ior ratios -0.50 dB for all Cell 3, 4 ,5, 6 Ec/Ior ratios +0.03 dB for Ior(3, 4, 5, 6) <u>During T1:</u> -0.27 dB for Ior(1) +0.13 dB for Ior(2) <u>During T2:</u> +0.13 dB for Ior(1) -0.27 dB for Ior(2)

Clause	Test Tolerance
8.3.5.2 Two frequencies present in the neighbour list	<u>Channel 1 during T1 and T2:</u> +0.60 dB for all Cell 1 Ec/Ior ratios -0.70 dB for all Cell 3 and 4 Ec/Ior ratios <u>Channel 1 during T1:</u> +0.05 dB for Ior(1) +0.05 dB for Ior(3, 4) No change for Ioc(1) <u>Channel 1 during T2:</u> +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.60 dB for Ioc(1) <u>Channel 2 during T1 and T2:</u> +0.60 dB for all Cell 2 Ec/Ior ratios -0.70 dB for all Cell 5 and 6 Ec/Ior ratios <u>Channel 2 during T1:</u> +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.60 dB for Ioc(2) <u>Channel 2 during T2:</u> +0.05 dB for Ior(2) +0.05 dB for Ior(5, 6) No change for Ioc(2)
8.3.5.3 Cell Re-selection to GSM	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.3.6 Cell Re-selection in CELL_PCH	
8.3.6.1 One frequency present in the neighbour list	Same as 8.2.2.1
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2
8.3.7 Cell Re-selection in URA_PCH	
8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2
8.4 RRC Connection Control	
8.4.1 RRC Re-establishment delay	0 dB for $\hat{I}_{or}/I_{oc}$ 0 dB for any_Ec/Ior Zero TT is applied, as level settings are not critical with respect to the outcome of the test.
8.4.2 Random Access	Settings: 0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for AICH_Ec/Ior Measurements: Power difference: ± 1dB Maximum Power: -1dB / +0.7dB
8.4.3 Transport format combination selection in UE	0 dB for DPCH_Ec/Ior
8.5 Timing and Signalling Characteristics	
8.5.1 UE Transmit Timing	TBD
8.6 UE Measurements Procedures	
8.6.1 FDD intra frequency measurements	

Clause	Test Tolerance
8.6.1.1 Event triggered reporting in AWGN propagation conditions (R99)	During T1/T4 and T2/T3: +0.70 dB for all Cell 1 Ec/Ior ratios During T1/T4 only: Already covered above During T2/T3 only: +0.70 dB for all Cell 2 Ec/Ior ratios
8.6.1.1 A Event triggered reporting in AWGN propagation conditions (Rel-4 and later)	During T1/T3 and T2: +0.70 dB for all Cell 1 Ec/Ior ratios During T1/T3 only: Already covered above During T2 only: +0.70 dB for all Cell 2 Ec/Ior ratios
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)	During T0 to T6: +0.70 dB for all Cell 1 Ec/Ior ratios +0.70 dB for all Cell 2 Ec/Ior ratios +0.70 dB for all Cell 3 Ec/Ior ratiosTBD
8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)	TBD
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition (R99)	During T0 to T5: +0.40 dB for all Cell 1 Ec/Ior ratios +0.40 dB for all Cell 2 Ec/Ior ratios +0.40 dB for all Cell 3 Ec/Ior ratios ~~TBD~~
8.6.1.3A Event triggered reporting of two detectable neighbours in AWGN propagation condition (Rel-4 and later)	During T0 to T4: +0.40 dB for all Cell 1 Ec/Ior ratios +0.40 dB for all Cell 2 Ec/Ior ratios +0.40 dB for all Cell 3 Ec/Ior ratios
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD
8.6.2 FDD inter frequency measurements	
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD
8.6.3 TDD measurements	
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD
8.7 Measurements Performance Requirements	TBD
8.7.1 CPICH RSCP	
8.7.1.1 Intra frequency measurements accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 1.0 dB for Ioc
8.7.1.2 Inter frequency measurement accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc1/Ioc2 1.0 dB for Ioc
8.7.2 CPICH Ec/Io	
8.7.2.1 Intra frequency measurements accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.7.2.2 Inter frequency measurement accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.7.3 UTRA Carrier RSSI	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc
8.7.3A GSM Carrier RSSI	TBD
8.7.3B Transport channel BLER	TBD

Clause	Test Tolerance
8.7.3C UE Transmitted power	0.7 dB for mean power measurement by test system
8.7.4 SFN-CFN observed time difference	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc ±0.5 chips for the actual SFN-CFN observed time difference
8.7.5.1 SFN-SFN observed time difference type 1	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc ±0.5 chips for the actual SFN-SFN observed time difference type 1
8.7.6 UE Rx-Tx time difference	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc 0.5 chip for Rx-Tx Timing Accuracy
8.7.7 Observed time difference to GSM cell	TBD
8.7.8 P-CCPCH RSCP	TBD

F.2.5 Performance requirements (HSDPA)

Table F.2.5: Test Tolerances for Performance Requirements (HSDPA).

Clause	Test Tolerance
9.2.1 Single Link Performance	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for Ec/Ior
9.4 HS-SCCH Detection Performance	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for P-CPICH_Ec/Ior and HS-SCCH_Ec/Ior

F.3 Interpretation of measurement results

The measurement results returned by the Test System are compared ñ without any modification ñ against the Test Requirements as defined by the shared risk principle.

The Shared Risk principle is defined in ETR 273-1-2 clause 6.5.

The actual measurement uncertainty of the Test System for the measurement of each parameter shall be included in the test report.

The recorded value for the Test System uncertainty shall be, for each measurement, equal to or lower than the appropriate figure in clause F.1 of the present document.

If the Test System for a test is known to have a measurement uncertainty greater than that specified in clause F.1, it is still permitted to use this apparatus provided that an adjustment is made value as follows.

Any additional uncertainty in the Test System over and above that specified in clause F.1 shall be used to tighten the Test Requirement ñ making the test harder to pass. (For some tests e.g. receiver tests, this may require modification of stimulus signals). This procedure will ensure that a Test System not compliant with clause F.1does not increase the chance of passing a device under test where that device would otherwise have failed the test if a Test System compliant with clause F.1 had been used.

For some of the more complex tests e.g. RRM, deriving the overall test system uncertainty is not straightforward. In such cases the derivation is given in TR 34.902 [24] rather than in subclause F.1. If it is deemed necessary to apply the additional test system uncertainty rules to these tests, the formula for deriving the new overall uncertainty from any excess fundamental test system uncertainties, shall use the formulas provided in 34.902.

F.4 Derivation of Test Requirements (This clause is informative)

The Test Requirements in the present document have been calculated by relaxing the Minimum Requirements of the core specification using the Test Tolerances defined in clause F.2. When the Test Tolerance is zero, the Test Requirement will be the same as the Minimum Requirement. When the Test Tolerance is non-zero, the Test Requirements will differ from the Minimum Requirements, and the formula used for this relaxation is given in table F.4.

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2 Idle Mode Tasks			
8.2.2 Cell Re-Selection			
8.2.2.1 Scenario 1: Single carrier case	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	<u>During T1 and T2:</u> Cells 1 and 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Cells 3, 4, 5, 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Ior(3, 4, 5, 6) = -69.73 dBm	<u>During T1 and T2:</u> +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for Ior(3, 4, 5, 6)	<u>During T1 and T2:</u> Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ior(3, 4, 5, 6) + TT
	<u>During T1:</u> Ior(1) = -62.73 dBm Ior(2) = -59.73 dBm	<u>During T1:</u> -0.27 dB for Ior(1) +0.13 dB for Ior(2)	<u>During T1:</u> Ior(1) + TT Ior(2) + TT
	<u>During T2:</u> Ior(1) = -59.73 dBm Ior(2) = -62.73 dBm	<u>During T2:</u> +0.13 dB for Ior(1) -0.27 dB for Ior(2)	<u>During T2:</u> Ior(1) + TT Ior(2) + TT
8.2.2.2 Scenario 2: Multi carrier case	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	<u>Channel 1 during T1 and T2:</u> Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Cells 3 and 4: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	<u>Channel 1 during T1 and T2:</u> +0.70 dB +0.70 dB +0.70 dB +0.70 dB -0.80 dB -0.80 dB -0.80 dB -0.80 dB	<u>Channel 1 during T1 and T2:</u> Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	<u>Channel 1 during T1:</u> Ior(1) = -73.39 dBm Ior(3, 4) = -77.39 dBm Ioc(1) = -70.00 dBm	<u>Channel 1 during T1:</u> -0.01 dB for Ior(1) -0.01 dB for Ior(3,4) 0.00 dB for Ioc(1)	<u>Channel 1 during T1:</u> Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 1 during T2: Ior(1) = -67.75 dBm Ior(3, 4) = -74.75 dBm Ioc(1) = -70.00 dBm	Channel 1 during T2: +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.80 dB for Ioc(1)	Channel 1 during T2: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT
	Channel 2 during T1 and T2: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Cells 5 and 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	Channel 2 during T1 and T2: +0.70 dB +0.70 dB +0.70 dB +0.70 dB -0.80 dB -0.80 dB -0.80 dB -0.80 dB	Channel 2 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 2 during T1: Ior(2) = -67.75 dBm Ior(5, 6) = -74.75 dBm Ioc(2) = -70.00 dBm	Channel 2 during T1: +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.80 dB for Ioc(2)	Channel 2 during T1: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
	Channel 2 during T2: Ior(2) = -73.39 dBm Ior(5, 6) = -77.39 dBm Ioc(2) = -70.00 dBm	Channel 2 during T2: -0.01 dB for Ior(2) -0.01 dB for Ior(5,6) 0.00 dB for Ioc(2)	Channel 2 during T2: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
8.2.3 UTRAN to GSM Cell Re-Selection			
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 0 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = - 5 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ - TT Ior/Ioc = -5.3 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2.3.2 Scenario 2: Only UTRA level changed	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 20 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT (Ioc/Rxlev)$_{\text{test requirement}}$ = (Ioc/Rxlev)$_{\text{minimum requirement}}$ + TT Ior/Ioc = 20.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = -9 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT (Ioc/Rxlev)$_{\text{test requirement}}$ = (Ioc/Rxlev)$_{\text{minimum requirement}}$ - TT Ior/Ioc = -9.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -10.1 dB:
8.2.4 FDD/TDD cell re-selection	TBD		
8.3 UTRAN Connected Mode Mobility	TBD		
8.3.1 FDD/FDD Soft Handover	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	<u>During T1 and T2/T3/T4/T5/T6:</u> Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Relative delay of paths received from cell 2 with respect to cell 1 = {-148 Ö 148} chips	<u>During T1 and T2/T3/T4/T5/T6:</u> +0.70 dB +0.70 dB +0.70 dB +0.70 dB 0.5 chips	<u>During T1 and T2/T3/T4/T5/T6:</u> Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT {-148+TT Ö 148-TT} chips
	<u>During T1:</u> Already covered above	<u>During T1:</u> Covered above	<u>During T1:</u> Already covered above
	<u>During T2/T3/T4/T5/T6:</u> Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	<u>During T2/T3/T4/T5/T6:</u> +0.70 dB +0.70 dB +0.70 dB +0.70 dB	<u>During T2/T3/T4/T5/T6:</u> Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.3.2 FDD/FDD Hard Handover			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.2.1 Handover to intra-frequency cell	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 and T2 / T3: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1 / T2 / T3: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T1 and T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	During T1: Already covered above	During T1: Covered above	During T1: Already covered above
	During T2 / T3: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T2 / T3: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.3.2.2 Handover to inter-frequency cell	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	Channel 1 during T1 and T2 / T3: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	Channel 1 during T1 and T2 / T3: +0.80 dB +0.80 dB +0.80 dB +0.80 dB	Channel 1 during T1 and T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 2 during T1: Not applicable	Channel 2 during T1: Not applicable	Channel 2 during T1: Not applicable
	Channel 2 during T2 / T3: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	Channel 2 during T2 / T3: +0.80 dB +0.80 dB +0.80 dB +0.80 dB	Channel 2 during T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.3.3 FDD/TDD Handover	TBD		
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD		
8.3.5 Cell Re-selection in CELL_FACH			
8.3.5.1 One frequency present in the neighbour list	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	During T1 and T2: Cells 1 and 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 3, 4, 5, 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Ior(3, 4, 5, 6) = -69.73 dBm	During T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for Ior(3, 4, 5, 6)	During T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ior(3, 4, 5, 6) + TT
	During T1: Ior(1) = -62.73 dBm Ior(2) = -59.73 dBm	During T1: -0.27 dB for Ior(1) +0.13 dB for Ior(2)	During T1: Ior(1) + TT Ior(2) + TT
	During T2: Ior(1) = -59.73 dBm Ior(2) = -62.73 dBm	During T2: +0.13 dB for Ior(1) -0.27 dB for Ior(2)	During T2: Ior(1) + TT Ior(2) + TT
8.3.5.2 Two frequencies present in the neighbour list	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	Channel 1 during T1 and T2: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 3 and 4: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB	Channel 1 during T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Channel 1 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 1 during T1: Ior(1) = -71.85 dBm Ior(3, 4) = -76.85 dBm Ioc(1) = -70.00 dBm	Channel 1 during T1: +0.05 dB for Ior(1) +0.05 dB for Ior(3,4) 0.00 dB for Ioc(1)	Channel 1 during T1: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT
	Channel 1 during T2: Ior(1) = -67.75 dBm Ior(3, 4) = -74.75 dBm Ioc(1) = -70.00 dBm	Channel 1 during T2: +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.60 dB for Ioc(1)	Channel 1 during T2: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 2 during T1 and T2: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 5 and 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB	Channel 2 during T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Channel 2 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 2 during T1: Ior(2) = -67.75 dBm Ior(5, 6) = -74.75 dBm Ioc(2) = -70.00 dBm	Channel 2 during T1: +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.60 dB for Ioc(2)	Channel 2 during T1: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
	Channel 2 during T2: Ior(2) = -71.85 dBm Ior(5, 6) = -76.85 dBm Ioc(2) = -70.00 dBm	Channel 2 during T2: +0.05 dB for Ior(2) +0.05 dB for Ior(5,6) 0.00 dB for Ioc(2)	Channel 2 during T2: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
8.3.5.3 Cell Re-selection to GSM	During T1: $\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 0 dB Ioc/RXLEV = 20	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	$\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB: Ioc/RXLEV = 20.3
	During T2: $\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = - 5 dB Ioc/RXLEV = 5	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	$\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ - TT Ior/Ioc = -5.3 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB: Ioc/RXLEV = 4.7

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.6 Cell Re-selection in CELL_PCH			
8.3.6.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 10.27 dB Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ior/Ioc = 10.57 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 2.2 dB Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = 2.5 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.3.7 Cell Re-selection in URA_PCH			
8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control			
8.4.1 RRC Re-establishment delay	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.4.1.1 Test 1	Cell 1, T1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB DCH_Ec/Ior = -17 dB Ior/Ioc = 2.39 dB Cell 1, T2: Ior/Ioc = -infinity Cell 2, T1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Ior/Ioc = 4.39 dB Cell 2, T2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Ior/Ioc = 0.02 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc	Level settings in either direction are not critical with respect to the outcome of the test.
8.4.1.2 Test 2	Cell 1, T1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB DCH_Ec/Ior = -17 dB Ior/Ioc = -3.35 dB Cell 1, T2: Ior/Ioc = -infinity Cell 2, T1: Ior/Ioc = -infinity Cell 2, T2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Ior/Ioc = 0.02 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc	Level settings in either direction are not critical with respect to the outcome of the test.
8.4.2 Random Access	RACH power difference nominal 3dB ± 2dB UE setting uncertainty	Measurement TT:Power difference ± 1dBMaximum Power-1dB / +0.7dB	Test parameter settings unchanged.Power measurement:Upper limit +TT Lower limit -TT
8.4.3 Transport format combination selection in UE	DL Power control is ON so DPCH_Ec/Ior depends on TPC commands sent by UE	0 dB for DPCH_Ec/Ior	No test requirements for DPCH_Ec/Ior
8.5 Timing and Signalling Characteristics	TBD		
8.5.1 UE Transmit Timing	TBD		
8.6 UE Measurements Procedures			
8.6.1 FDD intra frequency measurements			
8.6.1.1 Event triggered reporting in AWGN propagation conditions	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
(R99)	During T1 to T4: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1 to T4: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T1 to T4: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	During T1/T4 only : Already covered above	During T1/T4 only: Covered above	During T1/T4 only: Already covered above
	During T2/T3 only: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T2/T3 only: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T2/T3 only: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.1 A Event triggered reporting in AWGN propagation conditions (Rel-4 and later)	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 / T2 / T3: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1 / T2 / T3: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T1 / T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	During T1/T3 only : Already covered above	During T1/T3 only: Covered above	During T1/T3 only: Already covered above
	During T2 only: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T2 only: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T2 only: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T0 to T6: Cell 1, Cell 2 and Cell 3: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T0 to T6: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T0 to T6: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)	TBD	TBD	TBD
8.6.1.3 Event triggered reporting of two detectable neighbours	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].~~TBD~~		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
in AWGN propagation condition (R99)	During T0 to T5: Cell 1, Cell 2 and Cell 3: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Cell 1: DPCH_Ec/Ior = -17 dB	During T0 to T5: +0.40 dB +0.40 dB +0.40 dB +0.40 dB +0.40 dB	During T0 to T5: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.3A Event triggered reporting of two detectable neighbours in AWGN propagation condition (Rel-4 and later)	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T0 to T4: Cell 1, Cell 2 and Cell 3: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Cell 1: DPCH_Ec/Ior = -17 dB	During T0 to T4: +0.40 dB +0.40 dB +0.40 dB +0.40 dB +0.40 dB	During T0 to T4: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD		
8.6.2 FDD inter frequency measurements	TBD		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD		
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD		
8.6.3 TDD measurements	TBD		
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD		
8.7 Measurements Performance Requirements	TBD		
8.7.1 CPICH RSCP			
8.7.1.1 Intra frequency measurements accuracy	See table 8.7.1.1.1.1 andtable 8.7.1.1.1.2	±1 dB for Ioc±0.3 dB for Ior/Ioc±0.1dB forÖ .._Ec/Ior	Any TT applied to the nominal setting shall fulfil:Test 1 (absolute and relative): Io shall not go below -69dBm Test 2(absolute and relative): Io shall not go above -50 dBmTest 3 (absolute and relative): Io shall not go below -94 dBm Ior/Ioc + TTTT on top of UE measurement accuracy:Absolute±1.0 dB for Ioc±0.3 dB for Ior/Ioc ±0.1dB for CPICH_Ec/Ior ∑ 1.4dBRelative±0.3 dB for Ior/Ioc (cell1)±0.3 dB for Ior/Ioc (cell2)±0.1dB for CPICH_Ec/Ior (cell1)±0.1dB for CPICH_Ec/Ior (cell2)∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.1.2 Inter frequency measurement accuracy	See table 8.7.1.2.1.1 andtable 8.7.1.2.1.2	±1 dB for Ioc±0.3 dB for Ioc1/Ioc2±0.3 dB for Ior/Ioc±0.1dB for Ö .._Ec/Ior	Any TT applied to the nominal setting shall fulfil:Test 1: Io shall not go above -50 dBmTest 2: Io shall not go below -94 dBmIor/Ioc + TTTT on top of UE measurement accuracy:±0.3 dB for Ioc1/Ioc2±0.3 dB for Ior/Ioc (cell1)±0.3 dB for Ior/Ioc (cell2)±0.1dB for CPICH_Ec/Ior (cell1)±0.1dB for CPICH_Ec/Ior (cell2)∑ 1.1 dB
8.7.2 CPICH Ec/Io			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2.1 Intra frequency measurements accuracy	table 8.7.2.1.1.1 and table 8.7.2.1.1.2	±1 dB for Ioc ±0.3 dB for Ior/Ioc ±0.1dB for Ö .._Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1(absolute and relative): Io shall not go above -50 dBm Test 2 (absolute and relative): Io shall not go below -87dBm Test 3 (absolute and relative): Io shall not go below -94 dBm CPICH Ec/Io shall stay in the UE accuracy ranges Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute ±0.3 dB for Ior/Ioc ±0.1dB for CPICH_Ec/Ior ∑ 0.4dB Relative Ioc1=Ioc2 ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2.2 Inter frequency measurement accuracy	table 8.7.2.2.2.1 and table 8.7.2.2.2.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Ior/Ioc ±0.1dB for Ö .._Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1: Io shall not go above -50 dBm Test 2: Io shall not go below -87 dBm Test 3: Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Ioc1=Ioc2. ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8 dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.3 UTRA Carrier RSSI	Table 8.7.3.1.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Ĝor/Ioc	Any TT applied to the nominal setting shall fulfil: Test 1 (absolute): Io shall not go above -50 dBm Test 2 (absolute): Io shall not go below -69 dBm Test 3 (absolute and relative): Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute tests: Test 1: Max TT= Io_{max} ñ $Io_{nominal}$ $Io_{nominal}$ = -51.15 dBm Io_{max} = Ioc_{max} +Ior_{max} = (-53.5 dBm + 1dB) + (-52.5 dBm ñ 1.45 dB + 0.3 dB) = -50.0 dBm => Max TT = 1.15 dB Min TT = Io_{min} - Io Io_{min} = Ioc_{min} + Ior_{min} = (-53.5 dBm ñ1 dB) + (-54.5 dBm ñ 1.45 dB ñ 0.3 dB) = - 52.3 dBm => Min TT = -1.15 dB Test 2: Max TT= Io_{max} ñ $Io_{nominal}$ $Io_{nominal}$ = - 67.9 dBm Io_{max} = Ioc_{max} + Ior_{max} = (-69.27 dBm + 1dB) + (-68.27 dBm ñ 4.4 dB + 0.3 dB) = -66.8 dBm => Max TT = 1.1 dB Min TT = Io_{min} - Io Io_{min} = Ioc_{min} + Ior_{min} = (-69.27 dBm ñ 1 dB) + (-70.27 dBm ñ 4.4 dB ñ 0.3 dB) = -69.0 dBm => Min TT = -1.1 dB Test 3 (Band I): Max TT= Io_{max} ñ $Io_{nominal}$ $Io_{nominal}$ = -93 dBm Io_{max} = Ioc_{max} + Ior_{max} + No = (-93.46 dBm + 1dB) + (-92.46 dBm ñ 9.24 dB +0.3 dB) + -99 dBm = -91.2 => Max TT = 1.8 dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.3A GSM Carrier RSSI	TBD		
8.7.3B Transport channel BLER	TBD		
8.7.3C UE Transmitted power	Accuracy upper limit Accuracy lower limit Depends on PUEMAX see table 8.7.3C.2.1	0.7 dB	Formula: Upper accuracy limit + TT Lower accuracy limit ñ TT Add and subtract TT to all the values in table 8.7.3C.2.1.
8.7.4 SFN-CFN observed time difference	T able 8.7.4.1.2 and Table 8.7.4.2.2	±1.0 dB for Ioc ±0.3 dB for Ior/Ioc ±0.5 chips for the actual SFN-CFN observed time difference	Intra and inter frequency case: Test 1: Io shall not go above -50 dBm Test 2: No restrictions on Io value Test 3: Io shall not go below -94 dBm (Band 1), or below ñ92 dBm (Band II) or below ñ91 dBm (Band III) Œr/Ioc + TT TT on top of UE measurements accuracy: SFN-CFN observed time difference: 1.0 chips + TT
8.7.5.1 SFN-SFN observed time difference type 1	T able 8.7.5.1.2	±1.0 dB for Ioc ±0.3 dB for Ior/Ioc ±0.5 chips for the actual SFN-SFN observed time difference	Test 1: Io shall not go above -50 dBm Test 2: No restrictions on Io value Test 3: Io shall not go below -94 dBm (Band 1), or below ñ92 dBm (Band II) or below ñ91 dBm (Band III) Œr/Ioc + TT TT on top of UE measurements accuracy: SFN-SFN observed time difference: 1.0 chips + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.6 UE Rx-Tx time difference	*Io ñ10.9 dB = Ioc,* Test 1: Io = -94 dBm Test2 : Io = -72dBm Test3 : Io = -50dBm Timing Accuracy ± 1.5 chip	1 dB for Ioc 0.3 dB for Ior/Ioc 0.5 chip for timing accuracy	Test 1: Io = -92.7 dBm, Ioc = -103.6 dBm Formula: $Ioc*(1-TT_{Ioc}+ (Ior/Ioc-TT_{Ior/Ioc})) \geq -94$ Test 2: unchanged (no critical RF parameters) Test 3: Io = -51.3 dBm, Ioc = -62.2 dBm Formula: $Ioc*(1+TT_{Ioc}+ (Ior/Ioc+TT_{Ior/Ioc})) \leq -50$ Timing accuracy ±2.0 chip Formulas: Upper limit +TT Lower limit ñTT
8.7.7 Observed time difference to GSM cell	TBD		
8.7.8 P-CCPCH RSCP	TBD		

Table F.4.5: Derivation of Test Requirements (Performance tests HSDPA)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
9.2.1 Single Link Performance	$\frac{E_c}{I_{or}}$ -6 and -3 dB I_{OC} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 0 and 10 dB	0.1 dB for $\frac{E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{OC} unchanged

3GPP TSG-T1 Meeting #25 **Tdoc ⌘T1-041868**
Malta, 1st ñ 5th November, 2004

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	468	⌘rev	-	⌘	Current version:	5.5.0	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	S-CCPCH configuration in 8.3.5 Cell Re-selection in CELL_FACH.
Source:	⌘	Rohde & Schwarz, NEC
Work item code:	⌘	
Date:	⌘	2/11/2004
Category:	⌘	F
Release:	⌘	R5

Use one of the following categories:
F (correction)
A (corresponds to a correction in an earlier release)
B (addition of feature),
C (functional modification of feature)
D (editorial modification)
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	To define a consistent S-CCPCH configuration it is proposed to change the definition of the S-CCPCH to standard S-CCPCH as defined in 34.108.
Summary of change:	⌘	Remove table 8.3.5.1.2 and table 8.3.5.1.3. Remove table 8.3.5.2.2 and table 8.3.5.2.3. Remove table 8.3.5.3.2 and table 8.3.5.3.3.
Consequences if not approved:	⌘	The configuration of the S-CCPCH would not be consistent through the TS 34.121.

Clauses affected:	⌘	8.3.5.1, 8.3.5.2, 8.3.5.3			
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This is a re-submission of T1-041364			

8.3.5 Cell Re-selection in CELL_FACH

8.3.5.1 One frequency present in neighbour list

8.3.5.1.1 Definition and applicability

The cell re-selection delay is defined as the time between the occurrence of an event which will trigger Cell Reselection process and the moment in time when the UE starts sending the the preambles on the PRACH for sending RRC CELL UPDATE message to the UTRAN.

The requirements and this test apply to the FDD UE.

8.3.5.1.2 Minimum requirements

The cell re-selection delay shall be less than 1.6 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

If a cell has been detectable at least $T_{identify,intra}$, the cell reselection delay in CELL_FACH state to a cell in the same frequency shall be less than

$$T_{reselection,\,intra} = T_{Measurement\_Period\ Intra} + T_{IU} + 20 + T_{SI} + T_{RA} \text{ ms}$$

where

$T_{Measurement\_Period\ Intra}$ = 200 ms.

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. 1280 ms is assumed in this test case.

T_{RA} = The additional delay caused by the random access procedure. T_{RA} is a delay is caused by the physical random access procedure described in TS 25.214 clause 6.1. A persistence value is assumed to be 1 in this test case and therefore T_{RA} in this test case is 40 ms.

These requirements assume radio conditions to be sufficient, so reading of system information can be done without errors.

The normative reference for this requirement is TS 25.133 [2] clauses 5.5.2.1.1 and A.5.5.1.

8.3.5.1.3 Test purpose

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL_FACH state in the single carrier case

8.3.5.1.4 Method of test

8.3.5.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.5.1.1 to 8.3.5.1.5. The UE is requested to monitor neighbouring cells on 1 carrier. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms.

Table 8.3.5.1.1: General test parameters for Cell Re-selection in CELL_FACH, one freq. in neighbour list

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
Access Service Class (ASC#0) ñ Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
T1		s	15	
T2		s	15	

The transport and physical parameters of the S-CCPCH carrying the FACH are defined in TS 34.108 clause 6.1.0b (Contents of System Information Block type 5 (FDD)) ~~table 8.3.5.1.2 and table 8.3.5.1.3.~~

Table 8.3.5.1.2: void~~Physical channel parameters for S-CCPCH, one freq. in neighbour list~~

~~Parameter~~	~~Unit~~	~~Level~~
~~Channel bit rate~~	~~kbps~~	~~60~~
~~Channel symbol rate~~	~~ksps~~	~~30~~
~~Slot Format #I~~	~~-~~	~~4~~
~~TFCI~~	~~-~~	~~OFF~~
~~Power offsets of TFCI and Pilot fields relative to data field~~	~~dB~~	~~0~~

Table 8.3.5.1.3~~:~~ :void~~Transport channel parameters for S-CCPCH, one freq. in neighbour list~~

~~Parameter~~	~~FACH~~
~~Transport Channel Number~~	~~1~~
~~Transport Block Size~~	~~240~~
~~Transport Block Set Size~~	~~240~~
~~Transmission Time Interval~~	~~10 ms~~
~~Type of Error Protection~~	~~Convolution Coding~~
~~Coding Rate~~	~~Ω~~
~~Rate Matching attribute~~	~~256~~
~~Size of CRC~~	~~16~~
~~Position of TrCH in radio frame~~	~~Fixed~~

Table 8.3.5.1.4: Cell specific conditions for Cell Re-selection in CELL_FACH, one freq. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
S-CCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
OCNS_Ec/Ior	dB	-1.295		-1.295		-1.295		-1.295		-1.295		-1.295	
$\hat{I}_{or}/I_{oc}$	dB	7.3	10.27	10.27	7.3	0.27		0.27		0.27		0.27	
$\hat{I}_{or}$ *(Note 1)*	dBm	-62.73	-59.73	-59.73	-62.73	-69.73		-69.73		-69.73		-69.73	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-23		-23		-23		-23	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dBm	21		21		21		21		21		21	
Qoffset $2_{s,n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
IE "FACH Measurement occasion info"		not sent		not sent		not sent		not sent		not sent		not sent	

Note 1 The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.5.1.4.2 Procedure

1) The SS activates cell 1-6 with RF parameters set up according to T1 in table 8.3.5.1.5.

2) The UE is switched on.

3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.5 to place the UE in the CELL_FACH state on Cell 2 and the SS waits for this process to complete.

4) After 15 seconds from completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.1.5.

5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.1.5.

8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved .

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore the cell re-selection delay shall be less than 1.7 s.(Minimum requirement + 100ms). Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Contents of CELL UPDATE CONFIRM message for CELL_FACH

Information Element	Value/remark
RRC transaction identifier Activation time New C-RNTI	0 Not Present 010101010101010 B
RRC State indicator	CELL_FACH

8.3.5.1.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.5.1.5: Cell specific test requirements for Cell Re-selection in CELL_FACH, one freq. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.5		-10.5		-10.5		-10.5	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.5		-15.5		-15.5		-15.5	
S-CCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
OCNS_Ec/Ior	dB	-1.52		-1.52		-1.13		-1.13		-1.13		-1.13	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	7.0	10.4	10.4	7.0	0.3		0.3		0.3		0.3	
$\hat{I}_{or}$	dBm	-63.0	-59.6	-59.6	-63.0	-69.7		-69.7		-69.7		-69.7	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io *Note 1*	dB	-15.7	-12.3	-12.3	-15.7	-23.5		-23.5		-23.5		-23.5	

All other parameters and conditions specified in table 8.3.5.1.4 are unchanged.

Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

Note 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.5.2 Two frequencies present in the neighbour list

8.3.5.2.1 Definition and applicability

The cell re-selection delay is defined as the time between the occurrence of an event which will trigger Cell Reselection process and the moment in time when the UE starts sending the the preambles on the PRACH for sending RRC CELL UPDATE message to the UTRAN.

The requirements and this test apply to the FDD UE.

8.3.5.2.2 Minimum requirements

The cell re-selection delay shall be less than 1.9 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

If a cell has been detectable at least $T_{identify,inter}$, the cell reselection delay in CELL_FACH state to a FDD cell on a different frequency shall be less than

$$T_{reselection,\,inter} = T_{Measurement\ inter} + T_{IU} + 20 + T_{SI} + T_{RA}\ \text{ms}$$

where

$T_{Measurement\_inter}$ is 480 ms in this case

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. 1280 ms is assumed in this test case.

T_{RA} = The additional delay caused by the random access procedure. T_{RA} is a delay is caused by the physical random access procedure described in TS 25.214 clause 6.1. A persistence value is assumed to be 1 in this test case and therefore T_{RA} in this test case is 40 ms.

These requirements assume radio conditions to be sufficient, so that reading of system information can be done without errors.

The normative reference for this requirement is TS 25.133 [2] clauses 5.5.2.1.2 and A.5.5.2.

8.3.5.2.3 Test purpose

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL_FACH state in the single carrier case

8.3.5.2.4 Method of test

8.3.5.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.5.2.1 to 8.3.5.2.5. The UE is requested to monitor neighbouring cells on 2 carriers. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms

Table 8.3.5.2.1: General test parameters for Cell Re-selection in CELL_FACH, two freqs. in neighbour list

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
Access Service Class (ASC#0) ñ Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
T1		s	15	
T2		s	15	

The transport and physical parameters of the S-CCPCH carrying the FACH are defined in TS 34.108 clause 6.1.0b (Contents of System Information Block type 5 (FDD)) ~~table 8.3.5.2.2 and table 8.3.5.2.3~~.

Table 8.3.5.2.2:void ~~Physical channel parameters for S-CCPCH, two freqs. in neighbour list~~

~~Parameter~~	~~Unit~~	~~Level~~
~~Channel bit rate~~	~~kbps~~	~~60~~
~~Channel symbol rate~~	~~ksps~~	~~30~~
~~Slot Format #I~~	~~-~~	~~4~~
~~TFCI~~	~~-~~	~~OFF~~
~~Power offsets of TFCI and Pilot fields relative to data field~~	~~dB~~	~~0~~

Table 8.3.5.2.3~~:~~ :void~~Transport channel parameters for S-CCPCH, two freqs. in neighbour list~~

~~**Parameter**~~	~~**FACH**~~
~~Transport Channel Number~~	~~1~~
~~Transport Block Size~~	~~240~~
~~Transport Block Set Size~~	~~240~~
~~Transmission Time Interval~~	~~10 ms~~
~~Type of Error Protection~~	~~Convolution Coding~~
~~Coding Rate~~	~~Ω~~
~~Rate Matching attribute~~	~~256~~
~~Size of CRC~~	~~16~~
~~Position of TrCH in radio frame~~	~~Fixed~~

Table 8.3.5.2.4: Cell specific conditions for Cell re-selection in CELL_FACH state, two freqs. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
S-CCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
OCNS_Ec/Ior	dB	-1.295		-1.295		-1.295		-1.295		-1.295		-1.295	
$\hat{I}_{or}/I_{oc}$	dB	-1.8	2.2	2.2	-1.8	-6.8	-4.8	-6.8	-4.8	-4.8	-6.8	-4.8	-6.8
$\hat{I}_{or}$ (Note 1)	dBm	-71.85	-67.75	-67.75	-71.85	-76.85	-74.75	-76.85	-74.75	-74.75	-76.85	-74.75	-76.85
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-15	-13	-13	-15	-20		-20		-20		-20	
Propagation Condition		AWGN											
Cell_selection_ and_reselection_ quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_ MAX_RACH	dBm	21		21		21		21		21		21	
Qoffset2$_{s, n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
Sintersearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
IE "FACH Measurement occasion info"		sent		sent		sent		sent		Sent		sent	
FACH Measurement occasion cycle length coefficient		3		3		3		3		3		3	
Inter-frequency FDD measurement indicator		TRUE		TRUE		TRUE		TRUE		TRUE		TRUE	
Inter-frequency TDD measurement indicator		FALSE		FALSE		FALSE		FALSE		FALSE		FALSE	

Note 1 The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.5.2.4.2 Procedure

1) The RF parameters for cell 1 are set up according to T1 in table 8.3.5.2.5.

2) The UE is switched on.

3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.5 to place the UE in the CELL_FACH state on Cell 2 and the SS waits for this process to complete.

4) After 15 seconds from completion of step3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.2.5.

5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 2.0 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.2.5.

8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 2.0 s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore the cell re-selection delay shall be less than 2.0 s.(Minimum requirement + 100ms).

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Contents of CELL UPDATE CONFIRM message for CELL_FACH

Information Element	Value/remark
RRC transaction identifier Activation time New C-RNTI	0 Not Present 010101010101010 B
RRC State indicator	CELL_FACH

8.3.5.2.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.5.2.5: Cell specific test requirements for Cell re-selection in CELL_FACH state, two freqs. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2

UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.7		-10.7		-10.7		-10.7	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.7		-15.7		-15.7		-15.7	
S-CCPCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
OCNS_Ec/Ior	dB	-1.52		-1.52		-1.08		-1.08		-1.08		-1.08	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	-1.80	+4.64	+4.64	-1.80	-6.80	-3.16	-6.80	-3.16	-3.16	-6.80	-3.16	-6.80
$\hat{I}_{or}$	dBm	-71.8	-67.0	-67.0	-71.8	-76.8	-74.8	-76.8	-74.8	-74.8	-76.8	-74.8	-76.8
I_{oc}	dBm/3.84 MHz	-70.0	-71.6	-71.6	-70.0	-70.0	-71.6	-70.0	-71.6	-71.6	-70.0	-71.6	-70.0
CPICH_Ec/Io *Note 1*	dB	-14.4	-11.6	-11.6	-14.4	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7

All other parameters and conditions specified in table 8.3.5.2.4 are unchanged.

Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

Note 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.5.3 Cell Reselection to GSM

8.3.5.3.1 Definition and applicability

The cell re-reselection delay is defined as the time from the beginning of time period T2, to the moment when the UE starts to transmit the random access in Cell 2 (the GSM cell).

This requirements and this test apply to UE supporting FDD PS and GSM GPRS.

8.3.5.3.2 Minimum requirements

The cell re-selection delay shall be less than 5.5 + $\mathbf{T_{RA}}$ s.

The rate of correct reselections observed during repeated tests shall be at least 90%.

NOTE: The cell re-selection delay can be expressed

$$T_{reselection,\,GSM} = T_{identify,GSM} + T_{measurement,\,GSM} + 40 + T_{BCCH} + T_{RA} \text{ ms}$$

where:

$T_{identify,GSM}$ Specified in TS 25.133 [2] clause 8.4.2.5.2.1, here it is 2880 ms

$T_{measurement,\,GSM}$ Specified in TS 25.133 [2] clause 5.5.2.1.4, here it is 640 ms

T_{BCCH} According to TS 05.08 [20], the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.

T_{RA} The additional delay caused by the random access procedure in the GSM cell, is 10 ms (2 GSM radio frames).

These requirements assume radio conditions to be sufficient, so reading of system information can be done without errors.

The normative reference for this requirement is TS 25.133 [2] clauses 5.5.2.1.4 and A.5.5.3.

8.3.5.3.3 Test purpose

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL_FACH state.

8.3.5.3.4 Method of test

8.3.5.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.5.3.1 to 8.3.5.3.5. This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected. The UTRAN cell and the GSM cell are set to belong to different location areas. The GSM cell shall be set up to allow UE to transmit radio access burst in every GSM radio frame. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 6 GSM cells.

Table 8.3.5.3.1: General test parameters for UTRAN to GSM Cell Re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cell		Cell2	
Final condition	Active cell		Cell2	
HCS				Not used
Neighbour cell list size			24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	
T1		s	5	
T2		s	10	

The transport and physical parameters of the S-CCPCH carrying the FACH are defined in TS 34.108 clause 6.1.0b (Contents of System Information Block type 5 (FDD)) ~~Table 8.3.5.3.2 and Table Table 8.3.5.3.3~~.

Table 8.3.5.3.2: void~~Physical channel parameters for S-CCPCH.~~

~~Parameter~~	~~Unit~~	~~Level~~
~~Channel bit rate~~	~~kbps~~	~~60~~
~~Channel symbol rate~~	~~ksps~~	~~30~~
~~Slot Format #I~~	~~-~~	~~4~~
~~TFCI~~	~~-~~	~~OFF~~
~~Power offsets of TFCI and Pilot fields relative to data field~~	~~dB~~	~~0~~

Table 8.3.5.3.3: void~~Transport channel parameters for S-CCPCH~~

~~Parameter~~	~~FACH~~
~~Transport Channel Number~~	~~1~~
~~Transport Block Size~~	~~240~~
~~Transport Block Set Size~~	~~240~~
~~Transmission Time Interval~~	~~10 ms~~
~~Type of Error Protection~~	~~Convolution Coding~~
~~Coding Rate~~	~~Ω~~
~~Rate Matching attribute~~	~~256~~
~~Size of CRC~~	~~16~~
~~Position of TrCH in radio frame~~	~~Fixed~~

Table 8.3.5.3.4: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
PCCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
S-CCPCH_Ec/Ior	dB	-12	
OCNS_Ec/Ior	dB	-1.295	
$\hat{I}_{or}/I_{oc}$	dB	0	-5
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io	dB	-13	-16.2
CPICH_RSCP	dBm	-80	-85
Propagation Condition		AWGN	
Cell_selection_and_ reselection_quality_mea sure		CPICH Ec/Io	
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_ RACH	dBm	21	
Qoffset1$_{s, n}$	dB	C1, C2: 0	
Qhyst1	dB	0	
Treselection	s	0	
Ssearch$_{RAT}$	dB	Not sent	
IE ìFACH Measurement occasion infoî		Sent	
FACH Measurement occasion cycle length coefficient		3	
Inter-frequency FDD measurement indicator		FALSE	
Inter-frequency TDD measurement indicator		FALSE	
Inter-RAT measurement indicators		Included	
>RAT type		GSM	

Table 8.3.5.3.5: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-90	-75
RXLEV_ACCESS_ MIN	dBm	-104	
MS_TXPWR_MAX_ CCH	dBm	33	

8.3.5.3.4.2 Procedure

1) The SS activates cell 1-2 with RF parameters set up according to T1 in tables 8.3.5.3.6 and 8.3.5.3.7.

2) The UE is switched on.

3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.5 to place the UE in CELL_FACH and the SS waits for this process to complete.

4) After 5 seconds from completion of step3 or the beginning of T1, the parameters are changed to those defined for T2 in tables 8.3.5.3.6 and 8.3.5.3.7.

5) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 5.51 s (=5.5 s + T_{RA}s) from the beginning of time period T2 then a success is recorded and the SS completes the location update procedure in GSM and the procedure continues with step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 10s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS completes the location update procedure in GSM and the procedure continues with step 7.

7) After 10 s from the beginning of time period T2, the parameters are changed to those defined for T1 in tables 8.3.5.3.6 and 8.3.5.3.6.

8) The SS waits for random access requests from the UE on cell 1. The SS completes the location update procedure in UTRA

9) Repeat step 3) to 8) until the confidence level according to annex F.6.2 is achieved.

8.3.5.3.5 Test requirements

Table 8.3.5.3.6: Cell re-selection UTRAN to GSM cell case (cell 1) Test Requirements

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-9.9	-10.1
PCCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
S-CCPCH_Ec/Ior	dB	-12	
OCNS_Ec/Ior	dB	-1.309	-1.282
$\hat{I}_{or}/I_{oc}$	dB	0.3	-5.3
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io	dB	-12.8	-16.5
CPICH_RSCP	dBm	-79.6	-85.4
Propagation Condition		AWGN	
Cell_selection_and_reselection_quality_measure		CPICH Ec/Io	
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
$Qoffset1_{s, n}$	dB	C1, C2: 0	
Qhyst1	dB	0	
Treselection	s	0	
$Ssearch_{RAT}$	dB	Not sent	
IE ìFACH Measurement occasion infoî		Sent	
FACH Measurement occasion cycle length coefficient		3	
Inter-frequency FDD measurement indicator		FALSE	
Inter-frequency TDD measurement indicator		FALSE	
Inter-RAT measurement indicators		Included	
>RAT type		GSM	

Table 8.3.5.3.7: Cell re-selection UTRAN to GSM cell case (cell 2) Test Requirements

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-90.3	-74.7
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

NOTE 1: CPICH_Ec/Io and CPICH_RSCP levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95 %.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #25
Malta, 1st ñ 5th November 2004

Tdoc ⌘T1-041877

CR-Form-v7

CHANGE REQUEST

⌘	**34.-121**	**CR**	473	⌘ **rev**	**-**	⌘	Current version:	**5.5.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘ Correction of time to receive system information in RRM test cases		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	***Date:*** ⌘	4/11/2004
Category:	⌘ **F**	***Release:*** ⌘	Rel-5
	Use <u>one</u> of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use <u>one</u> of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*	

Reason for change: ⌘

T_{SI} is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). In test case 8.2.2.1, 8.2.2.2, 8.3.5.1, 8.3.5.2, 8.3.6.1, 8.3.6.2, 8.3.7.1, 8.3.7.2, 8.4.1.1 and 8.4.1.2 it is assumed that T_{SI} is 1280 ms. However, the worst case would be 1420 ms as described in the example below.

Example

MIB	SB1	SIB18	SIB5	MIB	SIB5	SIB5	SIB5	
32	**34**	**36**	**38**	**40**	**42**	**44**	**46**	**SFN**

1. UE starts reading BCH at SFN 34.
2. At SFN 40 the Master Information Block (MIB) is read. As part of the MIB the UE get the scheduling information for System Information Block 5 (SIB5).
3. The SIB5 is segmented into 4 segments. First position is SFN 38 followed by 42, 44 and 46. The repetition rate is 128 (1280 ms). According to RRC Spec (clause 8.1.1.1.4 in 25.331) the segments should be read in an ascending order.
4. Not being able to read the SIB5 starting at SFN 38 the next occurrence is at SFN 38 + 128. The following segments are located at SFN 170, 172, 174. The complete SIB5 is read at 176.

		5. As the UE starts reading the BCH at SFN 34 and finish reading SIB5 at SFN 176 this will result in 1420 ms (10 ms*(176-34))
Summary of change:	⌘	Changes to test cases 8.2.2.1, 8.2.2.2, 8.3.5.1, 8.3.5.2, 8.3.6.1, 8.3.6.2, 8.3.7.1, 8.3.7.2, 8.4.1.1 and 8.4.1.2: 1. The maximum time to read the relevant system info blocks is changed from 1280 ms to 1420 ms 2. Note added given the rationale for setting the value to 1420ms. Changes to 8.4.1.1 and 8.4.1.2: 3. Added reference to Annex I for system information scheduling.
Consequences if not approved:	⌘	Test case may fail good UE.

Clauses affected:	⌘	8.2.2.1, 8.2.2.2, 8.3.5.1, 8.3.5.2, 8.3.6.1, 8.3.6.2, 8.3.7.1, 8.3.7.2, 8.4.1.1 and 8.4.1.2				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	Affects R99, Rel4 and Rel5 UEs.				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<Start of first modified section>

8.2.2 Cell Re-Selection

8.2.2.1 Scenario 1: Single carrier case

8.2.2.1.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the RRC CONNECTION REQUEST message to perform a Location Updating procedure (MM) or Routing Area Updating procedure (GMM) on the new cell.

The requirements and this test apply to the FDD UE.

8.2.2.1.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

$T_{evaluateFDD}$	See table 4.1 in TS 25.133 [2] clause 4.2.2.
T_{SI}	Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2.2 and A.4.2.1.

8.2.2.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.2.1.4 Method of test

8.2.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 1 carrier and 6 cells as given in tables 8.2.2.1.1 to 8.2.2.1.3. The UE is requested to monitor neighbouring cells on 1 carrier. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.1.1: Scenario 1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3, Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
SYSTEM INFORMATION BLOCK TYPE 1 - CN common GSM-MAP NAS system information		-	00 80(H) → Cell 1 00 81(H) → Cell 2	This identity should be set as different value from the neigbour cell so that a Location Updating procedure(MM) or a Routing Area Updating procedure(GMM) is performed when UE selects more suitable cell in idle state.
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
DRX cycle length		s	1,28	The value shall be used for all cells in the test.
T1		s	15	T1 need to be defined so that cell re-selection reaction time is taken into account.
T2		s	15	T2 need to be defined so that cell re-selection reaction time is taken into account.

Table 8.2.2.1.2: Scenario 1: Test parameters for Cell re-selection single carrier multi cell

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
OCNS_Ec/Ior	dB	-0,941		-0,941		-0,941		-0,941		-0,941		-0,941	
$\hat{I}_{or}/I_{oc}$	dB	7,3	10,27	10,27	7,3	0,27		0,27		0,27		0,27	
$\hat{I}_{or}$ *(Note 1)*	dBm	-62.73	-59.73	-59.73	-62.73	-69.73		-69.73		-69.73		-69.73	
I_{oc}	dBm / 3,84 MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-23		-23		-23		-23	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dB	21		21		21		21		21		21	
Qoffset2$_{s,\,n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	

Note 1 The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.2.2.1.4.2 Procedure

1) The SS activates cell 1-6 with T1 defined parameters in table 8.2.2.1.3 and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

3) The SS and the UE shall perform a first registration procedure on cell2.

4) 15 s after step 3 has completed, the parameters are changed to that as described for T2 in table 8.2.2.1.3.

5) The SS waits for random access requests from the UE. If the UE responds on cell 1 within 8 s from the beginning of time period T2 then the number of successful tests is increased by one. The SS and the UE shall perform a Location Updating procedure (MM) or a Routing Area Updating procedure (GMM) on cell1.

6) After 15 s from the beginning of time period T2, the parameters are changed to that as described for T1 in table 8.2.2.1.3.

7) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 8 s from the beginning of time period T1 then the number of successful tests is increased by one. The SS and the UE shall perform a Location Updating procedure(MM) or a Routing Area Updating procedure (GMM) on cell2.

8) After 15 s from the beginning of time period T1, the parameters are changed to that as described for T2.

9) Repeat step 5) to 8) until the confidence level according to annex F.6.2 is achieved.

NOTE 1: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum time to read ~~repetition period of~~ the relevant system info blocks that needs to be received by the UE to camp on a cell is 1420~~1280~~ms (see note 2) and the maximum RRC procedure delay for reception system information block is 100ms, 1520~~1380~~ ms is assumed in this test case. Therefore this gives a total of 7.92~~7.78~~s.(Minimum requirement + 240~~100~~ms), allow 8s in the test case.

NOTE 2: The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms. The Master Information Block (MIB) is repeated every 8 frame and SIB5 (and SIB11) is segmented into 4 segments where the first segment is scheduled adjacent to the MIB at SIB_POS=40 and the other three segments are scheduled after the MIB (SIB_POS=42, 44 and 46). The maximum time for a UE to read SIB5 will occur if the UE start reading the BCH at the SFN after the MIB located prior to the first segment of SIB5 (SIB_POS 32). Then the UE will not be able to read SIB5 until the second occurrence of SIB5, which will happen at SIB_POS 46 + 1280ms. This gives that the maximum time for the UE to read the relevant system info will be 1420ms ((SIB_POS 46 ñ SIB_POS 32)*10ms +1280ms).

8.2.2.1.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.2.2.1.3: Scenario 1: Test requirements for Cell re-selection single carrier multi cell

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.5		-10.5		-10.5		-10.5	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.5		-15.5		-15.5		-15.5	
OCNS_Ec/Ior	dB	-1.10		-1.10		-0.83		-0.83		-0.83		-0.83	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	7.00	10.40	10.40	7.00	0.30		0.30		0.30		0.30	
$\hat{I}_{or}$	dBm	-63.0	-59.6	-59.6	-63.0	-69.7		-69.7		-69.7		-69.7	
I_{oc}	dBm / 3,84 MHz	-70											
CPICH_Ec/Io *Note 1*	dB	-15.7	-12.3	-12.3	-15.7	-23.5		-23.5		-23.5		-23.5	

All other parameters and conditions specified in table 8.2.2.1.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.2 Scenario 2: Multi carrier case

8.2.2.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the RRC CONNECTION REQUEST message to perform a Location Updating procedure(MM) or Routing Area Updating procedure (GMM) on the new cell.

The requirements and this test apply to the FDD UE.

8.2.2.2.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

$T_{evaluateFDD}$ See table 4.1 in TS 25.133 [2] clause 4.2.2.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2.3 and A.4.2.2.

8.2.2.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.2.2.4 Method of test

8.2.2.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 2 carriers and 6 cells as given in tables 8.2.2.2.1 to 8.2.2.2.3. The UE is requested to monitor neighbouring cells on 2 carriers. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.2.1: Scenario 2: General test parameters for Cell Re-selection in multi carrier case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
SYSTEM INFORMATION BLOCK TYPE 1 - CN common GSM-MAP NAS system information		-	00 80(H) → Cell 1 00 81(H) → Cell 2	This identity should be set as different value from the neigbour cell so that a Location Updating procedure (MM) or a Routing Area Updating procedure (GMM) is performed when UE selects more suitable cell in idle state.
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
DRX cycle length		S	1,28	The value shall be used for all cells in the test.
T1		s	30	T1 need to be defined so that cell re-selection reaction time is taken into account.
T2		s	15	T2 need to be defined so that cell re-selection reaction time is taken into account.

Table 8.2.2.2.2: Scenario 2: Test parameters for Cell re-selection multi carrier multi cell

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
OCNS_Ec/Ior	dB	-0.941		-0.941		-0.941		-0.941		-0.941		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	-3.4	2.2	2.2	-3.4	-7.4	-4.8	-7.4	-4.8	-4.8	-7.4	-4.8	-7.4
$\hat{I}_{or}$ (Note 1)	dBm	-73.39	-67.75	-67.75	-73.39	-77.39	-74.75	-77.39	-74.75	-74.75	-77.39	-74.75	-77.39
I_{oc}	dBm / 3.84 MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-20		-20		-20		-20	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dB	21		21		21		21		21		21	
Qoffset2$_{s,n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
Sintersearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	

Note 1 The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.2.2.2.4.2 Procedures

1) The SS activates cell 1-6 with T1 defined parameters in table 8.2.2.2.3 and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

3) The SS and the UE shall perform a first location registration procedure on cell2.

4) 30 s after step3 has completed, the parameters are changed to that as described for T2 in table 8.2.2.2.3.

5) The SS waits for random access request from the UE. If the UE responds on cell 1 within 8 s from the beginning of time period T2 then the number of successful tests is increased by one. The SS and the UE shall perform a Location Updating procedure (MM) or a Routing Area Updating procedure (GMM) on cell1.

6) After another 15 s from the beginning of time period T2, the parameters are changed to that as described for T1 in table 8.2.2.2.3.

7) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 8 s from the beginning of time period T1 then the number of successful tests is increased by one. The SS and the UE shall perform a Location Updating procedure (MM) or a Routing Area Updating procedure (GMM) on cell2.

8) After 15 s from the beginning of time period T1, the parameters are changed as described for T2.

9) Repeat step 5) to 8) until the confidence level according to annex F.6.2 is achieved.

NOTE 1: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

NOTE 2: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum time to read~~repetition period of~~ the relevant system info blocks that needs to be received by the UE to camp on a cell is 1420~~1280~~ms (see note 3) and the maximum RRC procedure delay for reception system information block is 100ms, 1520~~1380~~ ms is assumed in this test case. Therefore this gives a total of 7.92~~7.78~~s~~.~~ (Minimum requirement + 240~~100~~ms), allow 8s in the test case.

NOTE 3: The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms. The Master Information Block (MIB) is repeated every 8 frame and SIB5 (and SIB11) is segmented into 4 segments where the first segment is scheduled adjacent to the MIB at SIB_POS=40 and the other three segments are scheduled after the MIB (SIB_POS=42, 44 and 46). The maximum time for a UE to read SIB5 will occur if the UE start reading the BCH at the SFN after the MIB located prior to the first segment of SIB5 (SIB_POS 32). Then the UE will not be able to read SIB5 until the second occurrence of SIB5, which will happen at SIB_POS 46 + 1280ms. This gives that the maximum time for the UE to read the relevant system info will be 1420ms ((SIB_POS 46 ñ SIB_POS 32)*10ms +1280ms).

8.2.2.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.2.2.2.3: Scenario 2: Test parameters for Cell re-selection multi carrier multi cell, test requirements

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2

UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-9.3		-9.3		-10.8		-10.8		-10.8		-10.8	
PCCPCH_Ec/Ior	dB	-11.3		-11.3		-12.8		-12.8		-12.8		-12.8	
SCH_Ec/Ior	dB	-11.3		-11.3		-12.8		-12.8		-12.8		-12.8	
PICH_Ec/Ior	dB	-14.3		-14.3		-15.8		-15.8		-15.8		-15.8	
OCNS_Ec/Ior	dB	-1.13		-1.13		-0.77		-0.77		-0.77		-0.77	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	-3.40	+4.80	+4.80	-3.40	-7.40	-3.00	-7.40	-3.00	-3.00	-7.40	-3.00	-7.40
$\hat{I}_{or}$	dBm	-73.4	-67.0	-67.0	-73.4	-77.4	-74.8	-77.4	-74.8	-74.8	-77.4	-74.8	-77.4
I_{oc}	dBm/3.84 MHz	-70.0	-71.8	-71.8	-70.0	-70.0	-71.8	-70.0	-71.8	-71.8	-70.0	-71.8	-70.0
CPICH_Ec/Io *Note 1*	dB	-15.3	-11.5	-11.5	-15.3	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8

All other parameters and conditions specified in table 8.2.2.2.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

<End of modified section>

<Start of next modified section>

8.3.5 Cell Re-selection in CELL_FACH

8.3.5.1 One frequency present in neighbour list

8.3.5.1.1 Definition and applicability

The cell re-selection delay is defined as the time between the occurrence of an event which will trigger Cell Reselection process and the moment in time when the UE starts sending the the preambles on the PRACH for sending RRC CELL UPDATE message to the UTRAN.

The requirements and this test apply to the FDD UE.

8.3.5.1.2 Minimum requirements

The cell re-selection delay shall be less than 1.6 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

If a cell has been detectable at least $T_{identify,intra}$, the cell reselection delay in CELL_FACH state to a cell in the same frequency shall be less than

$$T_{reselection,\,intra} = T_{Measurement\_Period\ Intra} + T_{IU} + 20 + T_{SI} + T_{RA}\ \text{ms}$$

where

$T_{Measurement\_Period\ Intra}$ = 200 ms.

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. 1280 ms is assumed in this test case.

T_{RA} = The additional delay caused by the random access procedure. T_{RA} is a delay is caused by the physical random access procedure described in TS 25.214 clause 6.1. A persistence value is assumed to be 1 in this test case and therefore T_{RA} in this test case is 40 ms.

These requirements assume radio conditions to be sufficient, so reading of system information can be done without errors.

The normative reference for this requirement is TS 25.133 [2] clauses 5.5.2.1.1 and A.5.5.1.

8.3.5.1.3 Test purpose

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL_FACH state in the single carrier case

8.3.5.1.4 Method of test

8.3.5.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.5.1.1 to 8.3.5.1.5. The UE is requested to monitor neighbouring cells on 1 carrier. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms.

Table 8.3.5.1.1: General test parameters for Cell Re-selection in CELL_FACH, one freq. in neighbour list

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
Access Service Class (ASC#0) ñ Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
T1		s	15	
T2		s	15	

The transport and physical parameters of the S-CCPCH carrying the FACH are defined in table 8.3.5.1.2 and table 8.3.5.1.3.

Table 8.3.5.1.2: Physical channel parameters for S-CCPCH, one freq. in neighbour list

Parameter	Unit	Level
Channel bit rate	kbps	60
Channel symbol rate	ksps	30
Slot Format #I	-	4
TFCI	-	OFF
Power offsets of TFCI and Pilot fields relative to data field	dB	0

Table 8.3.5.1.3: Transport channel parameters for S-CCPCH, one freq. in neighbour list

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	Ω
Rate Matching attribute	256
Size of CRC	16
Position of TrCH in radio frame	Fixed

Table 8.3.5.1.4: Cell specific conditions for Cell Re-selection in CELL_FACH, one freq. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
S-CCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
OCNS_Ec/Ior	dB	-1.295		-1.295		-1.295		-1.295		-1.295		-1.295	
$\hat{I}_{or}/I_{oc}$	dB	7.3	10.27	10.27	7.3	0.27		0.27		0.27		0.27	
$\hat{I}_{or}$ (Note 1)	dBm	-62.73	-59.73	-59.73	-62.73	-69.73		-69.73		-69.73		-69.73	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-23		-23		-23		-23	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dBm	21		21		21		21		21		21	
Qoffset $2_{s,n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
IE "FACH Measurement occasion info"		not sent		not sent		not sent		not sent		not sent		not sent	

Note 1 The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.5.1.4.2 Procedure

1) The SS activates cell 1-6 with RF parameters set up according to T1 in table 8.3.5.1.5.

2) The UE is switched on.

3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.5 to place the UE in the CELL_FACH state on Cell 2 and the SS waits for this process to complete.

4) After 15 seconds from completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.1.5.

5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.84~~1.7~~ s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.1.5.

8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.84~~1.7~~ s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved .

NOTE 1: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum time to read~~repetition period of~~ the relevant system info blocks that needs to be received by the UE to camp on a cell is 1420~~1280~~ms (see note 2) and the maximum RRC procedure delay for reception system information block is 100ms, 1520~~1380~~ ms is assumed in this test case. Therefore the cell re-selection delay shall be less than 1.84~~1.7~~ s.(Minimum requirement + 240~~100~~ms). Specific Message Contents

NOTE 2: The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms. The Master Information Block (MIB) is repeated every 8 frame and SIB5 (and SIB11) is segmented into 4 segments where the first segment is scheduled adjacent to the MIB at SIB_POS=40 and the other three segments are scheduled after the MIB (SIB_POS=42, 44 and 46). The maximum time for a UE to read SIB5 will occur if the UE start reading the BCH at the SFN after the MIB located prior to the first segment of SIB5 (SIB_POS 32). Then the UE will not be able to read SIB5 until the second occurrence of SIB5, which will happen at SIB_POS 46 + 1280ms. This gives that the maximum time for the UE to read the relevant system info will be 1420ms ((SIB_POS 46 ñ SIB_POS 32)*10ms +1280ms).

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Contents of CELL UPDATE CONFIRM message for CELL_FACH

Information Element	Value/remark
RRC transaction identifier Activation time New C-RNTI	0 Not Present 010101010101010 B
RRC State indicator	CELL_FACH

8.3.5.1.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.5.1.5: Cell specific test requirements for Cell Re-selection in CELL_FACH, one freq. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.5		-10.5		-10.5		-10.5	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.5		-15.5		-15.5		-15.5	
S-CCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
OCNS_Ec/Ior	dB	-1.52		-1.52		-1.13		-1.13		-1.13		-1.13	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	7.0	10.4	10.4	7.0	0.3		0.3		0.3		0.3	
$\hat{I}_{or}$	dBm	-63.0	-59.6	-59.6	-63.0	-69.7		-69.7		-69.7		-69.7	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io *Note 1*	dB	-15.7	-12.3	-12.3	-15.7	-23.5		-23.5		-23.5		-23.5	

All other parameters and conditions specified in table 8.3.5.1.4 are unchanged.

Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

Note 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.5.2 Two frequencies present in the neighbour list

8.3.5.2.1 Definition and applicability

The cell re-selection delay is defined as the time between the occurrence of an event which will trigger Cell Reselection process and the moment in time when the UE starts sending the the preambles on the PRACH for sending RRC CELL UPDATE message to the UTRAN.

The requirements and this test apply to the FDD UE.

8.3.5.2.2 Minimum requirements

The cell re-selection delay shall be less than 1.9 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

If a cell has been detectable at least $T_{identify,inter}$, the cell reselection delay in CELL_FACH state to a FDD cell on a different frequency shall be less than

$$T_{reselection,\,inter} = T_{Measurement\ inter} + T_{IU} + 20 + T_{SI} + T_{RA}\ \text{ms}$$

where

$T_{Measurement\_inter}$ is 480 ms in this case

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. 1280 ms is assumed in this test case.

T_{RA} = The additional delay caused by the random access procedure. T_{RA} is a delay is caused by the physical random access procedure described in TS 25.214 clause 6.1. A persistence value is assumed to be 1 in this test case and therefore T_{RA} in this test case is 40 ms.

These requirements assume radio conditions to be sufficient, so that reading of system information can be done without errors.

The normative reference for this requirement is TS 25.133 [2] clauses 5.5.2.1.2 and A.5.5.2.

8.3.5.2.3 Test purpose

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL_FACH state in the single carrier case

8.3.5.2.4 Method of test

8.3.5.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.5.2.1 to 8.3.5.2.5. The UE is requested to monitor neighbouring cells on 2 carriers. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms

Table 8.3.5.2.1: General test parameters for Cell Re-selection in CELL_FACH, two freqs. in neighbour list

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
Access Service Class (ASC#0) ñ Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
T1		s	15	
T2		s	15	

The transport and physical parameters of the S-CCPCH carrying the FACH are defined in table 8.3.5.2.2 and table 8.3.5.2.3.

Table 8.3.5.2.2: Physical channel parameters for S-CCPCH, two freqs. in neighbour list

Parameter	Unit	Level
Channel bit rate	kbps	60
Channel symbol rate	ksps	30
Slot Format #I	-	4
TFCI	-	OFF
Power offsets of TFCI and Pilot fields relative to data field	dB	0

Table 8.3.5.2.3: Transport channel parameters for S-CCPCH, two freqs. in neighbour list

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	Ω
Rate Matching attribute	256
Size of CRC	16
Position of TrCH in radio frame	Fixed

Table 8.3.5.2.4: Cell specific conditions for Cell re-selection in CELL_FACH state, two freqs. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
S-CCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
OCNS_Ec/Ior	dB	-1.295		-1.295		-1.295		-1.295		-1.295		-1.295	
$\hat{I}_{or}/I_{oc}$	dB	-1.8	2.2	2.2	-1.8	-6.8	-4.8	-6.8	-4.8	-4.8	-6.8	-4.8	-6.8
$\hat{I}_{or}$ (Note 1)	dBm	-71.85	-67.75	-67.75	-71.85	-76.85	-74.75	-76.85	-74.75	-74.75	-76.85	-74.75	-76.85
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-15	-13	-13	-15	-20		-20		-20		-20	
Propagation Condition		AWGN											
Cell_selection_ and_reselection_ quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_ MAX_RACH	dBm	21		21		21		21		21		21	
$Qoffset2_{s,n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
Sintersearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
IE "FACH Measurement occasion info"		sent		sent		sent		sent		Sent		sent	
FACH Measurement occasion cycle length coefficient		3		3		3		3		3		3	
Inter-frequency FDD measurement indicator		TRUE		TRUE		TRUE		TRUE		TRUE		TRUE	
Inter-frequency TDD measurement indicator		FALSE		FALSE		FALSE		FALSE		FALSE		FALSE	

Note 1 The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.5.2.4.2 Procedure

1) The RF parameters for cell 1 are set up according to T1 in table 8.3.5.2.5.

2) The UE is switched on.

3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.5 to place the UE in the CELL_FACH state on Cell 2 and the SS waits for this process to complete.

4) After 15 seconds from completion of step3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.2.5.

5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 2.0 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.2.5.

8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 2.14~~2.0~~ s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE 1: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum time to read~~repetition period of~~ the relevant system info blocks that needs to be received by the UE to camp on a cell is 1420~~1280~~ms (see note 2) and the maximum RRC procedure delay for reception system information block is 100ms, 1520~~1380~~ ms is assumed in this test case. Therefore the cell re-selection delay shall be less than 2.14~~0~~ s.(Minimum requirement + 240~~100~~ms).

NOTE 2: The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms. The Master Information Block (MIB) is repeated every 8 frame and SIB5 (and SIB11) is segmented into 4 segments where the first segment is scheduled adjacent to the MIB at SIB_POS=40 and the other three segments are scheduled after the MIB (SIB_POS=42, 44 and 46). The maximum time for a UE to read SIB5 will occur if the UE start reading the BCH at the SFN after the MIB located prior to the first segment of SIB5 (SIB_POS 32). Then the UE will not be able to read SIB5 until the second occurrence of SIB5, which will happen at SIB_POS 46 + 1280ms. This gives that the maximum time for the UE to read the relevant system info will be 1420ms ((SIB_POS 46 ñ SIB_POS 32)*10ms +1280ms).

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Contents of CELL UPDATE CONFIRM message for CELL_FACH

Information Element	Value/remark
RRC transaction identifier Activation time New C-RNTI	0 Not Present 010101010101010 B
RRC State indicator	CELL_FACH

8.3.5.2.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.5.2.5: Cell specific test requirements for Cell re-selection in CELL_FACH state, two freqs. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.7		-10.7		-10.7		-10.7	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.7		-15.7		-15.7		-15.7	
S-CCPCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
OCNS_Ec/Ior	dB	-1.52		-1.52		-1.08		-1.08		-1.08		-1.08	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	-1.80	+4.64	+4.64	-1.80	-6.80	-3.16	-6.80	-3.16	-3.16	-6.80	-3.16	-6.80
$\hat{I}_{or}$	dBm	-71.8	-67.0	-67.0	-71.8	-76.8	-74.8	-76.8	-74.8	-74.8	-76.8	-74.8	-76.8
I_{oc}	dBm/3.84 MHz	-70.0	-71.6	-71.6	-70.0	-70.0	-71.6	-70.0	-71.6	-71.6	-70.0	-71.6	-70.0
CPICH_Ec/Io *Note 1*	dB	-14.4	-11.6	-11.6	-14.4	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7

All other parameters and conditions specified in table 8.3.5.2.4 are unchanged.

Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

Note 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

<End of modified section>

<Start of next modified section>

8.3.6 Cell Re-selection in CELL_PCH

8.3.6.1 One frequency present in the neighbour list

8.3.6.1.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the FDD UE.

8.3.6.1.2 Minimum requirements

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

$T_{evaluateFDD}$	See table 4.1 in TS 25.133 [2] clause 4.2.2.
T_{SI}	Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 5.6.2 and A.5.6.1.

8.3.6.1.3 Test purpose

To verify that the UE meets the minimum requirements and is capable of camping on to a new cell, within the required time, when the preferred cell conditions change.

8.3.6.1.4 Method of test

8.3.6.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 1 carrier and 6 cells as given in tables 8.3.6.1.1 to 8.3.6.1.3. The UE is requested to monitor neighbouring cells on 1 carrier. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms.

Table 8.3.6.1.1: General test parameters for Cell Re-selection in CELL_PCH, one freq. in neighbour list

Parameter		Unit	Value	Comment
initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
final condition	Active cell		Cell1	
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	T1 need to be defined so that cell re-selection reaction time is taken into account.
T2		s	15	T2 need to be defined so that cell re-selection reaction time is taken into account.

Table 8.3.6.1.2: Cell specific test parameters for Cell re-selection in CELL_PCH state, one freq. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
OCNS_Ec/Ior	dB	-0.941		-0.941		-0.941		-0.941		-0.941		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	7.3	10.27	10.27	7.3	0.27		0.27		0.27		0.27	
$\hat{I}_{or}$ (Note 1)	dBm	-62.73	-59.73	-59.73	-62.73	-69.73		-69.73		-69.73		-69.73	
I_{oc}	dBm/ 3.84MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-23		-23		-23		-23	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dBm	21		21		21		21		21		21	
$Qoffset2_{s, n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	

Note 1 The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.6.1.4.2 Procedure

1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.6.1.3 and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

3) An RRC connection is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the CELL_PCH state on Cell 2 and then the SS waits for this process to complete.

4) After 15 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.6.1.3.

5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

7) After a total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.6.1.3.

8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE 1: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum time to read~~repetition period of~~ the relevant system info blocks that needs to be received by the UE to camp on a cell is 1420~~1280~~ms (see note 2) and the maximum RRC procedure delay for reception system information block is 100ms, 1520~~1380~~ ms is assumed in this test case. Therefore this gives a total of 7.92~~7.78~~s (Minimum requirement + 240~~100~~ms), allow 8s in the test case.

NOTE 2: The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms. The Master Information Block (MIB) is repeated every 8 frame and SIB5 (and SIB11) is segmented into 4 segments where the first segment is scheduled adjacent to the MIB at SIB_POS=40 and the other three segments are scheduled after the MIB (SIB_POS=42, 44 and 46). The maximum time for a UE to read SIB5 will occur if the UE start reading the BCH at the SFN after the MIB located prior to the first segment of SIB5 (SIB_POS 32). Then the UE will not be able to read SIB5 until the second occurrence of SIB5, which will happen at SIB_POS 46 + 1280ms. This gives that the maximum time for the UE to read the relevant system info will be 1420ms ((SIB_POS 46 ñ SIB_POS 32)*10ms +1280ms).

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION (Step 3)

Information Element	Value/remark
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	7
Downlink information for each radio link - Primary CPICH info - Primary scrambling code	 Reference to TS 34.108 clause 6.1 ìDefault settings (FDD)î

Contents of CELL UPDATE CONFIRM message for CELL_PCH

Information Element	Value/remark
RRC transaction identifier Activation time RRC State indicator UTRAN DRX cycle length coefficient	0 Not Present CELL_PCH 7

8.3.6.1.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.6.1.3: Cell specific test requirements for Cell re-selection in CELL_PCH state, one freq. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.5		-10.5		-10.5		-10.5	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.5		-15.5		-15.5		-15.5	
OCNS_Ec/Ior	dB	-1.10		-1.10		-0.83		-0.83		-0.83		-0.83	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	7.00	10.40	10.40	7.00	0.30		0.30		0.30		0.30	
$\hat{I}_{or}$	dBm	-63.0	-59.6	-59.6	-63.0	-69.7		-69.7		-69.7		-69.7	
I_{oc}	dBm / 3,84 MHz	-70											
CPICH_Ec/Io *Note 1*	dB	-15.7	-12.3	-12.3	-15.7	-23.5		-23.5		-23.5		-23.5	

All other parameters and conditions specified in table 8.3.6.1.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.6.2 Two frequencies present in the neighbour list

8.3.6.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the FDD UE.

8.3.6.2.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

$T_{evaluateFDD}$ See table 4.1 in TS 25.133 [2] clause 4.2.2.
T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 5.6.2 and A.5.6.2.

8.3.6.2.3 Test purpose

To verify that the UE meets the minimum requirement and is capable of camping on to a new cell, within the required time, when the preferred cell conditions change.

8.3.6.2.4 Method of test

8.3.6.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 2 carriers and 6 cells as given in tables 8.3.6.2.1 to 8.3.6.2.3. The UE is requested to monitor neighbouring cells on 2 carriers. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms.

Table 8.3.6.2.1: General test parameters for Cell Re-selection in CELL_PCH, two freqs. in neighbour list

Parameter		Unit	Value	Comment
initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
final condition	Active cell		Cell1	
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	30	T1 need to be defined so that cell re-selection reaction time is taken into account.
T2		s	15	T2 need to be defined so that cell re-selection reaction time is taken into account.

Table 8.3.6.2.2: Cell specific test parameters for Cell re-selection in CELL_PCH state, two freqs. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
OCNS_Ec/Ior	dB	-0.941		-0.941		-0.941		-0.941		-0.941		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	-3.4	2.2	2.2	-3.4	-7.4	-4.8	-7.4	-4.8	-4.8	-7.4	-4.8	-7.4
$\hat{E}_{or}$ (Note 1)	dBm	-73.39	-67.75	-67.75	-73.39	-77.39	-74.75	-77.39	-74.75	-74.75	-77.39	-74.75	-77.39
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-20		-20		-20		-20	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dBm	21		21		21		21		21		21	
$Qoffset2_{s,n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
Sintersearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	

Note 1 The nominal $\hat{E}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.6.2.4.2 Procedure

1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.6.2.3 and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

3) A RRC connection is set up according the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in CELL_PCH state on cell 2. The SS waits for this process to complete.

4) After 30 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.6.2.3.

5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

7) After a total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.6.2.3.

8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) After a total of 15 s from the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.6.2.3.

11) Steps 5 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE 1: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

NOTE 2: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1420~~1280~~ms (see note 3) and the maximum RRC procedure delay for reception system information block is 100ms, 1520~~1380~~ ms is assumed in this test case. Therefore this gives a total of 7.82~~7.78~~s (Minimum requirement + 240~~100~~ms), allow 8s in the test case.

NOTE 3: The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms. The Master Information Block (MIB) is repeated every 8 frame and SIB5 (and SIB11) is segmented into 4 segments where the first segment is scheduled adjacent to the MIB at SIB_POS=40 and the other three segments are scheduled after the MIB (SIB_POS=42, 44 and 46). The maximum time for a UE to read SIB5 will occur if the UE start reading the BCH at the SFN after the MIB located prior to the first segment of SIB5 (SIB_POS 32). Then the UE will not be able to read SIB5 until the second occurrence of SIB5, which will happen at SIB_POS 46 + 1280ms. This gives that the maximum time for the UE to read the relevant system info will be 1420ms ((SIB_POS 46 ñ SIB_POS 32)*10ms +1280ms).

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION (Step 3)

Information Element	Value/remark
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	7
Downlink information for each radio link - Primary CPICH info - Primary scrambling code	 Reference to TS 34.108 clause 6.1 ìDefault settings (FDD)î

Contents of CELL UPDATE CONFIRM message for CELL_PCH

Information Element	Value/remark
RRC transaction identifier Activation time RRC State indicator UTRAN DRX cycle length coefficient	0 Not Present CELL_PCH 7

8.3.6.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.6.2.3: Cell specific test requirements for Cell re-selection in CELL_PCH state, two freqs. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-9.3		-9.3		-10.8		-10.8		-10.8		-10.8	
PCCPCH_Ec/Ior	dB	-11.3		-11.3		-12.8		-12.8		-12.8		-12.8	
SCH_Ec/Ior	dB	-11.3		-11.3		-12.8		-12.8		-12.8		-12.8	
PICH_Ec/Ior	dB	-14.3		-14.3		-15.8		-15.8		-15.8		-15.8	
OCNS_Ec/Ior	dB	-1.13		-1.13		-0.77		-0.77		-0.77		-0.77	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	-3.40	+4.80	+4.80	-3.40	-7.40	-3.00	-7.40	-3.00	-3.00	-7.40	-3.00	-7.40
$\hat{I}_{or}$	dBm	-73.4	-67.0	-67.0	-73.4	-77.4	-74.8	-77.4	-74.8	-74.8	-77.4	-74.8	-77.4
I_{oc}	dBm/3.84 MHz	-70.0	-71.8	-71.8	-70.0	-70.0	-71.8	-70.0	-71.8	-71.8	-70.0	-71.8	-70.0
CPICH_Ec/Io *Note 1*	dB	-15.3	-11.5	-11.5	-15.3	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8

All other parameters and conditions specified in table 8.3.6.2.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.7 Cell Re-selection in URA_PCH

8.3.7.1 One frequency present in the neighbour list

8.3.7.1.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the URA UPDATE message with cause value "URA reselection" in the new cell.

The requirements and this test apply to the FDD UE.

8.3.7.1.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

$T_{evaluateFDD}$ See table 4.1 in TS 25.133 [2] clause 4.2.2.
T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 5.7.2 and A.5.7.1.

8.3.7.1.3 Test purpose

To verify that the UE meets the minimum requirement and is capable of camping on to a new cell, within the required time, when the preferred cell conditions change.

8.3.7.1.4 Method of test

8.3.7.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 1 carrier and 6 cells as given in tables 8.3.7.1.1 to 8.3.7.1.3. The UE is requested to monitor neighbouring cells on 1 carrier. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms. In System Information Block Type 2 cell1 and cell 2 URA identity is set to a different value.

Table 8.3.7.1.1: General test parameters for Cell Re-selection in URA_PCH, one freq. in neighbour list

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
SYSTEM INFORMATION BLOCK TYPE 2 - URA identity list - URA identity		-	 0000 0000 0000 0001(B) (Cell 1) 0000 0000 0000 0010(B) (Cell 2)	
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
DRX cycle length		s	1,28	The value shall be used for all cells in the test.
T1		s	15	T1 need to be defined so that cell re-selection reaction time is taken into account.
T2		s	15	T2 need to be defined so that cell re-selection reaction time is taken into account.

Table 8.3.7.1.2: Cell specific test parameters for Cell re-selection in URA_PCH state, one freq. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
OCNS_Ec/Ior	dB	-0,941		-0,941		-0,941		-0,941		-0,941		-0,941	
$\hat{I}_{or}/I_{oc}$	dB	7,3	10,27	10,27	7,3	0,27		0,27		0,27		0,27	
$\hat{I}_{or}$ (Note 1)	dBm	-62.73	-59.73	-59.73	-62.73	-69.73		-69.73		-69.73		-69.73	
I_{oc}	dBm / 3,84 MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-23		-23		-23		-23	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dB	21		21		21		21		21		21	
$Qoffset2_{s,n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	S	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	

Note 1 The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.7.1.4.2 Procedure

1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.7.1.3 and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

3) An RRC connection is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the URA_PCH state on Cell 2 and then the SS waits for this process to complete.

4) After 15 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.7.1.3.

5) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 7.

7) After a total of another 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.7.1.3.

8) If the UE responds on Cell 2 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE 1: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum time to read~~repetition period of~~ the relevant system info blocks that needs to be received by the UE to camp on a cell is 1420~~1280~~ms and the maximum RRC procedure delay for reception system information block is 100ms, 1520~~1380~~ ms is assumed in this test case. Therefore this gives a total of 7.92~~7.78~~s (Minimum requirement + 240~~100~~ms), allow 8s in the test case.

NOTE 2: The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms. The Master Information Block (MIB) is repeated every 8 frame and SIB5 (and SIB11) is segmented into 4 segments where the first segment is scheduled adjacent to the MIB at SIB_POS=40 and the other three segments are scheduled after the MIB (SIB_POS=42, 44 and 46). The maximum time for a UE to read SIB5 will occur if the UE start reading the BCH at the SFN after the MIB located prior to the first segment of SIB5 (SIB_POS 32). Then the UE will not be able to read SIB5 until the second occurrence of SIB5, which will happen at SIB_POS 46 + 1280ms. This gives that the maximum time for the UE to read the relevant system info will be 1420ms ((SIB_POS 46 ñ SIB_POS 32)*10ms +1280ms).

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION (Step 3)

Information Element	Value/remark
RRC State Indicator	URA PCH
UTRAN DRX cycle length coefficient	7

Contents of URA UPDATE CONFIRM message for URA_PCH

Information Element	Value/remark
RRC transaction identifier	0
RRC state indicator	URA_PCH
UTRAN DRX cycle length coefficient	7
URA identity	0000000000000010 B

8.3.7.1.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of 95 % of the cases.

Table 8.3.7.1.3: Cell specific test requirements for Cell re-selection in URA_PCH state, one freq. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.5		-10.5		-10.5		-10.5	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.5		-15.5		-15.5		-15.5	
OCNS_Ec/Ior	dB	-1.10		-1.10		-0.83		-0.83		-0.83		-0.83	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	7.00	10.40	10.40	7.00	0.30		0.30		0.30		0.30	
$\hat{I}_{or}$	dBm	-63.0	-59.6	-59.6	-63.0	-69.7		-69.7		-69.7		-69.7	
I_{oc}	dBm / 3,84 MHz	-70											
CPICH_Ec/Io *Note 1*	dB	-15.7	-12.3	-12.3	-15.7	-23.5		-23.5		-23.5		-23.5	

All other parameters and conditions specified in table 8.3.7.1.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.7.2 Two frequencies present in the neighbour list

8.3.7.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the URA UPDATE message with cause value "URA reselection" in the new cell.

The requirements and this test apply to the FDD UE.

8.3.7.2.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

$T_{evaluateFDD}$ See table 4.1 in TS 25.133 [2] clause 4.2.2.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 5.7.2 and A.5.7.2.

8.3.7.2.3 Test purpose

To verify that the UE meets the minimum requirement and is capable of camping on to a new cell, within the required time, when the preferred cell conditions change.

8.3.7.2.4 Method of test

8.3.7.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 2 carriers and 6 cells as given in tables 8.3.7.2.1 to 8.3.7.2.3. The UE is requested to monitor neighbouring cells on 2 carriers. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms. In System Information Block Type 2 in cell 1 and cell 2 URA identity is set to different value.

Table 8.3.7.2.1: General test parameters for Cell Re-selection in URA_PCH, two freqs. in neighbour list

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell2	
	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Initial condition	Active cell Cell2		Cell1	
SYSTEM INFORMATION BLOCK TYPE 2 - URA identity list - URA identity		-	0000 0000 0000 0001(B) (Cell 1) 0000 0000 0000 0010(B) (Cell 2)	
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
DRX cycle length		s	1,28	The value shall be used for all cells in the test.
T1		s	30	T1 need to be defined so that cell re-selection reaction time is taken into account.
T2		s	15	T2 need to be defined so that cell re-selection reaction time is taken into account.

Table 8.3.7.2.2: Cell specific test parameters for Cell Re-selection in URA_PCH state, two freqs. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
OCNS_Ec/Ior	dB	-0.941		-0.941		-0.941		-0.941		-0.941		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	-3.4	2.2	2.2	-3.4	-7.4	-4.8	-7.4	-4.8	-4.8	-7.4	-4.8	-7.4
$\hat{I}_{or}$ (Note 1)	dBm	-73.39	-67.75	-67.75	-73.39	-77.39	-74.75	-77.39	-74.75	-74.75	-77.39	-74.75	-77.39
I_{oc}	dBm / 3.84 MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-20		-20		-20		-20	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dB	21		21		21		21		21		21	
Qoffset2$_{s, n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
Sintersearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	

Note 1 The nominal $\hat{I}_{or}$ values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.7.2.4.2 Procedures

1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.7.2.3 and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

3) An RRC connection is set up according the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in URA_PCH state on cell 2. The SS waits for this process to complete.

4) After 30 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.7.2.3.

5) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 7.

7) After a total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.7.2.3.

8) If the UE responds on Cell 2 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 10.

10) After a total of 15 s from the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.7.2.3.

11) Steps 5 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE 1: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

NOTE 2: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum time to read~~repetition period of~~ the relevant system info blocks that needs to be received by the UE to camp on a cell is 1420~~1280~~ms (see note 3) and the maximum RRC procedure delay for reception system information block is 100ms, 1520~~1380~~ ms is assumed in this test case. Therefore this gives a total of 7.82~~7.78~~s (Minimum requirement + 240~~100~~ms), allow 8s in the test case.

NOTE 3: The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms. The Master Information Block (MIB) is repeated every 8 frame and SIB5 (and SIB11) is segmented into 4 segments where the first segment is scheduled adjacent to the MIB at SIB_POS=40 and the other three segments are scheduled after the MIB (SIB_POS=42, 44 and 46). The maximum time for a UE to read SIB5 will occur if the UE start reading the BCH at the SFN after the MIB located prior to the first segment of SIB5 (SIB_POS 32). Then the UE will not be able to read SIB5 until the second occurrence of SIB5, which will happen at SIB_POS 46 + 1280ms. This gives that the maximum time for the UE to read the relevant system info will be 1420ms ((SIB_POS 46 ñ SIB_POS 32)*10ms +1280ms).

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION (Step 3)

Information Element	Value/remark
RRC State Indicator	URA PCH
UTRAN DRX cycle length coefficient	7

Contents of URA UPDATE CONFIRM message for URA_PCH

Information Element	Value/remark
RRC transaction identifier	0
RRC state indicator	URA_PCH
UTRAN DRX cycle length coefficient	7
URA identity	0000000000000010 B

8.3.7.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Table 8.3.7.2.3: Cell specific test requirements for Cell re-selection in URA_PCH state, two freqs. in neighbour list

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-9.3		-9.3		-10.8		-10.8		-10.8		-10.8	
PCCPCH_Ec/Ior	dB	-11.3		-11.3		-12.8		-12.8		-12.8		-12.8	
SCH_Ec/Ior	dB	-11.3		-11.3		-12.8		-12.8		-12.8		-12.8	
PICH_Ec/Ior	dB	-14.3		-14.3		-15.8		-15.8		-15.8		-15.8	
OCNS_Ec/Ior	dB	-1.13		-1.13		-0.77		-0.77		-0.77		-0.77	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	-3.40	+4.80	+4.80	-3.40	-7.40	-3.00	-7.40	-3.00	-3.00	-7.40	-3.00	-7.40
$\hat{I}_{or}$	dBm	-73.4	-67.0	-67.0	-73.4	-77.4	-74.8	-77.4	-74.8	-74.8	-77.4	-74.8	-77.4
I_{oc}	dBm/3.84 MHz	-70.0	-71.8	-71.8	-70.0	-70.0	-71.8	-70.0	-71.8	-71.8	-70.0	-71.8	-70.0
CPICH_Ec/Io *Note 1*	dB	-15.3	-11.5	-11.5	-15.3	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8

All other parameters and conditions specified in table 8.3.7.2.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.1 RRC Re-establishment delay

8.4.1.1 Test 1

8.4.1.1.1 Definition and applicability

The UE Re-establishment delay requirement ($T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$) is defined as the time between the moment when radio link failure is considered by the UE, to when the UE starts to send preambles on the PRACH.

$T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set.
- the cell has been measured by the UE during the last 5 seconds.

The phase reference is the primary CPICH.

The requirements of this test apply to the FDD UE.

8.4.1.1.2 Minimum requirement

The Re-establishment delay $T_{RE\text{-}ESTABLISH}$ to a known cell shall be less than 1.9 s.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

$$T_{RE\text{-}ESTABLISH} = T_{RRC\text{-}RE\text{-}ESTABLISH} + T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ\text{-}KNOWN}.$$

where

$T_{RRC\text{-}RE\text{-}ESTABLISH}=$ 160ms+(N_{313}-1)*10ms+T_{313}

$T_{UE\text{-}RE\text{-}ESTABLISH\_REQ\text{-}KNOWN}$=50ms+$T_{search}$ + T_{SI} + T_{RA},

$N_{313}=$ 20

$T_{313}=$ 0s

$T_{search}=$ 100ms

T_{RA} = The additional delay caused by the random access procedure. 40 ms is assumed in this test case.

T_{SI} is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 1820ms, allow 1.9s in the test case.

8.4.1.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.4.1.1.4 Method of test

8.4.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.4.1.1, table 8.4.1.1.A , and table 8.4.1.2 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms. And DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consist of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table 8.4.1.1 General test parameters for RRC re-establishment delay, Test 1

Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference measurement channel 12.2 kbps	As specified in clause C.3.1 and C.2.1
Power Control		On	
Active cell, Initial condition		Cell 1	
Active cell, Final condition		Cell 2	
N313		20	
N315		1	
T313	Seconds	0	
Monitored cell list size		24	Monitored set shall only include intra frequency neighbours. NOTE: See Annex I for cell information.
Cell 2			Included in the monitored set
T_{SI}	ms	1280	See Annex I for the SIB repetition period of system infomation blocks.
Reporting frequency	Seconds	4	
T1	s	10	
T2	s	6	

Table 8.4.1.1.A Cell specific parameters for RRC re-establishment delay test, Test 1

Parameter	Unit	Cell 1	Cell 2
		T0	T0
Cell Frequency	ChNr	1	1
CPICH_Ec/Ior	dB	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12
SCH_Ec/Ior	dB	-12	-12
PICH_Ec/Ior	dB	-15	-15
DCH_Ec/Ior	dB	-17	-infinity
OCNS_Ec/Ior	dB	-1.049	-0.941
$\hat{I}_{or}/I_{oc}$	dB	2.39	-infinity
I_{oc}	dBm/ 3.84 MHz	-70	
CPICH_Ec/Io	dB	-12	-infinty
Propagation Condition		AWGN	

Table 8.4.1.2 Cell specific parameters for RRC re-establishment delay test, Test 1

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
Cell Frequency	ChNr	1		1	
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DCH_Ec/Ior	dB	-17	-Infinity	Not applicable	
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941	
$\hat{I}_{or}/I_{oc}$	dB	2,39	-Infinity	4,39	0,02
I_{oc}	dBm/ 3.84 MHz	-70			
CPICH_Ec/Io	dB	-15	-Infinity	-13	
Propagation Condition		AWGN			

8.4.1.1.4.2 Procedure

1) The RF parameters are set up according to T0.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 without Compressed mode parameters.

4) The RF parameters are setup according to T1.

5) 10 s after step4 has completed, the parameters are changed to that as described for T2.

6) If the UE responds on cell 2 within ~~2.0~~ 2.1 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.

7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.

8) After 6 seconds from the beginning of time period T2, the RF parameters are set up according to T0.

9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.

10) Repeat step 3-9 until the confidence level according to annex F.6.2 is achieved.

NOTE 1: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks is defined in 25.331 for a UTRAN cell. Since the maximum time~~repetition period of~~ to read the relevant system info blocks that needs to be received by the UE to camp on a cell is ~~1280ms~~1420ms (see note 2) and the maximum RRC procedure delay for reception system information block is 100ms, 1520~~1380~~ ms is assumed in this test case. Therefore this gives a total of 2060ms ~~1920ms~~(Minimum requirement + 240ms~~100ms~~), allow 2.1s in the test case.

NOTE 2: The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms. The Master Information Block (MIB) is repeated every 8 frame and SIB5 (and SIB11) is segmented into 4 segments where the first segment is scheduled adjacent to the MIB at SIB_POS=40 and the other three segments are scheduled after the MIB (SIB_POS=42, 44 and 46). The maximum time for a UE to read SIB5 will occur if the UE start reading the BCH at the SFN after the MIB located prior to the first segment of SIB5 (SIB_POS 32). Then the UE will not be able to read SIB5 until the second occurrence of SIB5, which will happen at SIB_POS 46 + 1280ms. This gives that the maximum time for the UE to read the relevant system info will be 1420ms ((SIB_POS 46 ñ SIB_POS 32)*10ms +1280ms).

8.4.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.1.2 Test 2

8.4.1.2.1 Definition and applicability

The UE Re-establishment delay requirement ($T_{UE\text{-}E\text{-}ESTABLISH\text{-}REQ}$) is defined as the time between the moment when radio link failure is considered by the UE, to when the UE starts to send preambles on the PRACH.

$T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set.
- the cell has been measured by the UE during the last 5 seconds.

The phase reference is the primary CPICH.

The requirements of this test apply to the FDD UE.

8.4.1.2.2 Minimum requirement

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

$$T_{RE\text{-}ESTABLISH} = T_{RRC\text{-}RE\text{-}ESTABLISH} + T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ\text{-}UNKNOWN}.$$

where

$T_{RRC-RE-ESTABLISH}$= 160ms+(N_{313}-1)*10ms+T_{313}

$T_{UE-RE-ESTABLISH-REQ-UNKNOWN}$=50ms+$T_{search}$*NF + T_{SI} + T_{RA},

N_{313}= 20

T_{313}= 0s

T_{search}= 800ms

NF is the number of different frequencies in the monitored set. 3 frequencies are assumed in this test case.

T_{RA} = The additional delay caused by the random access procedure. 40 ms is assumed in this test case.

T_{SI} is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms).1280 ms is assumed in this test case.

This gives a total of 4120ms, allow 4.2s in the test case.

8.4.1.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.4.1.2.4 Method of test

8.4.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.4.1.3 and table 8.4.1.4 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms. And DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table 8.4.1.3 General test parameters for RRC re-establishment delay, Test 2

Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference measurement channel 12.2 kbps	As specified in clause C.3.1 and C.2.1
Power Control		On	
Active cell, initial condition		Cell 1	
Active cell, final condition		Cell 2	
N313		20	
N315		1	
T313	Seconds	0	
Monitored cell list size		24	Monitored set shall include 2 additional frequencies. NOTE: See Annex I for cell information.
Cell 2			Cell 2 is not included in the monitored set. Cell 2 is located on one of the 2 additional frequencies of the monitored set.
T_{SI}	ms	1280	See Annex I for the SIB repetition period of system infomation blocks.
Reporting frequency	Seconds	4	
T1	s	10	
T2	s	6	

Table 8.4.1.4 Cell specific parameters for RRC re-establishment delay test, Test 2

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
Cell Frequency	ChNr	1		2	
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DCH_Ec/Ior	dB	-17	-Infinity	Not applicable	
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941	
$\hat{I}_{or}/I_{oc}$	dB	-3,35	-Infinity	-Infinity	0,02
I_{oc}	dBm/ 3.84 MHz	-70			
CPICH_Ec/Io	dB	-15	-Infinity	-Infinity	-13
Propagation Condition		AWGN			

8.4.1.2.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 without Compressed mode parameters.

4) 10 s after step3 has completed, the parameters are changed to that as described for T2.

5) If the UE responds on cell 2 within ~~4.3~~4.4 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.

6) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.

7) After 6 seconds the RF parameters are set up according to T1.

8) The SS shall wait for 30s to make the UE complete cell reselection to cell1.

9) Repeat step 3-8 until the confidence level according to annex F.6.2 is achieved.

NOTE 1: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks is defined in 25.331 for a UTRAN cell. Since the maximum time~~repetition period of~~ to read the relevant system info blocks that needs to be received by the UE to camp on a cell is ~~1280~~1420ms (see note 2) and the maximum RRC procedure delay for reception system information block is 100ms, 1520ms~~1380~~ ms is assumed in this test case. Therefore this gives a total of ~~4220~~4360ms (Minimum requirement + ~~100~~240ms), allow ~~4.3~~4.4s in the test case.

NOTE 2: The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms. The Master Information Block (MIB) is repeated every 8 frame and SIB5 (and SIB11) is segmented into 4 segments where the first segment is scheduled adjacent to the MIB at SIB_POS=40 and the other three segments are scheduled after the MIB (SIB_POS=42, 44 and 46). The maximum time for a UE to read SIB5 will occur if the UE start reading the BCH at the SFN after the MIB located prior to the first segment of SIB5 (SIB_POS 32). Then the UE will not be able to read SIB5 until the second occurrence of SIB5, which will happen at SIB_POS 46 + 1280ms. This gives that the maximum time for the UE to read the relevant system info will be 1420ms ((SIB_POS 46 ñ SIB_POS 32)*10ms +1280ms).

8.4.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.