3GPP TSG RAN Meeting #28 **RP-050269**

Quebec, Canada, 1 - 3 June 2005

Title **CRs to 34.121 for approval Batch 1**

Source **3GPP TSG RAN WG5 (Testing)**

Agenda Item **7.6.5**

WG Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R5-050671	34.121	525	-	F	Rel-6	6.0.0	CR to 34.121: Correction to operating conditions for TCs: 5.13.1, 5.13A.1 & 5.13.2	TEI
R5-050842	34.121	526	-	F	Rel-6	6.0.0	Removal of TGPL2	TEI
R5-050816	34.121	527	-	F	Rel-6	6.0.0	Clarification of the interfering signal in 6.5 Blocking Characteristics and 6.7 Intermodulation Characteristics	TEI
R5-050615	34.121	528	-	F	Rel-6	6.0.0	Addition of test tolerances to TC 7.11	TEI
R5-050820	34.121	529	-	F	Rel-6	6.0.0	Correction to 7.7.2 Combining of TPC commands from radio links of different radio link sets	TEI
R5-050833	34.121	530	-	F	Rel-6	6.0.0	Clarification of TS34.121 Closed Loop Transmit Diversity test cases	TEI
R5-050843	34.121	531	-	F	Rel-6	6.0.0	CR to 34.121: Clarification of Annex C.6 for BLER measurement configurations	TEI
R5-050850	34.121	532	-	F	Rel-6	6.0.0	Change of 34.121 test case 7.8.2	TEI
R5-050571	34.121	533	-	F	Rel-6	6.0.0	Correction to TS34.121 TC 8.6.1.2	TEI
R5-050573	34.121	534	-	F	Rel-6	6.0.0	Correction to TS34.121 TC 8.7.6.1	TEI
R5-050652	34.121	535	-	F	Rel-6	6.0.0	Corrections to test cases having power control ON.	TEI
R5-050822	34.121	536	-	F	Rel-6	6.0.0	Correction to TS34.121 TC 8.6.1.3	TEI
R5-050823	34.121	537	-	F	Rel-6	6.0.0	Modification of call setup procedure for inter-RAT connected state RRM tests	TEI
R5-050825	34.121	538	-	F	Rel-6	6.0.0	Addition of test tolerances and corrections for 8.6.2.2 Correct reporting of neighbours in fading propagation condition	TEI
R5-050829	34.121	539	-	F	Rel-6	6.0.0	CR to 34.121: GSM band corrections	TEI
R5-050837	34.121	540	-	F	Rel-6	6.0.0	Statistical approach for 8.7.3A GSM Carrier RSSI	TEI
R5-050821	34.121	541	-	F	Rel-6	6.0.0	CR to 34.121 Rel-6; Update of the MEASUREMENT REPORT message to RRC release 5	TEI
R5-050830	34.121	542	-	F	Rel-6	6.0.0	CR to 34.121: Corrections to Annex C and Annex E	TEI
R5-050814	34.121	543	-	F	REL -6	6.0.0	CR to TC 5.9 Spectrum emission mask	TEI

WG Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R5-050575	34.121	544	-	F	Rel-6	6.0.0	Clarifications of TS34.121 section 9.1	TEI

3GPP TSG-RAN WG5 Meeting #27 **Tdoc ⌘ R5-050671**

United Kindom , Bath 25 - 29 Apr 2005

CR-Form-v7

CHANGE REQUEST

⌘ **34.121**	**CR 525**	⌘ **rev**	**-** ⌘	Current version:	**6.0.0** ⌘

*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 [X] Core Network [ ]

Title:	⌘ CR to 34.121: Correction to operating conditions for TCs: 5.13.1, 5.13A.1 & 5.13.2		
Source:	⌘ 3GPP TSG RAN WG5 (Testing)		
Work item code:	⌘ TEI6	***Date:*** ⌘	25/04/2005
Category:	⌘ **F**	***Release:*** ⌘	Rel-6

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:	⌘ Currently the operating conditions for test cases 5.13.1, 5.13A.1 and 5.13.2 are not correct.
Summary of change:	⌘ The test environment currently state: normal, TL/VL, TL/VH, TH/VL, TH/VH, vibration. Based on the core requirements in TS25.101 the only test environment necessary is normal. Therefore, the test environment was changes to only have normal condition.
Consequences if not approved:	⌘ The operating conditions for these test cases will be incorrect.

Clauses affected:	⌘ 5.13.1, 5.13A.1, 5.13.2				
		Y	**N**		
Other specs Affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

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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.

5.13 Transmit Modulation

Transmit modulation defines the modulation quality for expected in-channel RF transmissions from the UE. The requirements apply to all transmissions including the PRACH/PCPCH pre-amble and message parts and all other expected transmissions. In cases where the mean power of the RF signal is allowed to change versus time e.g. PRACH, DPCH in compressed mode, change of TFC and inner loop power control, the EVM and Peak Code Domain Error requirements do not apply during the 25 us period before and after the nominal time when the power is expected to change.

5.13.1 Error Vector Magnitude (EVM)

5.13.1.1 Definition and applicability

The Error Vector Magnitude is a measure of the difference between the reference waveform and the measured waveform. This difference is called the error vector. Both waveforms pass through a matched Root Raised Cosine filter with bandwidth 3,84 MHz and roll-off α=0,22. Both waveforms are then further modified by selecting the frequency, absolute phase, absolute amplitude and chip clock timing so as to minimise the error vector. The EVM result is defined as the square root of the ratio of the mean error vector power to the mean reference power expressed as a %.

For Release 99 and Release 4 the measurement interval is one timeslot.

For Release 5 and later releases where tests may include power changes, the measurement interval is further clarified as being one timeslot except when the mean power between slots is expected to change whereupon the measurement interval is reduced by 25 µs at each end of the slot. For the PRACH and PCPCH preambles the measurement interval is 4096 chips less 25 µs at each end of the burst (3904 chips).The requirements and this test apply to all types of UTRA for the FDD UE.

5.13.1.2 Minimum Requirements

The EVM shall not exceed 17,5 % for the parameters specified in table 5.13.1.

Table 5.13.1: Parameters for EVM

Parameter	Level / Status	Unit
Output power	≥ –20	dBm
Operating conditions	Normal conditions	
Power control step size	1	dB

The normative reference for this requirement is TS 25.101 [1] clause 6.8.2.1.

5.13.1.3 Test purpose

To verify that the EVM does not exceed 17,5 % for the specified parameters in table 5.13.1.

An excess EVM increases transmission errors in the up link own channel.

5.13.1.4 Method of test

5.13.1.4.1 Initial conditions

Test environment: normal~~, TL/VL, TL/VH, TH/VL, TH/VH, vibration~~; see clauses G.2.1, G.2.2 and G.2.3.

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.

5.13.1.4.2 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 EVM using Global In-Channel Tx-Test (annex B).

3) Set the power level of UE to –20dBm or send Down power control commands (1dB step size should be used.) to the UE until UE output power shall be –20dBm with ±1dB tolerance.

4) Repeat step 2).

5.13.1.5 Test requirements

The measured EVM, derived in step 2) and 4), shall not exceed 17,5 %. for parameters specified in table 5.13.1 Parameters for EVM.

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.

5.13.1A Error Vector Magnitude (EVM) with HS-DPCCH

5.13.1A.1 Definition and applicability

The Error Vector Magnitude is a measure of the difference between the reference waveform and the measured waveform. This difference is called the error vector. Both waveforms pass through a matched Root Raised Cosine filter with bandwidth 3,84 MHz and roll-off α=0,22. Both waveforms are then further modified by selecting the frequency, absolute phase, absolute amplitude and chip clock timing so as to minimise the error vector. The EVM result is defined as the square root of the ratio of the mean error vector power to the mean reference power expressed as a %.

The measurement interval is one timeslot except when the mean power between slots is expected to change whereupon the measurement interval is reduced by 25 μs at each end of the slot.

The requirements and this test apply for Release 5 and later releases to all types of UTRA for the FDD UE that support HSDPA.

Editors note: This test case is not complete.

5.13.1A.2 Minimum Requirements

The EVM shall not exceed 17.5 % for the parameters specified in table 5.13.1A. This is applicable for all values of β_c , β_d and β_{hs} as specified in [5].

Table 5.13.1A: Parameters for EVM

Parameter	Level / Status	Unit
Output power	≥ –20	dBm
Operating conditions	Normal conditions	
Power control step size	1	dB

The normative reference for this requirement is TS 25.101 [1] clause 6.8.2.1.

5.13.1A.3 Test purpose

To verify that the EVM does not exceed 17.5 % for the specified parameters in table 5.13.1A. This is applicable for all values of β_c , β_d and β_{hs} as specified in [5]. The maximum output power with HS-DPCCH is specified in table 5.2A.1.

An excess EVM increases transmission errors in the up link own channel.

5.13.1A.4 Method of test

5.13.1A.4.1 Initial conditions

Test environment: normal~~, TL/VL, TL/VH, TH/VL, TH/VH, vibration~~; see clauses G.2.1, G.2.2 and G.2.3.

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

1) Connect the SS (node B emulator) to the UE antenna connector as shown in figure A.20.
2) An HSDPA call is set up according to TS 34.108 [3] clause 7.3.6.3. RF parameters are set up according to table E.5.1 and table E.5.10.
3) Enter the UE into loopback test mode 2 in the presence of HSDPA and start the loopback test.

Note: The definition of loopback mode 2 in the presence of HSDPA will be defined in T1#27.

See TS 34.108 [3] and TS 34.109 [4] for details regarding loopback test mode for HSDPA which is [FFS].

5.13.1A.4.2 Procedure

1) Send TRANSPORT CHANNEL RECONFIGURATION message to set the beta values according to table 5.2A.3.
2) Set and send continuously Up power control commands to the UE output power with HS-DPCCH shall be set to maximum output as defined in table 5.2A.1.
3) Start transmitting HSDPA Data.
4) Measure the EVM using Global In-Channel Tx-Test (annex B). The details of the measurement method in the presence of HSDPA is FFS.
5) Set the power level of UE to –20dBm or send Down power control commands (1dB step size should be used.) to the UE until UE output power shall be –20dBm with ±1dB tolerance.
6) Repeat step 4).
7) Repeat steps 1-6 for all the different combinations of beta values as given in table 5.2A.3.

All messages indicated above shall use the same content as described in the default message content in clause 9 of TS 34.108 [3], except the TRANSPORT CHANNEL RECONFIGURATION message which is defined in Annex I.

5.13.1A.5 Test requirements

The measured EVM, derived in step 4) and 6), shall not exceed 17.5 %. for parameters specified in table 5.13.1A parameters for EVM.

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.

5.13.2 Peak code domain error

5.13.2.1 Definition and applicability

The Peak Code Domain Error is computed by projecting power of the error vector (as defined in clause 5.13.1.1) onto the code domain at a specific spreading factor. The Code Domain Error for every code in the domain is defined as the ratio of the mean power of the projection onto that code, to the mean power of the composite reference waveform expressed in dB. The Peak Code Domain Error is defined as the maximum value for the Code Domain Error for all codes.

For Release 99 and Release 4 the measurement interval is one timeslot.

For Release 5 and later releases where tests may include power changes, the measurement interval is further clarified as being one timeslot except when the mean power between slots is expected to change whereupon the measurement interval is reduced by 25 μs at each end of the slot.

The requirements and this test apply only to the UE in which the multi-code DPDCH transmission is provided and therefore does not apply for the PRACH and PCPCH preamble and message parts.

5.13.2.2 Minimum Requirements

The peak code domain error shall not exceed -15 dB at spreading factor 4 for the parameters specified in table 5.13.3.The requirements are defined using the UL reference measurement channel (768 kbps) specified in clause C.2.5.

Table 5.13.3: Parameters for Peak code domain error

Parameter	Level / Status	Unit
Output power	≥ −20	dBm
Operating conditions	Normal conditions	
Power control step size	1	dB

The normative reference for this requirement is TS 25.101 [1] clause 6.8.3.1.

5.13.2.3 Test purpose

To verify that the UE peak code domain error does not exceed -15 dB for the specified parameters in table 5.13.3.

An excess peak code domain error increases transmission errors in the up link own channel.

5.13.2.4 Method of test

5.13.2.4.1 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, and RF parameters are set up according to table 5.13.4.

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.

Table 5.13.4: Test parameters for Peak code domain error

Parameter	Level / Status	Unit
Operating conditions	Normal conditions	
Uplink signal	multi-code	
Information bit rate	2*384	kbps
Power control step size	1	dB

5.13.2.4.2 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 Peak code Domain error using Global In-Channel Tx-Test (annex B).

3) Set the power level of UE to –20dBm or send Down power control commands (1dB step size should be used.) to the UE until UE output power shall be–20dBm with ±1dB tolerance.

4) Repeat step 2).

5.13.2.5 Test requirements

The measured Peak code domain error, derived in step 2) and 4), shall not exceed -14 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

3GPP TSG-R5 Meeting #27
Bath, UK, 25th– 29th April, 2005

Tdoc ⌘R5-050842

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR 526**	⌘**rev**	**-**	⌘ Current version:	**6.0.0** ⌘

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

Title:	⌘ Removal of TGPL2		
Source:	⌘ 3GPP TSG RAN WG5 (Testing)		
Work item code:	⌘ TEI	***Date:*** ⌘	27/04/05
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-6 *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 compressed mode pattern parameter TGPL2 was removed from Rel-5 and onwards by CRs to 25.101, 25.133, 25.215 and 25.331 approved at RAN plenary 27 (see RP-050038). 34.121 need to be updated accordingly.
Summary of change:	⌘ Comments for TGPL2 is changed to only be applicable for R99 and Rel-4. Table format of impacted message content tables updated (one table row per IE)
Consequences if not approved:	⌘ 34.121 not aligned to core specifications

Clauses affected:	⌘ 5.7.4.2, 8.6.2.1.4.2, 8.6.2.2.4.2, 8.6.3.1.4, 8.7.1.2.1.4.2, 8.7.2.2.2.4.2, 8.7.3.1.4.2, 8.7.3A.4.2, 8.7.4.2.4.2, 8.7.8.1.4.2 and Annex C5				
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
		X		Test specifications	34.108, 34.123-1
			X	O&M Specifications	
Other comments:	⌘ Affects Rel-5 and later releases.				

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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.

<Start of first modified section>

5.7 Power setting in uplink compressed mode

5.7.1 Definition and applicability

Compressed mode in uplink means that the power in uplink is changed.

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

5.7.2 Minimum requirements

A change of output power is required during uplink compressed frames since the transmission of data is performed in a shorter interval. The ratio of the amplitude between the DPDCH codes and the DPCCH code will also vary. The power step due to compressed mode shall be calculated in the UE so that the energy transmitted on the pilot bits during each transmitted slot shall follow the inner loop power control.

Thereby, the power during compressed mode, and immediately afterwards, shall be such that the mean power of the DPCCH follows the steps due to inner loop power control combined with additional steps of $10Log_{10}(N_{pilot.prev} / N_{pilot.curr})$ dB where $N_{pilot.prev}$ is the number of pilot bits in the previously transmitted slot, and $N_{pilot.curr}$ is the current number of pilot bits per slot.

The resulting step in total transmitted power (DPCCH +DPDCH) shall then be rounded to the closest integer dB value. A power step exactly half-way between two integer values shall be rounded to the closest integer of greatest magnitude. The accuracy of the power step, given the step size, is specified in table 5.6.1 in clause 5.6.2. The power step is defined as the relative power difference between the mean power of the original (reference) timeslot and the mean power of the target timeslot, when neither the original timeslot nor the reference timeslot are in a transmission gap. The transient duration is not included, and is from 25 µs before the slot boundary to 2 5µs after the slot boundary.

In addition to any power change due to the ratio $N_{pilot.prev} / N_{pilot.curr,}$ the mean power of the DPCCH in the first slot after a compressed mode transmission gap shall differ from the mean power of the DPCCH in the last slot before the transmission gap by an amount Δ_{RESUME}, where Δ_{RESUME} is calculated as described in clause 5.1.2.3 of TS 25.214 [5].

The resulting difference in the total transmitted power (DPCCH + DPDCH) shall then be rounded to the closest integer dB value. A power difference exactly half-way between two integer values shall be rounded to the closest integer of greatest magnitude. The accuracy of the resulting difference in the total transmitted power (DPCCH + DPDCH) after a transmission gap of up to 14 slots shall be as specified in table 5.7.1.

Table 5.7.1: Transmitter power difference tolerance after a transmission gap of up to 14 slots

Power difference (Up or down) ΔP [dB]	Transmitter power step tolerance after a transmission gap [dB]
ΔP ≤ 2	+/- 3
3	+/- 3
4 ≤ ΔP ≤ 10	+/- 3.5
11 ≤ ΔP ≤ 15	+/- 4
16 ≤ ΔP ≤ 20	+/- 4.5
21 ≤ ΔP	+/- 6.5

The power difference is defined as the difference between the mean power of the original (reference) timeslot before the transmission gap and the mean power of the target timeslot after the transmission gap, not including the transient durations. The transient durations at the start and end of the transmission gaps are each from 25 µs before the slot boundary to 25 µs after the slot boundary.

The transmit power levels versus time shall meet the mask specified in figure 5.7.1.

The reference for this requirement is TS 25.101 [1] clause 6.5.4.1.

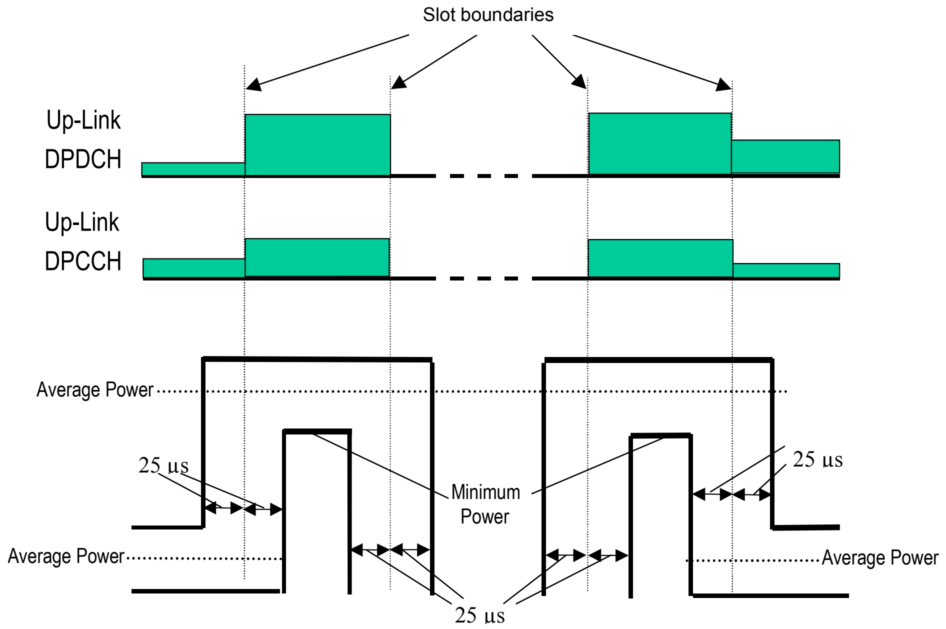

Figure 5.7.1: Transmit template during Compressed mode

For RPL (Recovery Period Length) slots after the transmission gap, where RPL is the minimum out of the transmission gap length and 7 slots, the UE shall use the power control algorithm and step size specified by the signalled Recovery Period Power Control Mode (RPP), as detailed in TS 25.214 [5] clause 5.1.2.3.

When nominal 3 dB power control steps are used in the recovery period, the transmitter mean power steps due to inner loop power control shall be within the range shown in table 5.7.2, and the transmitter aggregate mean power step due to inner loop power control shall be within the range shown in table 5.7.3, excluding any other power changes due, for example, to changes in spreading factor or number of pilot bits.

Table 5.7.2: Transmitter power control range for 3dB step size

TPC_cmd	Transmitter power control range for 3dB step size	
	Lower	Upper
+1	+1,5 dB	+4,5 dB
0	–0,5 dB	+0,5 dB
–1	–1,5 dB	–4,5 dB

Table 5.7.3: Transmitter aggregate power control range for 3dB step size

TPC_cmd group	Transmitter power control range after 7 equal TPC_cmd groups	
	Lower	Upper
+1	+16 dB	+26 dB
0	–1 dB	+1 dB
–1	–16 dB	–26 dB

The reference for this requirement is TS 25.101 [1] clause 6.4.2.1.1.

5.7.3 Test purpose

To verify that the changes in uplink transmit power in compressed mode are within the prescribed tolerances.

Excess error in transmit power setting in compressed mode increases the interference to other channels, or increases transmission errors in the uplink.

5.7.4 Method of test

5.7.4.1 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.1.
2) A call is set up according to the Generic call setup procedure. The 12,2 kbps UL reference measurement channel is used, with gain factors β_c = 0,5333 and β_d = 1,0 in non-compressed frames. Slot formats 0 and 0B are used on the uplink DPCCH.
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.

5.7.4.2 Procedure

NOTE: CFNs are given in this procedure for reference as examples only. A fixed offset may be applied to the CFNs.

1) Before proceeding with step (3) below, set the output power of the UE, measured at the UE antenna connector, to be in the range –36 ± 9 dBm. This may be achieved by setting the downlink signal (Îor) to yield an appropriate open loop output power and/or by generating suitable downlink TPC commands from the SS.
2) Transmit the PHYSICAL CHANNEL RECONFIGURATION message to set the uplink power control parameters to use Algorithm 1 and a step size of 2 dB,and to set the compressed mode parameters shown in table 5.7.5. The contents of the message are specified in table 5.7.9. This set of compressed mode parameters defines the compressed mode pattern which is used to test the implementation of:
   a) in steps (3) and (4), upward 3 dB output power steps and the implementation of a downward power change when resuming transmission after a compressed mode gap, and
   b) in steps (7) and (8), downward 3dB output power steps and the implementation of an upward power change when resuming transmission after a compressed mode gap.

Table 5.7.5: Parameters for pattern A for compressed mode test

Parameter	Meaning	Value
TGPRC	Number of transmission gap patterns within the Transmission Gap Pattern Sequence	1
TGCFN	Connection Frame Number of the first frame of the first pattern within the Transmission Gap Pattern Sequence	0
TGSN	Slot number of the first transmission gap slot within the TGCFN	2
TGL1	Length of first transmission gap within the transmission gap pattern	7 slots
TGL2	Length of second transmission gap within the transmission gap pattern	7 slots
TGD	Duration between the starting slots of two consecutive transmission gaps within a transmission gap pattern	15 slots
TGPL1	Duration of transmission gap pattern 1	3 frames
TGPL2	Duration of transmission gap pattern 2	R99 and Rel-4: Omit Rel-5 and later releases: Not applicable
RPP	Recovery Period Power Control Mode	Mode 1
ITP	Initial Transmit Power Mode	Mode 1
UL/DL Mode	Defines whether only DL, only UL, or combined UL/DL compressed mode is used	UL/DL
Downlink Compressed Mode Method	Method for generating downlink compressed mode gap	SF/2
Uplink Compressed Mode Method	Method for generating uplink compressed mode gap	SF/2
Scrambling code change	Indicates whether the alternative scrambling code is used	No code change
Downlink frame type	Downlink compressed frame structure	A
DeltaSIR	Delta in DL SIR target value to be set in the UE during compressed frames	0
DeltaSIRafter	Delta in DL SIR target value to be set in the UE one frame after the compressed frames	0

The resulting compressed mode pattern is shown in figure 5.7.2.

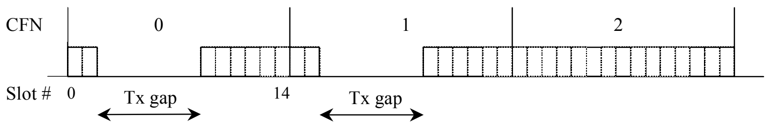

Figure 5.7.2: Pattern A for compressed mode test

3) After the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE is received, transmit TPC commands on the downlink as shown in table 5.7.6.

Table 5.7.6: TPC commands transmitted in downlink

CFN	TPC commands in downlink
0	0 1 - - - - - - - 1 1 1 1 1 1
1	1 1 - - - - - - - 1 0 1 0 1 0
2	1 0 1 0 1 0 1 0 1 0 1 0 1 0 1

4) Measure the mean power in the following slots, not including the 25 µs transient periods at the start and end of each slot:

CFN 0: Slots # 9,10,11,12,13,14
CFN 1: Slots # 0,1,9

5) Re-start the test. Before proceeding with step (7) below, set the output power of the UE, measured at the UE antenna connector, to be in the range 2 ± 9 dBm. This may be achieved by setting the downlink signal (Îor) to yield an appropriate open loop output power and/or by generating suitable downlink TPC commands from the SS.

6) Repeat step (2) above, with the exception that TGCFN = 3 in table 5.7.5 and table 5.7.9.

7) After the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE is received, transmit TPC commands on the downlink as shown in table 5.7.7.

Table 5.7.7: TPC commands transmitted in downlink

CFN	TPC commands in downlink
3	0 1 - - - - - - - 0 0 0 0 0 0
4	0 0 - - - - - - - 0 1 0 1 0 1
5	0 1 0 1 0 1 0 1 0 1 0 1 0 1 0

8) Measure the mean power in the following slots, not including the 25 μs transient periods at the start and end of each slot:

CFN 3: Slots # 9,10,11,12,13,14
CFN 4: Slots # 0,1,9

9) Re-start the test. Before proceeding with step (11) below, set the output power of the UE, measured at the UE antenna connector, to be in the range –10 ± 9 dBm. This may be achieved by setting the downlink signal (Îor) to yield an appropriate open loop output power and/or by generating suitable downlink TPC commands from the SS.

10) Transmit the PHYSICAL CHANNEL RECONFIGURATION message to set the uplink power control parameters to use Algorithm 1 and a step size of 1 dB, and to set the compressed mode parameters shown in table 5.7.8. The contents of the message are specified in table 5.7.10. This set of compressed mode parameters defines the compressed mode pattern which is used to test the implementation of power steps at the start and end of compressed frames, and the implementation of a zero power change when resuming transmission after a compressed mode gap.

Table 5.7.8: Parameters for pattern B for compressed mode test

Parameter	Meaning	Value
TGPRC	Number of transmission gap patterns within the Transmission Gap Pattern Sequence	1
TGCFN	Connection Frame Number of the first frame of the first pattern within the Transmission Gap Pattern Sequence	7
TGSN	Slot number of the first transmission gap slot within the TGCFN	8
TGL1	Length of first transmission gap within the transmission gap pattern	14 slots
TGL2	Length of second transmission gap within the transmission gap pattern	omit
TGD	Duration between the starting slots of two consecutive transmission gaps within a transmission gap pattern	UNDEFINED
TGPL1	Duration of transmission gap pattern 1	4 frames
TGPL2	Duration of transmission gap pattern 2	R99 and Rel-4: Omit Rel-5 and later releases: Not applicable
RPP	Recovery Period Power Control Mode	Mode 0
ITP	Initial Transmit Power Mode	Mode 0
UL/DL Mode	Defines whether only DL, only UL, or combined UL/DL compressed mode is used	UL/DL
Downlink Compressed Mode Method	Method for generating downlink compressed mode gap	SF/2
Uplink Compressed Mode Method	Method for generating uplink compressed mode gap	SF/2
Scrambling code change	Indicates whether the alternative scrambling code is used	No code change
Downlink frame type	Downlink compressed frame structure	A
DeltaSIR	Delta in DL SIR target value to be set in the UE during compressed frames	0
DeltaSIRafter	Delta in DL SIR target value to be set in the UE one frame after the compressed frames	0

The resulting compressed mode pattern is shown in figure 5.7.3.

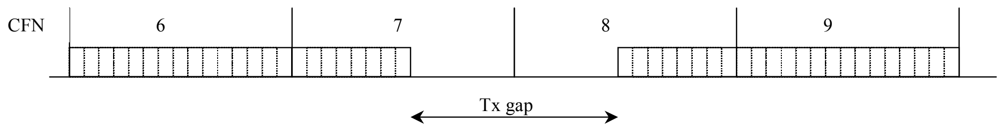

Figure 5.7.3: Pattern B for compressed mode test

11) After the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE is received, transmit TPC commands on the downlink as shown in table 5.7.8.

Table 5.7.8: TPC commands transmitted in downlink

CFN	TPC commands in downlink
6	0 0 0 0 0 0 0 0 0 0 0 0 1 1 1
7	1 1 1 1 1 1 1 1 - - - - - - -
8	- - - - - - - 0 0 0 0 0 0 0 0
9	0 0 0 1 1 1 1 1 1 1 1 1 1 1 1

12) Measure the mean power in the following slots, not including the 25 μs transient periods at the start and end of each slot:

CFN 6: Slot # 14
CFN 7: Slots # 0 and 7
CFN 8: Slots # 7 and 14
CFN 9: Slot # 0

Table 5.7.9: PHYSICAL CHANNEL RECONFIGURATION message (step 2)

Information Element	Value/Remark	Version
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	Uplink DPCH info	
-Uplink DPCH power control info		
-CHOICE mode	FDD	
-DPCCH Power offset	-6dB	
-PC Preamble	1 frame	
-SRB delay	7 frames	
-Power Control Algorithm	Algorithm 1	
-TPC step size	2dB	
-CHOICE mode	FDD	
-Scrambling code type	Long	
-Scrambling code number	0	
-Number of DPDCH	1	
-spreading factor	64	
-TFCI existence	TRUE	
-Number of FBI bits	Not Present(0)	
-Puncturing Limit	1	
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	0	
-Transmission gap pattern sequence configuration parameters		
-TGMP	FDD measurement	
-TGPRC	1	
-TGSN	2	
-TGL1	7	
-TGL2	7	
-TGD	15	
-TGPL1	3	
-TGPL2	Not Present	R99 and

		Rel-4 only
-RPP	Mode 1	
-ITP	Mode 1	
-CHOICE UL/DL mode	UL and DL	
-Downlink compressed mode method	SF/2	
-Uplink compressed mode method	SF/2	
-Downlink frame type	A	
-DeltaSIR1	0	
-DeltaSIRafter1	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	
~~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.~~	
	~~SS provides the value of this IE, from its internal counter.~~	
~~- RRC message sequence number~~	~~Not Present~~	
	~~Not Present~~	
~~-Integrity protection mode info~~	~~Not Present~~	
~~-Ciphering mode info~~	~~Not Present~~	
~~-Activation time~~	~~Not Present~~	
~~-New U-RNTI~~	~~CELL_DCH~~	
~~-New C-RNTI~~	~~Not Present~~	
~~-RRC State Indicator~~		
~~-UTRAN DRX cycle length coefficient~~		
~~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~~	~~Uplink DPCH info~~	
~~--Uplink DPCH power control info~~		
~~---CHOICE mode~~	~~FDD~~	
~~----DPCCH Power offset~~	~~-6dB~~	
~~----PC Preamble~~	~~1 frame~~	
~~----SRB delay~~	~~7 frames~~	
~~----Power Control Algorithm~~	~~Algorithm 1~~	
~~----TPC step size~~	~~2dB~~	
~~--CHOICE mode~~	~~FDD~~	
~~---Scrambling code type~~	~~Long~~	
~~---Scrambling code number~~	~~0~~	
~~---Number of DPDCH~~	~~1~~	
~~---spreading factor~~	~~64~~	
~~---TFCI existence~~	~~TRUE~~	
~~---Number of FBI bits~~	~~Not Present(0)~~	
~~---Puncturing Limit~~	~~1~~	
~~Downlink radio resources~~		
~~-CHOICE mode~~	~~FDD~~	
~~--Downlink PDSCH information~~	~~Not Present~~	
~~-Downlink information common for all~~		
~~radio links~~	~~Not Present~~	
~~--Downlink DPCH info common for all~~	~~FDD~~	
~~RL~~		
~~--CHOICE mode~~		
~~---DPCH compressed mode info~~	~~1~~	
~~----Transmission gap pattern sequence~~	~~Activate~~	
~~-----TGPSI~~	~~0~~	
~~-----TGPS Status Flag~~		
~~-----TGCFN~~		
~~-----Transmission gap pattern sequence~~	~~FDD measurement~~	
~~configuration parameters~~	~~1~~	
~~------TGMP~~	~~2~~	
~~------TGPRC~~	~~7~~	
~~------TGSN~~	~~7~~	
~~------TGL1~~	~~15~~	
~~------TGL2~~	~~3~~	
~~------TGD~~	~~Not Present~~	
~~------TGPL1~~	~~Mode 1~~	
~~------TGPL2~~	~~Mode 1~~	
~~------RPP~~	~~UL and DL~~	
~~------ITP~~	~~SF/2~~	
~~------CHOICE UL/DL mode~~	~~SF/2~~	
~~-------Downlink compressed mode~~	~~A~~	
~~method~~	~~0~~	
~~-------Uplink compressed mode method~~	~~0~~	
~~------Downlink frame type~~	~~Not Present~~	
~~------DeltaSIR1~~	~~Not Present~~	
~~------DeltaSIRafter1~~	~~Not Present~~	
~~------DeltaSIR2~~	~~Not Present~~	
~~------DeltaSIRafter2~~	~~Not Present~~	
~~------N Identify abort~~	~~Not Present~~	
~~------T Reconfirm abort~~	~~Not Present~~	
~~---TX Diversity Mode~~		
~~---SSDT information~~		
~~--Default DPCH Offset Value~~	~~FDD~~	
~~-Downlink information per radio link list~~		
~~-- Downlink information for each radio~~	~~100~~	
~~link~~	~~Not Present~~	
~~---Choice mode~~	~~Not Present~~	
~~----Primary CPICH info~~		
~~-----Primary scrambling code~~	~~FDD~~	
~~----PDSCH with SHO DCH Info~~	~~Primary CPICH may be used~~	
~~----PDSCH code mapping~~	~~Set to value Default DPCH Offset Value (as currently~~	
~~---Downlink DPCH info for each RL~~	~~stored in SS) mod 38400~~	
~~----CHOICE mode~~	~~Not Present~~	
~~-----Primary CPICH usage for channel~~		
~~estimation~~	~~Not Present~~	
~~-----DPCH frame offset~~	~~128~~	

 ~~-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~~ ~~-SCCPCH Information for FACH~~	~~96~~ ~~No code change~~ ~~0~~ ~~Not Present~~ ~~Not Present~~ ~~Not Present~~	

Table 5.7.10: PHYSICAL CHANNEL RECONFIGURATION message (step 10)

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 -Uplink DPCH power control info -CHOICE mode -DPCCH Power offset -PC Preamble -SRB delay -Power Control Algorithm -TPC step size -CHOICE mode -Scrambling code type -Scrambling code number -Number of DPDCH -spreading factor -TFCI existence -Number of FBI bits -Puncturing Limit	 Not Present Uplink DPCH info FDD -6dB 1 frame 7 frames Algorithm 1 1dB FDD Long 0 1 64 TRUE Not Present(0) 1	
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	 FDD Not Present Not Present FDD 1 Activate 7 FDD measurement 1 8 14 Not Present 0 4 Not Present	 R99 and

-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 -Primary CPICH info -Primary scrambling code -PDSCH with SHO DCH Info -PDSCH code mapping -Downlink DPCH info for each RL -CHOICE mode -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 -SCCPCH Information for FACH	Mode 0 Mode 0 UL and DL SF/2 SF/2 A 0 0 Not Present Not Present Not Present Not Present Not Present Not Present Not Present FDD 100 Not Present Not Present FDD Primary CPICH may be used Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400 Not Present Not Present 128 96 No code change 0 Not Present Not Present Not Present	Rel-4 only

5.7.5 Test requirements

For ease of reference, the following uplink output power measurements are defined in figure 5.7.4. In this figure:

- P_g is the RRC filtered mean power in an uplink transmission gap, excluding the 25 µs transient periods.
- P_a is the mean power in the last slot before a compressed frame (or pair of compressed frames), excluding the 25 µs transient periods.
- P_b is the mean power in the first slot of a compressed frame, excluding the 25 µs transient periods.
- P_c is the mean power in the last slot before a transmission gap, excluding the 25 µs transient periods.
- P_d is the mean power in the first slot after a transmission gap, excluding the 25 µs transient periods.
- P_e is the mean power in the last slot of a compressed frame, excluding the 25 µs transient periods.
- P_f is the mean power in the first slot after a compressed frame (or pair of compressed frames), excluding the 25 µs transient periods.

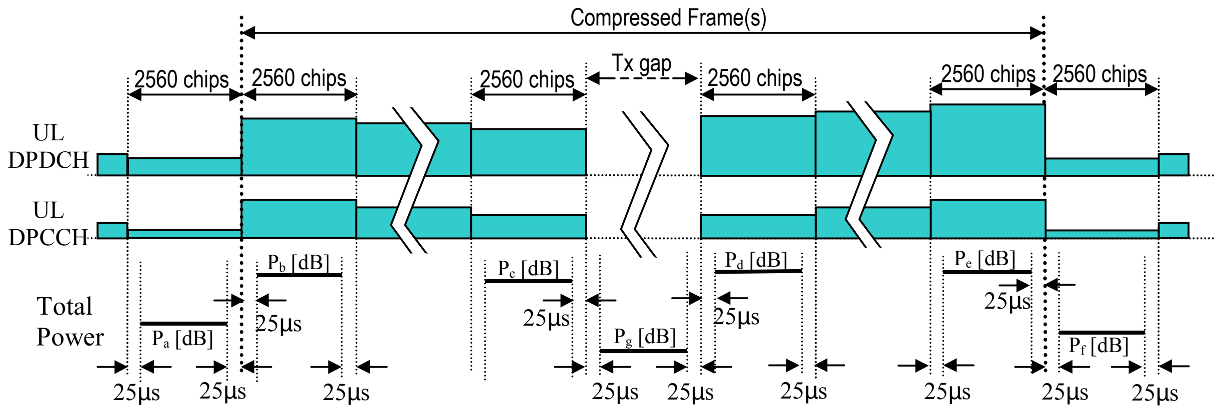

Figure 5.7.4: Uplink transmit power in uplink compressed mode

1. At the boundary between CFN 6 and CFN 7, $P_b - P_a$ shall be within the range +4 ± 2 dB.
2. In slot #9 of CFN 1, the power difference $P_d - P_c$ from the power in slot #1 of CFN 1 shall be within the range -11 ± 4 dB.
3. In slot #9 of CFN 4, the power difference $P_d - P_c$ from the power in slot #1 of CFN 4 shall be within the range +11 ± 4 dB.
4. In slot #7 of CFN 8, the power difference $P_d - P_c$ from the power in slot #7 of CFN 7 shall be within the range 0 ± 3 dB.
5. (void)
6. At the boundary between CFN 8 and CFN 9, $P_f - P_e$ shall be within the range -4 ± 2 dB.
7. In the slots between slot #10 of CFN 0 and slot #1 of CFN 1 inclusive, the change in mean power from the previous slot shall be within the range given in table 5.7.2 for TPC_cmd = +1.
8. The aggregate change in mean power from slot #9 of CFN 0 to slot #1 of CFN 1 shall be within the range given in table 5.7.3 for TPC_cmd = +1.
9. In the slots between slot #10 of CFN 3 and slot #1 of CFN 4 inclusive, the change in mean power from the previous slot shall be within the range given in table 5.7.2 for TPC_cmd = -1.
10. The aggregate change in mean power from slot #9 of CFN 3 to slot #1 of CFN 4 shall be within the range given in table 5.7.3 for TPC_cmd = -1.

<End of modified section>

<Start of next modified section>

8.6.2 FDD inter frequency measurements

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 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.

$T_{\text{Inter:}}$ 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 [31] 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 $T_{identify\_inter}$ 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
$\hat{I}_{or}$ (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 Îor 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		–0.941		–0.941	
$\hat{I}_{or}/I_{oc}$	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 Îor 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 parameters are set up according totable 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 the SS receive the MEASUREMENT REPORT message in step 11) or 5 seconds after 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	Version
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
	
	FDD
	Not Present
	
	Not Present
	FDD
	
	1
	Activate
	(Current CFN + (256 – TTI/10msec))mod 256
	
	FDD measurement
	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
	Not Present
	Not Present
	Not Present
		
		R99 and Rel-4 only

-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	
~~UE Information Elements~~		
~~-RRC transaction identifier~~	~~0~~	
~~-Integrity check info~~	~~SS calculates the value of MAC-I for this~~	
~~-message authentication code~~	~~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.~~	
	~~Not Present~~	
~~-Integrity protection mode info~~	~~Not Present~~	
~~-Ciphering mode info~~	~~Not Present~~	
~~-Activation time~~	~~Not Present~~	
~~-New U-RNTI~~	~~Not Present~~	
~~-New C-RNTI~~	~~CELL_DCH~~	
~~-RRC State Indicator~~	~~Not Present~~	
~~-UTRAN DRX cycle length coefficient~~		
~~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 – TTI/10msec))mod 256~~	
~~-Transmission gap pattern sequence configuration parameters~~		
~~-TGMP~~		
~~-TGPRC~~	~~FDD measurement~~	
~~-TGSN~~	~~Infinity~~	
~~-TGL1~~	~~4~~	
~~-TGL2~~	~~7~~	
~~-TGD~~	~~Not Present~~	
~~-TGPL1~~	~~UNDEFINED~~	
~~-TGPL2~~	~~3~~	
~~-RPP~~	~~Not Present~~	
~~-ITP~~	~~Mode 0~~	
~~-CHOICE UL/DL mode~~	~~Mode 0~~	
~~-Downlink compressed mode method~~	~~UL and DL~~	
~~-Uplink compressed mode method~~	~~SF/2~~	
~~-Downlink frame type~~	~~SF/2~~	
~~-DeltaSIR1~~	~~B~~	

~~-DeltaSIRafter1~~	~~3.0~~	
~~-DeltaSIR2~~	~~3.0~~	
~~-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~~	~~Not Present~~	
~~- Downlink information for each radio link~~		
~~-Choice mode~~		
~~-Primary CPICH info~~	~~FDD~~	
~~-Primary scrambling code~~		
~~-PDSCH with SHO DCH Info~~	~~100~~	
~~-PDSCH code mapping~~	~~Not Present~~	
~~-Downlink DPCH info for each RL~~	~~Not Present~~	
~~-CHOICE mode~~		
~~-Primary CPICH usage for channel estimation~~	~~FDD~~	
~~-DPCH frame offset~~	~~Primary CPICH may be used~~	
	~~Set to value Default DPCH Offset Value (as~~	
~~-Secondary CPICH info~~	~~currently stored in SS) mod 38400~~	
~~-DL channelisation code~~	~~Not Present~~	
~~-Secondary scrambling code~~		
~~-Spreading factor~~	~~Not Present~~	
~~-Code number~~	~~128~~	
~~-Scrambling code change~~	~~96~~	
~~-TPC combination index~~	~~No code change~~	
~~-SSDT Cell Identity~~	~~0~~	
~~-Closed loop timing adjustment mode~~	~~Not Present~~	
~~-SCCPCH Information for FACH~~	~~Not Present~~	
	~~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) -CHOICE 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 8.6.2.1.5 Not Present Not Present FALSE FDD Set to Primary scrambling code of Cell3 Set to Primary CPICH Tx Power of Cell3 described in Table 8.6.2.1.5 FALSE Not Present Inter-frequency reporting criteria 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) - Inter-frequency set update (10.3.7.22) -UE autonomous update mode -CHOICE report criteria -Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event	Not Present Not Present On with no reporting Inter-frequency measurement reporting criteria 1
-Inter-frequency event identity -Threshold used frequency -W used frequency	Event 2C Not present Not present

Information Element/Group name	Value/Remark
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status	
-CHOICE reported cell	Report cells within monitored and/or virtual active 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
$\hat{I}_{or}$	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
$\hat{I}_{or}$	dBm	-70	-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.

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.
7) After 2 secondsfrom the beginning of T1, the SS shall switch the power settings from T1 to T2.
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.
9) After the SS receive the MEASUREMENT REPORT message in step 8) or 40 seconds after the beginning of T2, the UE is switched off.
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	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 for measurement -Inter-frequency measurement quantity (10.3.7.18) -CHOICE 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 FALSE FDD Set to Primary scrambling code of Cell2 Set to Primary CPICH Tx Power of Cell2 described in Table 8.6.2.1.3 FALSE Not Present Inter-frequency reporting criteria 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 -Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event	Not Present Not Present Inter-frequency measurement reporting criteria 1
-Inter-frequency event identity -Threshold used frequency -W used frequency -Hysteresis -Time to trigger	Event 2C Not present Not present 0 dB 0 ms

Information Element/Group name	Value/Remark
-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	 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	Version
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.	
	SS provides the value of this IE, from its internal counter.	
-RRC message sequence number	Not Present	
	Not Present	
-Integrity protection mode info	Not Present	
-Ciphering mode info	Not Present	
-Activation time	Not Present	
-New U-RNTI	CELL_DCH	
-New C-RNTI	Not Present	
-RRC State Indicator		
-UTRAN DRX cycle length coefficient		
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	Not Present	
-Downlink DPCH info common for all RL	FDD	
-CHOICE mode		
-DPCH compressed mode info		
-Transmission gap pattern sequence	1	
-TGPSI	Activate	
-TGPS Status Flag	(Current CFN + (256 – TTI/10msec))mod 256	
-TGCFN		
-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	R99 and Rel-4 only
-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.

8.6.3 TDD measurements

8.6.3.1 Correct reporting of TDD neighbours in AWGN propagation condition

8.6.3.1.1 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 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 combined FDD and TDD UE.

8.6.3.1.2 Minimum requirement

When transmission gaps are scheduled for inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within

$$\mathrm{T}_{\text{identify TDD inter}} = Max\left\{ 5000, \mathrm{N}_{\text{basic identify TDD inter}} \cdot \frac{\mathrm{T}_{\text{Measurement Period TDD inter}}}{\mathrm{N}_{\text{TDD inter}}} \cdot N_{Freq} \right\} ms$$

If the UE does not need compressed mode to perform inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within 5000 ms.

An inter-frequency TDD cell shall be considered detectable when P-CCPCH Ec/Io ≥ -8 dB and SCH_Ec/Io ≥ -13 dB. When L3 filtering is used an additional delay can be expected.

When transmission gaps are scheduled for inter frequency TDD measurements the UE physical layer shall be capable of reporting measurements to higher layers with a measurement period as given by

$$T_{\text{measurement TDD inter}} = Max\left\{T_{\text{Measurement Period TDD inter}}, N_{\text{basic measurement TDD inter}} \cdot \frac{T_{\text{Measurement Period TDD inter}}}{N_{\text{TDD inter}}} \cdot N_{Freq}\right\} ms$$

If the UE does not need compressed mode to perform inter-frequency TDD measurements, the measurement period for inter-frequency TDD measurements shall be 480 ms.

The UE shall be capable of performing P-CCPCH RSCP measurements for $X_{\text{basic measurement TDD inter}}$ inter-frequency TDD cells per TDD frequency of the monitored set and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $T_{\text{measurement TDD inter}}$.

where

$X_{\text{basic measurement TDD inter}}$ = 6 (cells)

$T_{\text{Measurement\_Period TDD inter}}$ = 480 ms. The time period used for calculating the measurement period $T_{\text{measurement\_TDD inter}}$ for inter frequency P-CCPCH RSCP measurements.

$N_{\text{TDD inter:}}$ This is the smallest resulting integer number of transmission gap patterns in a transmission gap pattern sequence assigned to UE by UTRAN for inter frequency TDD measurements during the time period $T_{\text{Measurement\_Period TDD inter}}$ with an arbitrarily chosen timing.

$N_{\text{basic\_identify\_TDD inter}}$ =80. This is the number of transmission gap patterns in a transmission gap pattern sequence for inter-frequency TDD measurements during the time period used in the inter frequency TDD equation where the maximum allowed time for the UE to identify a new inter frequency TDD cell is defined.

$N_{\text{basic\_measurement\_TDD inter}}$ = 5. This is the number of transmission gap patterns in a transmission gap pattern sequence for inter-frequency TDD measurements during the time period $T_{\text{Measurement\_Period TDD inter}}$ with an arbitrarily chosen timing that is used in the inter-frequency TDD equation for defining where the measurement period for inter frequency P-CCPCH RSCP measurements is defined.

N_{Freq}: This is the number of TDD frequencies indicated in the inter frequency measurement control information.

The normative reference for this requirement is TS 25.133 [2] clauses 8.1.2.4 and A.8.3.1

8.6.3.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.6.3.1.4 Method of test

8.6.3.1.4.1 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 8.6.3.1.1, 8.6.3.1.2 and 8.6.3.1.3. The test consists of 2 successive time periods, with a time duration T1 and T2. Two cells shall be present in the test, cell 1 being the UTRA FDD serving cell and cell 2 being a UTRA TDD neighbour cell on the unused frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The TTI of the uplink DCCH shall be 20 ms.

Table 8.6.3.1.1: General test parameters for Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 34.121 Annex C
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS 34.121 Annex C
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 1	FDD cell
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-71	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T1		S	15	
T2		S	10	

Table 8.6.3.1.2: Cell 1 specific parameters for Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition

Parameter	Unit	Cell 1
		T1, T2
UTRA RF Channel Number		Channel 1
CPICH_Ec/Ior	dB	-10
P-CCPCH_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	-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 8.6.3.1.3: Cell 2 specific parameters for Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition

Parameter	**Unit**	**Cell 2**			
DL timeslot number		**0**		**8**	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 2			
P-CCPCH_Ec/Ior	dB	-3		n.a.	
PICH_Ec/Ior	dB	n.a.		-3	
SCH_Ec/Ior	dB	-9			
SCH_t_{offset}	dB	10			
OCNS_Ec/Ior	dB	-3.12			
P-CCPCH RSCP	dBm	-75	-67	n.a.	n.a.
$\hat{I}_{or}/I_{oc}$	dB	-2	6	-2	6
I_{oc}	dBm/3,84 MHz	-70			
Propagation Condition		AWGN			
Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.					

8.6.3.1.4.2 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 generic set-up procedure specified in TS 34.108 [3] subclause 7.3.2.3.
4) SS shall transmit a MEASUREMENT CONTROL message.
5) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message.
6) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message
7) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
8) UE shall transmit a MEASUREMENT REPORT message triggered by event 2c for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 9.2 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.
9) After 10 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 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	 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)	 1 Modify 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 (10.3.6.36) -CHOICE *mode* -UARFCN(Nt) -Cell info (10.3.7.2) -Cell individual offset -Reference time difference to cell -Read SFN indicator -CHOICE *mode* -Primary CCPCH info (10.3.6.57) -CHOICE mode -CHOICE Sync case -Timeslot -cell parameters ID -SCTD indicator -Primary CCPCH Tx power -Timesllot list -Cell selection and re-selection info -Cell for measurement -Inter-frequency measurement quantity (10.3.7.18) -CHOICE *reporting critera* -Filter coefficient (10.3.7.9) -CHOICE *mode* -Measurement quantity for frequency quality estimate	Inter-frequency measurement No inter-frequency cells removed 1 1 TDD Same frequency as channel 2 in Table 8.6.2.4.1.2 Not Present Not Present False TDD TDD 2 0 Set to cell parameters ID of cell 2 FALSE Set to Primary CCPCH Tx power of cell 2 as described in Table 8.6.2.4.1.2 Not Present Not Present Not Present Inter-frequency reporting criteria 0 TDD Primary CCPCH RSCP
-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	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode -Timeslot ISCP reporting indicator -Proposed TGSN Reporting required -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	TDD FALSE FALSE TRUE FALSE
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE *report criteria* -Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event	Not Present Not Present Inter-frequency measurement reporting criteria 1

Information Element/Group name	Value/Remark
-Intra-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 (10.3..61)	
-CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used frequency
-Maximum number of reported cells	3
-Parameters required for each non-used frequenc	
- Threshold non-used frequency	-71
- 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 6)

Information Element	Value/Remark	Verssion
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	 FDD Not Present Not Present FDD 1 Activate (Current CFN + (256 – TTI/10msec))mod 256 TDD measurement Not present 10 10 Not Present 0 11 Not Present Mode 0 Mode 0 UL and DL SF/2 puncturing A 3.0 3.0 Not Present Not Present Not Present Not Present Not Present Not Present	R99 and Rel-4 only

-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 (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
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 identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE *mode*	TDD
-UARFCN(Nt)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE *mode*	TDD
-UARFCN(Nt)	Same frequency as channel 2
-CHOICE mode	TDD
-Primary CCPCH Info	
-CHOICE mode	TDD
-CHOICE Sync Case	Not Present
-Cell Parameters ID	Set to cell parameters ID of Cell 2
-SCTD Indicator	FALSE

8.6.3.1.5 Test requirements

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 9.2 s from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

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%.

<End of modified section>

<Start of next modified section>

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 Bands I and VI,

CPICH_RSCP1$|_{dBm}$ ≥ -112 dBm for Bands II and V,

CPICH_RSCP1$|_{dBm}$ ≥ -111 dBm for Band III.

$$\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$$

Table 8.7.1.1.1.1: CPICH_RSCP Intra frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	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	± 6	± 9	-94...-70	-92…-70	-91…-70
	dBm	± 8	± 11	-70...-50	-70…-50	-70…-70

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, VI	dBm/ 3.84 MHz	-75.54		-59.98		-97.47	
	Band II, V						-95.47	
	Band III						-94.47	
Îor/Ioc		dB	4	0	9	0	0	-6.53
CPICH RSCP, Note 1	Band I, VI	dBm	-81.5	-85.5	-60.98	-69.88	-107.47	-114.0
	Band II, V						-105.47	-112.0
	Band III						-104.47	-111.0
Io, Note 1	Band I, VI	dBm/3.84 MHz	-69		-50		-94	
	Band II, V						-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 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 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 -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 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 and VI	Band II and V	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, VI	dBm/ 3.84 MHz	-74.54		-61,6		-96.47	
	Band II, V						-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, VI	dBm	-80.2	-84.2	-62.3	-71.3	-106.17	-112.7
	Band II, V						-104.17	-110.7
	Band III						-103.17	-109.7
Io, Note 1	Band I, VI	dBm / 3.84 MHz	-67.8		-51,4		-92,8	
	Band II, V						-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 and VI)	Test 3 (Band II and V)	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:

$CPICH\_RSCP1,2|_{dBm} \geq -114$ 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.

$$\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \leq 20dB$$

$$\left.\left(\frac{I_o}{\hat{I}_{or}}\right)\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$$

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	-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		
				Io [dBm/3.84 MHz]		
		Normal condition	Extreme condition	Band I and VI	Band II and V	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, VI	dBm/ 3.84 MHz	-74.54		-61,6		-96.47	
	Band II, V						-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, VI	dBm	-80.2	-84.2	-62.3	-71.3	-106.17	-112.7
	Band II, V						-104.17	-110.7
	Band III						-103.17	-109.7
Io, Note 1	Band I, VI	dBm/ 3.84 MHz	-67.8		-51,4		-92,8	
	Band II, V						-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 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.

$$\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$$

Table 8.7.1.2.1.1: CPICH_RSCP Inter frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	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	± 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 – 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, VI	dBm/ 3.84 MHz	-60.00	-60.00	-84.00	-94.46
	Band II, V				-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, VI	dBm	-60.46	-60.46	-94.0	-114.0
	Band II, V				-92.0	-112.0
	Band III				-91.0	-111.0
Io, Note 1	Band I, VI	dBm/3.84 MHz	-50.00	-50.00	-81.0	-94.0
	Band II, V				-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	Version
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	 FDD Not Present Not Present FDD 1 Activate (Current CFN + (256 – 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	R99 and Rel-4 only

-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 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

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 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 and VI	Band II and V	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, VI	dBm/ 3.84 MHz	-61.6	-61.6	-83.00	-93.46
	Band II, V				-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, VI	dBm	-61.8	-61.8	-92.7	-112.7
	Band II, V				-90.7	-110.7
	Band III				-89.7	-109.7
Io, Note 1	Band I, VI	dBm/3.84 MHz	-51.3	-51.3	-79.8	-93.0
	Band II, V				-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 Bands I and VI,

$CPICH\_RSCP1|_{dBm} \geq -112$ dBm for Bands II and V,

$CPICH\_RSCP1|_{dBm} \geq -111$ dBm for Band III.

$$\frac{I_o}{\left(\hat{I}_{or}\right)}\Bigg|_{in\ dB} - \left(\frac{CPICH\_E_c}{I_{or}}\right)\Bigg|_{in\ dB} \leq 20dB$$

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	-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, VI	dBm/ 3.84 MHz	-56.98		-89.07		-94.98	
	Band II, V				-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, VI	dBm/3.84 MHz	-50		-86		-94	
	Band II, V				-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
…	…	…
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
	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 (–99 dBm, -97 dBm, -96 dBm for Frequency Band I, II, III, V and VI 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		
				Io [dBm/3.84 MHz]		
		Normal condition	Extreme condition	Band I and VI	Band II and V	Band III
CPICH_Ec/Io	dB	-3.1…1.9 for -14 ≤ CPICH Ec/Io –3.6…2.4 for -16 ≤ CPICH Ec/Io < -14 –4.6…3.4 for -20 ≤ CPICH Ec/Io < -16	-4.6…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, VI	dBm/ 3.84 MHz	-58.5		-89.07		-93.98	
	Band II, V				-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, VI	dBm / 3.84 MHz	-51.3		-85.85		-92.9	
	Band II, V				-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 Bands I and VI

CPICH_RSCP1,2$|_{dBm}$ ≥ -112 dBm for Bands II and V,

CPICH_RSCP1,2$|_{dBm}$ ≥ -111 dBm for Band III.

$$\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \le 20dB$$

$$\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \le 20dB$$

Table 8.7.2.1.2.1: 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	-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 and VI	Band II and V	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, VI	dBm/ 3.84 MHz	-58.5		-89.07		-93.98	
	Band II, V				-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, VI	dBm / 3.84 MHz	-51,3		-85.85		-92.9	
	Band II, V				-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:

$CPICH\_RSCP1,2|_{dBm} \geq -114$ 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.

$$\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$$

Table 8.7.2.2.2.1: 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	-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 – 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, VI	dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	-94.46	-94.46
	Band II, V				-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, VI	dBm/3.84 MHz	-50	-50	-86	-86	-94	-94
	Band II, V				-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	Version
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 – 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	R99 and Rel-4 only
-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-freqquency 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
	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

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 -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 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 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 (–99 dBm, -97 dBm, -96 dBm for Frequency Band I, II, III, V and VI 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 and VI	Band II, V	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	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
Ioc	Band I, VI	dBm/ 3.84 MHz	-53.5	-53.5	-86.27	-86.27	-93.46	-93.46
	Band II, V				-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, VI	dBm /3.84 MHz	-51.15	-51.15	-84.9	-84.9	-93	-93
	Band II, V				-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**	**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	-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 – 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, VI	dBm/ 3.84 MHz	-52.22	-52.22	-70.27	-70.27	-94.46	-94.46
	Band II, V						-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, VI	dBm/3.84 MHz	-50	-50	-69	-69	-94	-94
	Band II, V						-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	Version
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
	
	FDD
	Not Present
	
	Not Present
	FDD
	
	1
	Activate
	(Current CFN + (256 – 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
		R99 and Rel-4 only

-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
	
	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 (–99 dBm, -97 dBm, -96 dBm for Frequency Band I, II, III, V and VI 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	-5…5.8	± 10.15	± 8.1	-8…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, VI	dBm/ 3.84 MHz	-53.5	-53.5	-69.27	-69.27	-93.46	-93.46
	Band II, V						-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, VI	dBm/3.84 MHz	-51.15	-51.15	-67.9	-67.9	-93	-93
	Band II, V						-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.

<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 [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 rate of correct measurements observed during repeated tests shall be at least 90%.

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, 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 "GSM Carrier RSSI Measurement" 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 – 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
Îor/Ioc	dB	-1
Ioc	dBm/ 3.84 MHz	-70
Propagation condition	-	AWGN

Table 8.7.3A.3: Signal levels at receiver input in dBm

Step	BCCH1	BCCH2	BCCH3	BCCH4	BCCH5	BCCH6
1	-38.5	-38.5	NA	NA	NA	NA
2	-48.5	-48.5	NA	NA	NA	NA
3	-70.5	-70.5	NA	NA	NA	NA
4	-109.5	-109.5	NA	NA	NA	NA
5	-57.5	NA	-54.5	NA	NA	NA
6	-64.5	NA	-59.5	NA	NA	NA
7	-71.5	NA	NA	-64.5	NA	NA
8	-78.5	NA	NA	-69.5	NA	NA
9	-85.5	NA	NA	NA	-74.5	NA
10	-92.5	NA	NA	NA	-79.5	NA
11	-99.5	NA	NA	NA	NA	-84.5
12	-106.5	NA	NA	NA	NA	-89.5

Table 8.7.3A.4: ARFCN numbers for GSM cells

GSM band	BCCH1	BCCH2	BCCH3	BCCH4	BCCH5	BCCH6
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 1800	700	885	585	660	790	835
PCS 1900	700	805	585	660	790	550
450/900	124	276	293	269	288	1
480/900	124	323	340	316	335	1
450/1800	885	276	293	269	288	512
480/1800	885	323	340	316	335	512
900/1800	885	62	124	40	100	512
450/900/1800	124	276	885	293	1	512
480/900/1800	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

8.7.3A.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 cell 1 are set up according to table to table 8.7.3A.1 and 8.7.3A.2.

2) The RF parameters for two GSM cells are set up according to the step 1 in table 8.7.3A.5. The fading profile for the BCCHs will be set to static, see 51.010-1 [25]. The ARFCN numbers for GSM cells are set up according to table 8.7.3.A.4.

3) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

4) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

5) SS shall transmit MEASUREMENT CONTROL message.

6) UE shall transmit periodically MEASUREMENT REPORT messages.

7) SS shall check GSM carrier RSSI value of the two GSM cells in MEASUREMENT REPORT messages. The GSM CARRIER RSSI values reported in the first measurement report are discarded. The SS records [1000] GSM CARRIER RSSI values reported for the two BCCHs in each step.

8) The RF parameters for two GSM cells are set up according to the next test step in table 8.7.3A.5

9) Repeat procedure steps 7 and 8 until MEASUREMENT REPORT messages from the test step 12 of Table 8.7.3A.5 have been recorded.

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 3):

Information Element	Value/Remark	Version
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 – TTI/10msec))mod 256	
-Transmission gap pattern sequence configuration parameters		
-TGMP	GSM carrier RSSI measurement	
-TGPRC	Infinity	
-TGSN	4	
-TGL1	7	
-TGL2	Not Present	
-TGD	0	
-TGPL1	12	
-TGPL2	Not Present	R99 and Rel-4 only
-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
   -Primary CPICH info
    -Primary scrambling code
   -PDSCH with SHO DCH Info
   -PDSCH code mapping
  -Downlink DPCH info for each RL
   -CHOICE mode
    -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
  -SCCPCH Information for FACH
	
	FDD
	
	100
	Not Present
	Not Present
	
	FDD
	Primary CPICH may be used
	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
	Not Present
	
	Not Present
	128
	96
	No code change
	0
	Not Present
	Not Present
	Not Present	

MEASUREMENT CONTROL message for Inter frequency measurement (step 5):

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 – 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

Table 8.7.3A.5: Signal levels at receiver input in dBm, test parameters for test requirements

Step	BCCH1	BCCH2	BCCH3	BCCH4	BCCH5	BCCH6
1	-39.5	-39.5	NA	NA	NA	NA
2	-49.5	-49.5	NA	NA	NA	NA
3	-71.5	-71.5	NA	NA	NA	NA
4	-108.5	-108.5	NA	NA	NA	NA
5	-57.5	NA	-54.5	NA	NA	NA
6	-64.5	NA	-59.5	NA	NA	NA
7	-71.5	NA	NA	-64.5	NA	NA
8	-78.5	NA	NA	-69.5	NA	NA
9	-85.5	NA	NA	NA	-74.5	NA
10	-92.5	NA	NA	NA	-79.5	NA
11	-99.5	NA	NA	NA	NA	-84.5
12	-106.5	NA	NA	NA	NA	-89.5

For the UE to pass the absolute requirements of GSM Carrier RSSI measurement, at least 90% of the reported GSM Carrier RSSI measurements shall fulfill the following test requirements for each step and each test environment with a confidence level of 95%.

Table 8.7.3A.6: GSM Carrier RSSI absolute accuracy requirements for the reported values

Step	Normal		TL/VL & TH/VH	
	Lowest reported value for BCCH1	Highest reported value for BCCH1	Lowest reported value for BCCH1	Highest reported value for BCCH1
1	RXLEV = 61	RXLEV = 63	RXLEV = 61	RXLEV = 63
2	RXLEV = 54	RXLEV = 63	RXLEV = 54	RXLEV = 63
3	RXLEV = 34	RXLEV = 44	RXLEV = 32	RXLEV = 46
4	RXLEV = 00	RXLEV = 09	RXLEV = 00	RXLEV = 09
5	RXLEV = 46	RXLEV = 60	RXLEV = 46	RXLEV = 60
6	RXLEV = 39	RXLEV = 53	RXLEV = 39	RXLEV = 53
7	RXLEV = 34	RXLEV = 44	RXLEV = 32	RXLEV = 46
8	RXLEV = 27	RXLEV = 37	RXLEV = 25	RXLEV = 39
9	RXLEV = 20	RXLEV = 30	RXLEV = 18	RXLEV = 32
10	RXLEV = 13	RXLEV = 23	RXLEV = 11	RXLEV = 25
11	RXLEV = 06	RXLEV = 16	RXLEV = 04	RXLEV = 18
12	RXLEV = 00	RXLEV = 09	RXLEV = 00	RXLEV = 11
Note: It is not mandatory for the UE to report BCCH1 in step 12				

For the UE to pass the relative requirements of GSM Carrier RSSI measurement, at least 90% of the reported GSM Carrier RSSI measurements shall fulfill the following test requirements for each step and each test environment with a confidence level of 95%.

Table 8.7.3A.7: GSM Carrier RSSI Relative accuracy requirements for the reported values, measurements on different ARFCN within the same frequency band

Step	Normal & TL/VL & TH/VH	
	Lowest reported value for BCCH2	Highest reported value for BCCH2
1	No requirements	No requirements
2	RXLEV = x-4	RXLEV = x+4
3	RXLEV = x-4	RXLEV = x+4
4	RXLEV = x-6	RXLEV = x+4
	Lowest reported value for BCCH3	Highest reported value for BCCH3
5	RXLEV = x-1	RXLEV = x+7
6	RXLEV = x+1	RXLEV = x+9
	Lowest reported value for BCCH4	Highest reported value for BCCH4
7	RXLEV = x+3	RXLEV = x+11
8	RXLEV = x+5	RXLEV = x+13
	Lowest reported value for BCCH5	Highest reported value for BCCH5
9	RXLEV = x+7	RXLEV = x+15
10	RXLEV = x+8	RXLEV = x+17
	Lowest reported value for BCCH6	Highest reported value for BCCH6
11	RXLEV = x+10	RXLEV = x+19
12	RXLEV = x+11	RXLEV = x+21
x is the reported value RXLEV for BCCH1		
Note: It is not mandatory for the UE to report BCCH1 in step 12		

For the UE to pass the relative requirements of GSM Carrier RSSI measurement, at least 90% of the reported GSM Carrier RSSI measurements shall fulfill the following test requirements for each step and each test environment with a confidence level of 95%.

Table 8.7.3A.8: GSM Carrier RSSI Relative accuracy requirements for the reported values, measurements on different frequency bands

Step	Normal		TL/VL & TH/VH	
	Lowest reported value for BCCH2	Highest reported value for BCCH2	Lowest reported value for BCCH2	Highest reported value for BCCH2
1	No requirements	No requirements	No requirements	No requirements
2	RXLEV = x-6	RXLEV = x+6	RXLEV = x-8	RXLEV = x+8
3	RXLEV = x-6	RXLEV = x+6	RXLEV = x-8	RXLEV = x+8
4	RXLEV = x-8	RXLEV = x+6	RXLEV = x-10	RXLEV = x+8
	Lowest reported value for BCCH3	Highest reported value for BCCH3	Lowest reported value for BCCH3	Highest reported value for BCCH3
5	RXLEV = x-3	RXLEV = x+9	RXLEV = x-5	RXLEV = x+11
6	RXLEV = x-1	RXLEV = x+11	RXLEV = x-3	RXLEV = x+13
	Lowest reported value for BCCH4	Highest reported value for BCCH4	Lowest reported value for BCCH4	Highest reported value for BCCH4
7	RXLEV = x+1	RXLEV = x+13	RXLEV = x-1	RXLEV = x+15
8	RXLEV = x+3	RXLEV = x+15	RXLEV = x+1	RXLEV = x+17
	Lowest reported value for BCCH5	Highest reported value for BCCH5	Lowest reported value for BCCH5	Highest reported value for BCCH5
9	RXLEV = x+5	RXLEV = x+17	RXLEV = x+3	RXLEX = x+19
10	RXLEV = x+6	RXLEV = x+19	RXLEV = x+4	RXLEV = x+21
	Lowest reported value for BCCH6	Highest reported value for BCCH6	Lowest reported value for BCCH6	Highest reported value for BCCH6
11	RXLEV = x+8	RXLEV = x+21	RXLEV = x+6	RXLEV = x+23
12	RXLEV = x+9	RXLEV = x+23	RXLEV = x+7	RXLEV = x+25
x is the reported value RXLEV for BCCH1				
Note: It is not mandatory for the UE to report BCCH1 in step 12				

For the UE to pass the relative requirements of GSM Carrier RSSI measurement, at least 90% of the reported GSM Carrier RSSI measurements shall fulfill the following test requirements for each step and each test environment with a confidence level of 95%.

Table 8.7.3A.9: GSM Carrier RSSI Relative accuracy requirements for the reported values, measurements at single frequency (BCCH1)

Step n	Step m	Normal & TL/VL & TH/VH	
		Lowest reported value for BCCH1 at step n	Highest reported value for BCCH1 at step n
5	6	RXLEV = x+3	RXLEV = x+11
5	7	RXLEV = x+10	RXLEV = x+18
6	7	RXLEV = x+3	RXLEV = x+11
6	8	RXLEV = x+10	RXLEV = x+18
7	8	RXLEV = x+3	RXLEV = x+11
7	9	RXLEV = x+10	RXLEV = x+18
8	9	RXLEV = x+3	RXLEV = x+11
8	10	RXLEV = x+9	RXLEV = x+18
9	10	RXLEV = x+2	RXLEV = x+11
9	11	RXLEV = x+9	RXLEV = x+18
10	11	RXLEV = x+2	RXLEV = x+11
10	12	RXLEV = x+8	RXLEV = x+18
11	12	RXLEV = x+1	RXLEV = x+11
x is the reported value of BCCH1 at step m			
Note: It is not mandatory for the UE to report BCCH1 in step 12			

<End of modified section>

<Start of next modified section>

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 reported power ≥ PUEMAX	dBm	+1/-3	±2
PUEMAX > UE reported power ≥ PUEMAX-1	dBm	+1.5/-3.5	±2.5
PUEMAX-1 > UE reported power ≥ PUEMAX-2	dBm	+2/-4	±3
PUEMAX-2 > UE reported power ≥ PUEMAX-3	dBm	+2.5/-4.5	±3.5
PUEMAX-3 > UE reported power ≥ PUEMAX-10	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
DL-Power Control		Off	

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	-3
OCNS_Ec/Ior	dB	-5.2
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN

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.

Table 8.7.3C.5 UE transmitted power test requirements

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.

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 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.

$$\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \le 20dB$$

$$\left. \frac{I_o}{\left(\hat{I}_{or}\right)} \right|_{in\ dB} - \left. \left(\frac{CPICH\_E_c}{I_{or}} \right) \right|_{in\ dB} \le 20dB$$

$$\left. \frac{I_o}{\left(\hat{I}_{or}\right)} \right|_{in\ dB} - \left. \left(\frac{P-CCPCH\_E_c}{I_{or}} \right) \right|_{in\ dB}$$ is low enough to ensure successful SFN decoding.

Table 8.7.4.1.1 SFN-CFN observed time difference intra frequency accuracy

Parameter	Unit	Accuracy [chip]	Conditions		
			Io [dBm/3.84 MHz]		
			Band I and VI	Band II and V	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 0…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 –13.7 dB = Ioc,* Note 1		*Io –13.7 dB = Ioc,* Note 1		*Io –13.7 dB = Ioc,* Note 1	
Io	Band I, VI	dBm/3.84 MHz	-50		-72		-94	
	Band II, V						-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 “OFF” and “Tm” 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 -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 TRUE 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.

8.7.4.1.5 Test requirements

Table 8.7.4.1.3 SFN-CFN observed time difference intra frequency accuracy

Parameter	Unit	Accuracy [chip]	Conditions		
			Io [dBm/3.84 MHz]		
			Band I and VI	Band II and V	Band III
SFN-CFN observed time difference	chip	± 1.5	-94...-50	-92...-50	-91...-50

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><th>Cell 1</th><th>Cell 2</th><th>Cell 1</th><th>Cell 2</th><th>Cell 1</th><th>Cell 2</th></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, VI</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, V</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, VI</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, V</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 “OFF” and “Tm” 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 “OFF” and “Tm” 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

	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 8.7.4.1.4			

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.

<End of modified section>

<Start of next modified section>

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$|_{dBm}$ ≥ -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.

$$\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \leq 20dB$$

| 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 8.7.4.2.1 SFN-CFN observed time difference inter frequency accuracy

Parameter	Unit	Accuracy [chip]	Conditions		
			Io [dBm/3.84 MHz]		
			Band I and VI	Band II and V	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 0…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 – 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	
Îor/Ioc		dB	10.1		10.1		10.1	
Ioc		dBm/ 3.84 MHz	*Io –10.6 dB = Ioc,* Note 1		*Io –10.6 dB = Ioc,* Note 1		*Io –10.6 dB = Ioc,* Note 1	
Io	Band I, VI	dBm/3.84 MHz	-50		-72		-94	
	Band II, V						-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 *Îor/Ioc*.								
NOTE2: For example, x= 491520 or 9830399. This is a calculated value using parameters "OFF" and "Tm" 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 "OFF" 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 "OFF" 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	Version
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 – 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	R99 and Rel-4 only
-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 -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 Inter-frequency reporting criteria 0 FDD CPICH RSCP TRUE TRUE TRUE TRUE FDD TRUE TRUE 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.

8.7.4.2.5 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 and VI	Band II and V	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, VI	dBm/ 3.84 MHz	-62.1		-82.6		103.5	
	Band II, V						101.5	
	Band III						100.5	
Io, Note 1	Band I, VI	dBm/3.84 MHz	-51.3		-71.8		-92.7	
	Band II, V						-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 “OFF” and “Tm” 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 “OFF” and “Tm” 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 “OFF” 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.

<End of modified section>

<Start of next modified section>

8.7.8 P-CCPCH RSCP

8.7.8.1 Absolute measurement accuracy

8.7.8.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP measured in an UTRA TDD cell on one frequency compared to the actual P-CCPCH RSCP power of that cell on the same frequency.

The requirements and this test apply only to UE supporting both UTRA FDD and UTRA TDD.

8.7.8.1.2 Minimum Requirements

The accuracy requirement in table 8.7.8.1.1 is valid under the following conditions:

P-CCPCH_RSCP ≥ -102 dBm,

$$\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{P-CCPCH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 8dB$$

Table 8.7.8.1.1: P-CCPCH RSCP inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal conditions	Extreme conditions	Io [dBm/3.84 MHz]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.11.1 and A.9.1.8.

8.7.8.1.3 Test purpose

The purpose of this test is to verify that the P-CCPCH RSCP absolute measurement accuracy is within the specified limits.

8.7.8.1.4 Method of test

8.7.8.1.4.1 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. Cell 1 is a UTRA FDD cell and cell 2 is a UTRA TDD cell. The second Beacon timeslot shall be provided for cell 2 in timeslot 8. Compressed mode as specified in TS 25.101 [1] section A.5, set 3 of table A.22, is applied. TGPRC and TGCFN shall be set to "Infinity" and "(Current CFN + (256 – TTI/10msec)) mod 256". P-CCPCH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in Table 8.7.8.1.2.

Table 8.7.8.1.2: P-CCPCH RSCP inter frequency tests parameters

Parameter	Unit	Test 1			Test 2		
		Cell 1	Cell 2		Cell 1	Cell 2	
DL timeslot number		n.a.	**0**	**8**	n.a.	**0**	**8**
UTRA RF Channel number		Channel 2	Channel 1		Channel 2	Channel 1	
CPICH_Ec/Ior	dB	-10	n.a.		-10	n.a.	
P-CCPCH_Ec/Ior	dB	-12	-3	n.a.	-12	-3	n.a
SCH_Ec/Ior	dB	-12	-9		-12	-9	
SCH_t_{offset}		n.a.	5		n.a.	5	
PICH_Ec/Ior	dB	-15	n.a.	-3	-15	n.a.	-3
DPCH_Ec/Ior	dB	-15	n.a.		-15	n.a.	
OCNS_Ec/Ior	dB	-1.11	-3.12		-1.11	-3.12	
Ioc	dBm/ 3.84 MHz	-60	-57.7		-84	-84.7	
Îor/Ioc	dB	9.54	7		0	3	
P-CCPCH RSCP, Note 1	dBm	n.a.	-53.7	n.a.	n.a.	-84.7	n.a.
CPICH RSCP, Note 1	dBm	-60.46	n.a.		-94	n.a.	
Io, Note 1	dBm/3.84 MHz	-50	-50		-81	-80	
Propagation condition	-	AWGN			AWGN		
Note 1: P-CCPCH RSCP, CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves. Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.							
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 the UE does not lose the Cell 2 in between the test.							

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 8.7.8.1.2.

8.7.8.1.4.2 Procedure

1) SS shall transmit the PHYSICAL CHANNEL RECONFIGURATION message.

2) UE shall transmit the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

3) SS shall transmit the MEASUREMENT CONTROL message.

4) UE shall transmit periodically MEASUREMENT REPORT messages.

5) SS shall check P-CCPCH RSCP values of Cell 2 in the MEASUREMENT REPORT messages. P-CCPCH RSCP power level of Cell 2 reported by the UE shall be compared to the actually set P-CCPCH RSCP value of Cell 2 for each MEASUREMENT REPORT message.

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 8.7.8.1.2 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, 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] and in Annex I, with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for inter frequency measurement (Step 1):

Information Element	Value/Remark	Version
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
	
	FDD
	Not Present
	
	Not Present
	FDD
	
	1
	Activate
	(Current CFN + (256 – TTI/10msec))mod 256
	
	TDD measurement
	Infinity
	10
	10
	Not Present
	0
	11
	Not Present
	
	Mode 0
	Mode 0
	UL and DL
	Puncturing
	SF/2
	A
	3.0
	3.0
	Not Present
	Not Present
	Not Present
	Not Present
	Not Present
	Not Present
	Not Present
		R99 and Rel-4 only

-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 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	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	
-CHOICE mode	FALSE
-Timeslot ISCP reporting indicator	TDD
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	TRUE
-Reporting cell status	FALSE
-CHOICE reported cell	Report cells within monitored set on non-used frequency
-Maximum number of reported cells	2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

8.7.8.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.8.1.2.

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.

<End of modified section>

<Start of next modified section>

C.5 DL reference compressed mode parameters

Parameters described in table C.5.1 are used in some test specified in TS 25.101 while parameters described in table C.5.2 are used in some tests specified in TS 25.133.

Set 1 parameters in table C.5.1 are applicable when compressed mode by spreading factor reduction is used in downlink. Set 2 parameters in table C.5.1 are applicable when compressed mode by puncturing is used in downlink.

Table C.5.1: Compressed mode reference pattern 1 parameters

Parameter	Set 1	Set 2	Note
TGSN (Transmission Gap Starting Slot Number)	11	11	
TGL1 (Transmission Gap Length 1)	7	7	
TGL2 (Transmission Gap Length 2)	-	-	Only one gap in use.
TGD (Transmission Gap Distance)	0	0	Only one gap in use.
TGPL1 (Transmission Gap Pattern Length)	4	4	
TGPL2 (Transmission Gap Pattern Length)	-	-	R99 and Rel-4: Only one pattern in use. Rel-5 and later releases: Not applicable
TGPRC (Transmission Gap Pattern Repetition Count)	NA	NA	Defined by higher layers
TGCFN (Transmission Gap Connection Frame Number):	NA	NA	Defined by higher layers
UL/DL compressed mode selection	DL & UL	DL & UL	2 configurations possible DL &UL / DL
UL compressed mode method	SF/2	SF/2	
DL compressed mode method	SF/2	Puncturing	
Downlink frame type and Slot format	11B	11A	
Scrambling code change	No	No	
RPP (Recovery period power control mode)	0	0	
ITP (Initial transmission power control mode)	0	0	

Table C.5.2: Compressed mode reference pattern 2 parameters

Parameter	Set 1	Set 2	Set 3	Note
TGSN (Transmission Gap Starting Slot Number)	4	4	10	
TGL1 (Transmission Gap Length 1)	7	7	10	
TGL2 (Transmission Gap Length 2)	-	-	-	Only one gap in use.
TGD (Transmission Gap Distance)	0	0	0	
TGPL1 (Transmission Gap Pattern Length)	3	12	11	
TGPL2 (Transmission Gap Pattern Length)	-	-	-	R99 and Rel-4: Only one pattern in use. Rel-5 and later releases: Not applicable
TGPRC (Transmission Gap Pattern Repetition Count)	NA	NA	NA	Defined by higher layers
TGCFN (Transmission Gap Connection Frame Number):	NA	NA	NA	Defined by higher layers
UL/DL compressed mode selection	DL & UL	DL & UL	DL & UL	2 configurations possible. DL & UL / DL
UL compressed mode method	SF/2	SF/2	SF/2	
DL compressed mode method	SF/2	SF/2	Puncturing	
Downlink frame type and Slot format	11B	11B	11A	
Scrambling code change	No	No	No	
RPP (Recovery period power control mode)	0	0	0	
ITP (Initial transmission power control mode)	0	0	0	

<End of modified section>

3GPP TSG-R5 Meeting #27
Bath, England 25th April – 29th April

Tdoc ⌘R5-050816

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CHANGE REQUEST

⌘ **34.121**	**CR** 527	⌘ **rev**	**-**	⌘ Current version:	**6.0.0** ⌘

*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 the interfering signal in 6.5 Blocking Characteristics and 6.7 Intermodulation Characteristics
Source:	⌘ 3GPP TSG RAN WG5 (Testing)
Work item code:	⌘
Date:	⌘ 27/4/2005
Category:	⌘ **F**
Release:	⌘ Rel-6

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 interfering signal of GSM is not clearly specified.
Summary of change:	⌘ The interfering signal is defined to be continuous and modulated by random data.
Consequences if not approved:	⌘ UE may not test properly.

Clauses affected:	⌘ 6.5, 6.7				
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘ This CR applies for Rel-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.

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.

6.5 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, 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 [1] 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 [1] 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 ≤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 ≤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 ≤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 ≤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 ≤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, band III or band V.

The normative reference for this requirement is TS 25.101 [1] 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 continuous 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 any pseudo random data stream.

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, 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 [1] 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 continuous 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 any pseudo random data stream.

3GPP TSG-RAN5 Meeting #27
Bath, England, 25. April – 29. April 2005

Tdoc ⌘R5-050615

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CHANGE REQUEST

⌘ **34.121**	**CR 528**	⌘**rev** **-** ⌘	Current version:	**6.0.0** ⌘

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 to TC 7.11		
Source:	⌘	3GPP TSG RAN WG5 (Testing)		
Work item code:	⌘	TEI	***Date:*** ⌘	8/04/2005
Category:	⌘	**F**	***Release:*** ⌘	Rel-6
		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:	⌘	Test tolerances have not been taken into account in test parameters in test case 7.11 Demodulation of Paging Channel "PICH Power Offset" IE is missing from specific message contents Maximum test system uncertainties, test tolerances and derivation of test requirements have not been defined for TC 7.11 Demodulation of Paging Channel in Annex F
Summary of change:	⌘	Editorial corrections in section 7.11.2 Initial conditions now refer to test requirements instead of minimum requirements "PICH Power Offset" IE has been added to specific message contents in test procedure section Test parameters tables with test tolerances have been added into "Test Requirement" section Maximum test system uncertainties have been added into Table F.1.4 Test tolerances have been added into table F.2.3 Derivation of test requirements have been added into table F.4.3
Consequences if not approved:	⌘	Test cases are incomplete and a good UE may fail the test

Clauses affected:	⌘	7.11, Annex F.1.4, Annex F.2.3, Annex F.4.3

		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR is applicable to R4 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.

7.11 Demodulation of Paging Channel (PCH)

7.11.1 Definition and applicability

The receiver characteristics of paging channel are determined by the probability of missed paging message (Pm-p). PCH is mapped into the S-CCPCH and it is associated with the transmission of Paging Indicators (PI) to support efficient sleep-mode procedures.

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

7.11.2 Minimum requirements

For the parameters specified in table 7.11.1 the average probability of missed paging (Pm-p) shall be below the specified value in table 7.11.2. Power of downlink channels other than S-CCPCH and PICH are as defined in Table E.3.3 of Annex E. S-CCPCH structure is as defined in Annex C.7.

Table 7.11.1: Parameters for PCH detection

Parameter	Unit	Test 1	Test 2
Number of paging indicators per frame (Np)	-	72	
Phase reference	-	P-CPICH	
I_{oc}	dBm/3.84 MHz	-60	
$\hat{I}_{or}/I_{oc}$	dB	-1	-3
Propagation condition		Static	Case 3

Table 7.11.2: Test requirements for PCH detection

Test Number	S-CCPCH_Ec/Ior	PICH_Ec/Ior	Pm-p
1	-14.8	-19	0.01
2	-9.8	-12	0.01

The reference for this requirement is TS 25.101 [1] clause 8.12.1.

7.11.3 Test purpose

To verify that average probability of missed paging (Pm-p) does not exceed a specified value.

7.11.4 Method of test

7.11.4.1 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 in the case of test 1. Connect the SS, multipath fading simulator and an AWGN noise source to the UE antenna connector as shown in figure A.10 in the case of test 2.

2) Set the test parameters for test 1-2 as specified in tables 7.11.3~~1~~ and 7.11.4~~2~~. In the case of test 2, Setup fading simulator as fading condition case 3 which are described in table D.2.2.1. Power of downlink channels other than S-CCPCH and PICH are as defined in table E.3.3. S-CCPCH structure is as defined in Annex C.7.

7.11.4.2 Procedure

1) The UE is switched on.

2) 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.

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

4) If the UE responds with CELL UPDATE message within 8 seconds, then a success is recorded. If the UE does not respond with CELL UPDATE message within 8 seconds, a failure is recorded.

5) Repeat steps 3-4 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] and clause 6.1.1 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION (STEP 2)

Information Element	Value/remark
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	6
Downlink information for each radio link - Primary CPICH info - Primary scrambling code	Reference to TS 34.108 clause 6.1 “Default settings (FDD)”

SYSTEM INFORMATION BLOCK TYPE5 (STEP 2)

Information Element	Value/remark
- PICH Power offset	-9 dB (in Test 1) -2 dB (in Test 2)
- FACH/PCH information	
- TFS	(PCH)
- Rate matching attribute	256
- PICH info	
- Number of PI per frame	72

7.11.5 Test requirements

For the parameters specified in table 7.11.3 the average probability of missed paging (Pm-p) shall be below the specified value in table 7.11.4. Power of downlink channels other than S-CCPCH and PICH are as defined in Table E.3.3 of Annex E. S-CCPCH structure is as defined in Annex C.7.

Table 7.11.3: Parameters for PCH detection

Parameter	Unit	Test 1	Test 2
Number of paging indicators per frame (Np)	-	72	
Phase reference	-	P-CPICH	
I_{oc}	dBm/3.84 MHz	-60	
$\hat{I}_{or}/I_{oc}$	dB	-0.6	-2.3
Propagation condition		Static	Case 3

Table 7.11.4: Test requirements for PCH detection

Test Number	S-CCPCH_Ec/Ior	PICH_Ec/Ior	Pm-p
1	-14.8	-19	0.01
2	-9.8	-12	0.01

~~The test parameters and requirements are specified in tables 7.11.1 and 7.11.2. The average probability of missed paging (Pm-p) (test procedure step 4) 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.

F.1.4 Performance requirement

Table F.1.4: Maximum Test System Uncertainty for Performance Requirements

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
7.2 Demodulation in Static Propagation Condition	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in DPCH_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 DPCH_Ec/Ior ratio but is not RSS for simplicity. The absolute error of the AWGN Ioc is not important for any tests in clause 7 but is specified as 1.0 dB.
7.3 Demodulation of DCH in multipath Fading Propagation conditions	$\hat{I}_{or}/I_{oc}$ ±0.56 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Worst case gain uncertainty due to the fader from the calibrated static profile is ±0.5 dB In addition the same ±0.3 dB $\hat{I}_{or}/I_{oc}$ ratio error as 7.2. These are uncorrelated so can be RSS. Overall error in $\hat{I}_{or}/I_{oc}$ is $(0.5^2 + 0.3^2)^{0.5}$ = 0.6 dB
7.4 Demodulation of DCH in Moving Propagation conditions	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.5 Demodulation of DCH in Birth-Death Propagation conditions	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.6.1 Demodulation of DCH in open loop Transmit diversity mode	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Worst case gain uncertainty due to the fader from the calibrated static profile is ±0.5 dB per output In addition the same ±0.3 dB $\hat{I}_{or}/I_{oc}$ ratio error as 7.2. These are uncorrelated so can be RSS. Overall error in $\hat{I}_{or}/I_{oc}$ is $(0.5^2 + 0.5^2 + 0.3^2)^{0.5}$ = 0.768 dB. Round up to 0.8 dB

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.6.1
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.6.1
7.7.1 Demodulation in inter-cell soft Handover	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.6.1
7.7.2 Combining of TPC commands Test 1	Ior1,Ior2 ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Test is looking for changes in power – need to allow for relaxation in criteria for power step of probably 0.1 dB to 0.4 dB
7.7.2 Combining of TPC commands Test 2	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.6.1

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
7.7.3 Combining of reliable TPC commands from radio links of different radio link sets	$\hat{I}_{or1}/I_{oc}$ ±0.3 dB $\hat{I}_{or2}/I_{oc}$ ±0.3 dB $\hat{I}_{or3}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_{c1}}{I_{or1}}$ ±0.1 dB $\frac{DPCH\_E_{c2}}{I_{or1}}$ ±0.1 dB $\frac{DPCH\_E_{c3}}{I_{or1}}$ ±0.1 dB Offset of $\frac{DPCH\_E_{c2}}{I_{or1}}$ relative to $\frac{DPCH\_E_{c1}}{I_{or1}}$ ±0.4 dB Offset of $\frac{DPCH\_E_{c3}}{I_{or1}}$ relative to $\frac{DPCH\_E_{c1}}{I_{or1}}$ ±0.4 dB	Same as 7.2. Offsets calculated as RMS of: Ior1/Ioc, DPCH_Ec1/Ior1 and DPCH_Ec2/Ior1 and Ior1/Ioc, DPCH_Ec1/Ior1 and DPCH_Ec3/Ior1 respectively.
7.8.1 Power control in downlink constant BLER target	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.8.2, Power control in downlink initial convergence	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.8.3, Power control in downlink: wind up effects	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.9 Downlink compressed mode	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
7.10 Blind transport format detection Tests 1, 2, 3	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.2
7.10 Blind transport format detection Tests 4, 5, 6	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.11 Demodulation of paging channel (PCH)	~~TBD~~Test 1: $\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB S-CCPCH_Ec/Ior ±0.1 dB PICH_Ec/Ior ±0.1 dB Test 2: $\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB S-CCPCH_Ec/Ior ±0.1 dB PICH_Ec/Ior ±0.1 dB	Test 1: Values for Îor/Ioc and Ioc are the same as 7.2 Uncertainties for S-CCPCH_Ec/Ior and PICH_Ec/Ior are the same as for DPCH_Ec/Ior Test 2: Values for Îor/Ioc and Ioc are the same as 7.3 Uncertainties for S-CCPCH_Ec/Ior and PICH_Ec/Ior are the same as for DPCH_Ec/Ior
7.12 Detection of acquisition indicator (AI)	TBD	

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
7.7.3 Combining of reliable TPC commands from radio links of different radio link sets	Test parameters: 0 dB for $\hat{I}_{or1}/I_{oc}$ 0 dB for $\hat{I}_{or2}/I_{oc}$ 0 dB for $\hat{I}_{or3}/I_{oc}$ 0 dB for DPCH_Ec1/Ior1 0 dB for DPCH_Ec2/Ior1 0 dB for DPCH_Ec3/Ior1 Test requirements: 0 dB for Test 1 0 dB for Test 2
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~~Test 1: 0.4 dB for $\hat{I}_{or}/I_{oc}$ Test 2: 0.7 dB for $\hat{I}_{or}/I_{oc}$
7.12 Detection of acquisition indicator (AI)	TBD

Table F.4.3: Derivation of Test Requirements (Performance tests)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.2 Demodulation of DPCH in static conditions	$\frac{DPCH\_E_c}{I_{or}}$ -5.5 to -16.6 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.7 dB $\frac{DPCH\_E_c}{I_{or}}$ -5.4 to -16.5 dB:
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 1-4	$\frac{DPCH\_E_c}{I_{or}}$ -2.2 to -15.0 I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ + ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -2.1 to -14.9 dB:
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 5-8	$\frac{DPCH\_E_c}{I_{or}}$ -3.2 to -7.7 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 6 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to -2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -3.1 to -7.6 dB:
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 9-12	$\frac{DPCH\_E_c}{I_{or}}$ -4.4 to -11.8 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 6 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -4.3 to –11.7 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 13-16	$\frac{DPCH\_E_c}{I_{or}}$ -2.2 to -15.0 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 $\frac{DPCH\_E_c}{I_{or}}$ -2.1 to -14.9 dB:
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 17-20	$\frac{DPCH\_E_c}{I_{or}}$ -1.4 to -8.8 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 6 to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -1.3 to -8.7 dB:
7.4 Demodulation of DPCH in moving propagation conditions	$\frac{DPCH\_E_c}{I_{or}}$ -10.9 to -14.5 I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -10.8 to –14.4 dB:
7.5 Demodulation of DPCH birth-death propagation conditions	$\frac{DPCH\_E_c}{I_{or}}$ -8.7 to -12.6 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -18.6 to -12.5 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.6.1 Demodulation of DPCH in transmit diversity propagation conditions	$\frac{DPCH\_E_c}{I_{or}}$ -16.8 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -16.7 dB:
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\frac{DPCH\_E_c}{I_{or}}$ -18 to -18.3 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -17.9 to -18.2 dB:
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\frac{DPCH\_E_c}{I_{or}}$ -5.0 to -10.5 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 0 to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 0.8 to -2.2 dB $\frac{DPCH\_E_c}{I_{or}}$ -4.9 to -10.4 dB:
7.7.1 Demodulation in inter-cell soft Handover	$\frac{DPCH\_E_c}{I_{or}}$ -5.5 to –15.2 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = Ior2/Ioc = 6 to 0 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.8 to 0.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -5.4 to –15.4 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.7.2 Combining of TPC commands Test 1	$\frac{DPCH\_E_c}{I_{or}}$ -12 dB Ior1 and Ior2 -60dBm	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0dB for Ior1 and Ior2	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\frac{DPCH\_E_c}{I_{or}}$ = -11,9 dB: Ior1 = –60dBm Ior2 = –60dBm The absolute levels of Ior1 and Ior2 are not important to this test.
7.7.2 Combining of TPC commands Test 2	$\frac{DPCH\_E_c}{I_{or}}$ -12 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 0 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 0.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -11,9 dB:
7.7.3 Combining of reliable TPC commands from radio links of different radio link sets	Test parameters: $\frac{DPCH\_E_{c1}}{I_{or1}}$ = set at the level corresponding to 5% TPC error rate. Test 1: $\frac{DPCH\_E_{c2}}{I_{or1}} = \frac{DPCH\_E_{c1}}{I_{or1}}$ -10 dB $\frac{DPCH\_E_{c3}}{I_{or1}} = \frac{DPCH\_E_{c1}}{I_{or1}}$ -10 dB Test 2: $\frac{DPCH\_E_{c2}}{I_{or1}} = \frac{DPCH\_E_{c1}}{I_{or1}}$ +6 dB Test requirements: Test 1: UE output power = -15 dBm ± 5 dB Test 2: UE output power = -15 dBm ± 3 dB	0 dB for all test parameters 0 dB for all test requirements	Test parameters: $\frac{DPCH\_E_{c1}}{I_{or1}}$ = ratio + TT $\frac{DPCH\_E_{c2}}{I_{or1}}$ = ratio + TT $\frac{DPCH\_E_{c3}}{I_{or1}}$ = ratio + TT Test requirements: Test 1: UE output power = -15 dBm ± (5 dB + TT) Test 2: UE output power = -15 dBm ± (3 dB + TT)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.8.1 Power control in downlink constant BLER target	$\frac{DPCH\_E_c}{I_{or}}$ -9 to -16 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 to -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 to -0.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -8.9 to –15.9 dB:
7.8.2, Power control in downlink initial convergence	$\frac{DPCH\_E_c}{I_{or}}$ -8.1 to –18.9 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -8.0 to -18.8 dB:
7.8.3, Power control in downlink: wind up effects	$\frac{DPCH\_E_c}{I_{or}}$ -13.3 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 5 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 5.6 dB $\frac{DPCH\_E_c}{I_{or}}$ -13.2 dB:
7.9 Downlink compressed mode	$\frac{DPCH\_E_c}{I_{or}}$ Test 1 -14.6 dB Test 3 -15.2 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 dB $\frac{DPCH\_E_c}{I_{or}}$ Test 1 -14.5 dB Test 3 -15.1 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.10 Blind transport format detection Tests 1, 2, 3	$\frac{DPCH\_E_c}{I_{or}}$ -17.7 to -18.4 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.7 dB $\frac{DPCH\_E_c}{I_{or}}$ -17.6 to –18.3 dB:
7.10 Blind transport format detection Tests 4, 5, 6	$\frac{DPCH\_E_c}{I_{or}}$ -13.0 to -13.8 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -12.9 to -13.7 dB:
7.11 Demodulation of paging channel (PCH)	~~TBD~~Test 1: Ioc=-60 dBm Îor/Ioc = -1 dB S-CCPCH_Ec/Ior = -14.8 dB PICH_Ec/Ior = -19 dB Test 2: Ioc=-60 dBm Îor/Ioc = -3 dB S-CCPCH_Ec/Ior = -9.8 dB PICH_Ec/Ior = -12 dB	Test 1: 0.4 dB for Îor/Ioc Test 2: 0.7 dB for Îor/Ioc	Ioc, S-CCPCH_Ec/Ior and PICH_Ec/Ior are unchanged Since PICH Power Offset has to be an integer value TT for PICH_Ec/Ior is zero. But TT of Îor/Ioc has been increased by 0.1 dB from its normal value (0.3 dB / 0.6 dB) due to test system uncertainty of PICH_Ec/Ior. Formulas: $\hat{I}_{or}/I_{oc}$ = ratio + TT
7.12 Detection of acquisition indicator (AI)	TBD		

3GPP TSG-R5 Meeting #27 **Tdoc ⌘R5-050820**
Bath, England 25th April – 29th April

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	529	⌘rev	-	⌘	Current version:	6.0.0	⌘

*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 7.7.2 Combining of TPC commands from radio links of different radio link sets
Source:	⌘ 3GPP TSG RAN WG5 (Testing)
Work item code:	⌘
Date:	⌘ 275/4/2005
Category:	⌘ **F**
Release:	⌘ Rel-6

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)The purpose of the test is to check required uplink power step. Without a step back to 1) in the procedure, the uplink power may reache the minimum power during the stastical method. 2)The unit of test result for test 2 is not align with minimum requirement
Summary of change:	⌘ 1)The procedure is corrected to repeat from 1) to 3). 2)The unit of test result is aligned with minimum requirement.
Consequences if not approved:	⌘ Good UEs may fail test.

Clauses affected:	⌘ 7.7.2

	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.

7.7.2 Combining of TPC commands from radio links of different radio link sets

7.7.2.1 Definition and applicability

When a UE is in soft handover, multiple TPC commands may be received in each slot from different cells in the active set. In general, the TPC commands transmitted in the same slot in the different cells may be different and need to be combined to give TPC_cmd as specified in TS 25.214 [5], in order to determine the required uplink power step.

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

7.7.2.2 Minimum requirements

Test parameters are specified in table 7.7.2.1. The delay profiles of the signals received from the different cells are the same but time-shifted by 10 chips.

For Test 1, the sequence of uplink power changes between adjacent slots shall be as shown in table 7.7.2.2 over the 4 consecutive slots more than 99% of the time. Note that this case is without an additional noise source I_{oc}.

For Test 2, the Cell1 and Cell2 TPC patterns are repeated a number of times. If the transmitted power of a given slot is increased compared to the previous slot, then a variable "Transmitted power UP" is increased by one, otherwise a variable "Transmitted power DOWN" is increased by one. The requirements for "Transmitted power UP" and "Transmitted power DOWN" are shown in table 7.7.2.3.

Table 7.7.2.1: Parameters for TPC command combining

Parameter	Test 1	Test 2	Unit
Phase reference	P-CPICH		-
DPCH_Ec/Ior	−12		dB
$\hat{I}_{or1}$ and $\hat{I}_{or2}$	−60		dBm / 3,84 MHz
I_{oc}	-	-60	dBm / 3,84 MHz
Power-Control-Algorithm	Algorithm 1		-
Cell 1 TPC commands over 4 slots	{0,0,1,1}		-
Cell 2 TPC commands over 4 slots	{0,1,0,1}		-
Information Data Rate	12,2		Kbps
Propagation condition	Static without AWGN source I_{oc}	Multi-path fading case 3	-

Table 7.7.2.2: Requirements for Test 1

Test Number	Required power changes over the 4 consecutive slots
1	Down, Down, Down, Up

Table 7.7.2.3: Requirements for Test 2

Test Number	Ratio (Transmitted power UP) / (Total number of slots)	Ratio (Transmitted power DOWN) / (Total number of slots)
2	≥0,25	≥0,5

The reference for this requirement is TS 25.101 [1] clause 8.7.2.1.

7.7.2.3 Test purpose

To verify that the combining of TPC commands received in soft handover results in TPC_cmd being derived so as to meet the requirements stated in tables 7.7.2.2 and 7.7.2.3.

7.7.2.4 Method of test

7.7.2.4.1 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.

1) Connect two SS's to the UE antenna connector as shown in figure A.13.
2) Set the test parameters as specified in table 7.7.2.4 for Test 1.
3) Set up a call according to the Generic Call Setup procedure.
4) Signal the uplink DPCH power control parameters to use Algorithm 1 and a step size of 1dB.
5) 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 the generic call setup procedure and loopback test.

7.7.2.4.2 Procedures

1) Before proceeding with paragraph (2), set the output power of the UE, measured at the UE antenna connector, to be in the range –10 ± 9 dBm. This may be achieved by setting the downlink signal ($\hat{I}_{or}$) to yield an appropriate open loop output power and/or by generating suitable downlink TPC commands from the SSs.
2) Send the following sequences of TPC commands in the downlink from each SS over a period of 5 timeslots:

	Downlink TPC commands				
	Slot #0	Slot #1	Slot #2	Slot #3	Slot #4
SS1	0	0	0	1	1
SS2	0	0	1	0	1

3) Measure the mean power at the UE antenna connector in timeslots # 0, 1, 2, 3 and 4, not including the 25 µs transient periods at the start and end of each slot.
4) Repeat step 1) to 3) according to Annex F.6.2 Table F.6.2.8.
5) End test 1 and disconnect UE.
6) Connect two SS's and an AWGN source to the UE antenna connector as shown in figure A.11.
7) Initialise variables "Transmitted power UP" and "Transmitted power DOWN" to zero.
8) Set the test parameters as specified in table 7.7.2.4 for Test 2.
9) Set up a call according to the Generic Call Setup procedure.
10) Signal the uplink DPCH power control parameters to use Algorithm 1 and a step size of 1 dB.
11) Enter the UE into loopback test mode and start the loopback test.
12) Perform the following steps a) to d) ~~[~~15~~]~~times:
    a) Before proceeding with step b), set the output power of the UE, measured at the UE antenna connector, to be in the range –10 ± 9 dBm. This may be achieved by generating suitable downlink TPC commands from the SSs.
    b) Send the following sequences of TPC commands in the downlink from each SS over a period of 33 timeslots:

	Downlink TPC commands
SS1	1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1
SS2	1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1

c) Measure the mean power at the UE antenna connector in each timeslot, not including the 25 μs transient periods at the start and end of each slot.

d) For each timeslot from the 2nd timeslot to the 33rd timeslot inclusive:

– if the mean power in that timeslot is greater than or equal to the mean power in the previous timeslot plus 0,5 dB, increment "Transmitted power UP" by 1;

– if the mean power in that timeslot is less than or equal to the mean power in the previous timeslot minus 0,5 dB, increment "Transmitted power DOWN" by 1.

7.7.2.5 Test requirements

Test parameters are specified in table 7.7.2.4. The delay profiles of the signals received from the different cells are the same but time-shifted by 10 chips.

Table 7.7.2.4: Parameters for TPC command combining

Parameter	Test 1	Test 2	Unit
Phase reference	P-CPICH		-
DPCH_Ec/Ior	–11,9		dB
$\hat{I}_{or1}$ and $\hat{I}_{or2}$	-60	-59.2	dBm / 3,84 MHz
I_{oc}	-	-60	dBm / 3,84 MHz
Power-Control-Algorithm	Algorithm 1		-
Cell 1 TPC commands over 4 slots	{0,0,1,1}		-
Cell 2 TPC commands over 4 slots	{0,1,0,1}		-
Information Data Rate	12,2		Kbps
Propagation condition	Static without AWGN source I_{oc}	Multi-path fading case 3	-

1) In Step 3) of clause 7.7.2.4.2, the mean power in slot #1 shall be less than or equal to the mean power in slot #0 minus 0,5 dB.

2) In Step 3) of clause 7.7.2.4.2, the mean power in slot #2 shall be less than or equal to the mean power in slot #1 minus 0,5 dB.

3) In Step 3) of clause 7.7.2.4.2, the mean power in slot #3 shall be less than or equal to the mean power in slot #2 minus 0,5 dB.

4) In Step 3) of clause 7.7.2.4.2, the mean power in slot #4 shall be greater than or equal to the mean power in slot #3 plus 0,5 dB.

5) The sequence of test requirements 1-4 shall be fulfilled more than 99% of the time.

6) At the end of the test, "Transmitted power UP" shall be greater than or equal to ~~[~~95~~]~~(19.8% of Total number of slots) and "Transmitted power DOWN" shall be greater than or equal to ~~[~~210~~]~~(43.8% of total number of slots).

NOTE 1: The test limits in requirement (6) have been computed to give a confidence level of ~~[~~99,7~~]~~% that a UE which follows the core requirements will pass. The number of timeslots has been chosen to get a good compromise between the test time and the risk of passing a bad UE.

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.

3GPP RAN WG5 Meeting #27
Bath, England, 25-29 April, 2005

Tdoc ⌘R5-050833

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	530	⌘ rev	-	⌘	Current version:	6.0.0	⌘

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

Title:	⌘	Clarification of TS34.121 Closed Loop Transmit Diversity test cases		
Source:	⌘	3GPP TSG RAN WG5 (Testing)		
Work item code:	⌘	TEI	***Date:*** ⌘	25/04/2005
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-6 *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 is needed on how the 4% feedback error ratio is generated
Summary of change:	⌘	4% feedback error ratio is generated by inversion of every bit
Consequences if not approved:	⌘	The test can be unclear

Clauses affected:	⌘	7.6.2, 9.2.3				
		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				

7.6.2 Demodulation of DCH in closed loop transmit diversity mode

7.6.2.1 Definition and applicability

The receive characteristic of the dedicated channel (DCH) in closed loop transmit diversity mode is determined by the Block Error Ratio (BLER). DCH is mapped into in Dedicated Physical Channel (DPCH).

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

7.6.2.2 Minimum requirements

For the parameters specified in table 7.6.2.1 the average downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio shall be below the specified value for the BLER shown in table 7.6.2.2.

Table 7.6.2.1: Test Parameters for DCH Reception in closed loop transmit diversity mode (Propagation condition: Case 1)

Parameter	Test 1 (Mode 1)	Test 2 (Mode 2)	Unit
$\hat{I}_{or}/I_{oc}$	9	9	dB
I_{oc}	–60	–60	dBm / 3,84 MHz
Information data rate	12,2	12,2	kbps
Feedback error ratio	4	4	%
Closed loop timing adjustment mode	1	1	-

Table 7.6.2.2: Test requirements for DCH reception in closed loop transmit diversity mode

Test Number	$\frac{DPCH\_E_c}{I_{or}}$ (see note)	BLER
1	–18,0 dB	10^{-2}
2	–18,3 dB	10^{-2}
NOTE: This is the total power from both antennas. Power sharing between antennas are closed loop mode dependent as specified in TS 25.214 [5].		

The reference for this requirement is TS 25.101 [1] clause 8.6.2.1.

7.6.2.3 Test purpose

To verify that UE reliably demodulates the DPCH of the Node B while closed loop transmit diversity is enabled during the connection.

7.6.2.4 Method of test

7.6.2.4.1 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.

1) Connect SS, multi-path fading simulators and an AWGN source to the UE antenna connector as shown in figure A.12.

2) Set up a call according to the Generic call setup procedure specified in TS 34.108 [3] clause 7.3.2, with the exceptions for information elements listed in table 7.6.2.3. With these exceptions, closed loop transmit diversity mode is activated.

3) RF parameters are set up according to table 7.6.2.1 and table E 3.5.

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

5) Set up fading simulators as fading condition case 1, which is described in table D.2.2.1.

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

Table 7.6.2.3: 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
CHOICE channel requirement	Uplink DPCH info
- Number of FBI bit	1
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

RRC CONNECTION SETUP for Closed loop mode2

Information Element	Value/remark
CHOICE channel requirement	Uplink DPCH info
- Number of FBI bit	1
Downlink information common for all radio links - CHOICE mode - TX Diversity Mode	 FDD Closed loop mode2
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
CHOICE channel requirement	Uplink DPCH info
- Number of FBI bit	1
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 mode2

Information Element	Value/remark
CHOICE channel requirement	Uplink DPCH info
- Number of FBI bit	1
Downlink information common for all radio links - Choice mode - TX Diversity Mode	 FDD Closed loop mode2
Downlink DPCH info for each RL - CHOICE mode - Downlink DPCH info for each RL - Closed loop timing adjustment mode	 FDD 1

7.6.2.4.2 Procedure

1) Measure BLER in points specified in table 7.6.2.2.

7.6.2.5 Test Requirements

For the parameters specified in table 7.6.2.4 the average downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio shall be below the specified value for the BLER shown in table 7.6.2.5.

Table 7.6.2.4: Test Parameters for DCH Reception in closed loop transmit diversity mode (Propagation condition: Case 1)

Parameter	Test 1 (Mode 1)	Test 2 (Mode 2)	Unit
$\hat{I}_{or}/I_{oc}$	9,8	9,8	dB
I_{oc}	–60	–60	dBm / 3,84 MHz
Information data rate	12,2	12,2	kbps
Feedback error ratio (*)	4	4	%
Closed loop timing adjustment mode	1	1	-
* Note: As the uplink is error free, the feedback error ratio is generated by the SS internally as follows: 4% of the feedback bits, received by the SS on the uplink, shall be inverted prior to being processed. The inverted bits shall occur at random, e.g controled by a random generator			

Table 7.6.2.5: Test requirements for DCH reception in closed loop transmit diversity mode

Test Number	$\frac{DPCH\_E_c}{I_{or}}$ (see note)	BLER
1	–17,9 dB	10^{-2}
2	–18,2 dB	10^{-2}
NOTE: This is the total power from both antennas. Power sharing between antennas are closed loop mode dependent as specified in TS 25.214 [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.

{UNCHANGED SECTIONS ARE SKIPPED HERE }

9.2.3 Closed Loop Diversity Performance

9.2.3.1 Definition and applicability

The receiver 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 rates supported.

The requirements and this test apply to Release 5 and later releases for all types of UTRA for FDD UE that support HSDPA UE capability categories 1 to 6, 11 and 12.

The requirements and this test apply for Release 6 and later releases to all types of UTRA for the FDD UE that support HSDPA UE capability categories 7 and 8.

UE capability categories 9 and 10 are FFS.

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 7	H-Set 6
Category 8	H-Set 6
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 RV's)
DTX	DTX: retransmission using the RV previously transmitted to the same H-ARQ process

The requirements are specified in terms of minimum information bit throughput R for the DL reference channels H-set 1/2/3/4/5 specified in Annex C.8.1.1, C.8.1.2, C.8.1.3, C.8.1.4 and C.8.1.5 respectively, with the addition of the relevant parameters in Tables 9.2.3.3, 9.2.3.5 and 9.2.3.7 plus the downlink physical channel setup according to table E.5.3.

Using this configuration the throughput shall meet or exceed the minimum requirements specified in tables 9.2.3.4, 9.2.3.6, 9.2.3.8 and 9.2.3.9 respectively.

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 Ratio	%	4		
Closed loop timing adjustment mode		1		
Note: The HS-SCCH-1 and HS-PDSCH shall be transmitted continuously with constant power. HS-SCCH-1 shall only use the identity of the UE under test for those TTI intended for the UE.				

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 16QAM 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 Ratio	%	4		
Closed loop timing adjustment mode		1		
Note: The HS-SCCH-1 and HS-PDSCH shall be transmitted continuously with constant power. HS-SCCH-1 shall only use the identity of the UE under test for those TTI intended for the UE.				

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 Ratio	%	4		
Closed loop timing adjustment mode		1		
Note: The HS-SCCH-1 and HS-PDSCH shall be transmitted continuously with constant power. HS-SCCH-1 shall only use the identity of the UE under test for those TTI intended for the UE.				

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
* Note: 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
* Note: 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 falling bellow 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.

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.

2. Set the test parameters for tests as specified in table's 9.2.3.11, 9.2.3.13 and 9.2.3.15 and levels as specified in table's 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 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] with levels according to table E.5.0.
2. Once the HSDPA connection is setup, change levels according to Tables E.5.6 to E.5.9 and 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. ~~As the uplink is error free, the feedback error ratio is generated by the SS internally as follows: 4% of the feedback bits, received by the SS on the uplink , shall be inverted prior to being processed. The inverted bits shall occur at random, e.g controled by a random generator~~

~~5~~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 Test Requirements

Tables 9.2.3.11 to 9.2.3.17 define the primary level settings including test tolerance and test parameters for all relevant throughput tests. The pass / fail decision for throughput is done according to Annex F.6.3.

Tables E.5.6 to E.5.8 define the secondary and subsequently ranked level settings including test tolerance. As those level settings are not uniform for the throughput tests in this clause, Table E.5.9 indicates which levels are applied, when the primary level settings (Ec/Ior and Ior/Ioc) and propagation conditions (PA3,PB3, VA30, VA 120) vary.

Note that the levels in tables E.5.6 to E.5.8, when applied in this subclause (closed loop transmit diversity) are equal to the sum of the levels at both antennas. They are equally divided between both antennas according to Table E.5.3: column Note.

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 Ratio (*)	%	4		
Closed loop timing adjustment mode		1		
* Note : As the uplink is error free, the feedback error ratio is generated by the SS internally as follows: 4% of the feedback bits, received by the SS on the uplink, shall be inverted prior to being processed. The inverted bits shall occur at random, e.g controled by a random generator				

Table 9.2.3.12: 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) * $\hat{I}_{or}/I_{oc}$ = 0.8 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10.8 dB
1	PA3	-5.9	118	399
		-2.9	225	458
2	PB3	-5.9	50	199
		-2.9	173	301
3	VA30	-5.9	47	204
		-2.9	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 16QAM 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 Ratio (*)	%	4		
Closed loop timing adjustment mode		1		
* Note : As the uplink is error free, the feedback error ratio is generated by the SS internally as follows: 4% of the feedback bits, received by the SS on the uplink, shall be inverted prior to being processed. The inverted bits shall occur at random, e.g controled by a random generator				

Table 9.2.3.14 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) * $\hat{I}_{or}/I_{oc}$ = 10.8 dB
1	PA3	-5.9	361
		-2.9	500
2	PB3	-5.9	74
		-2.9	255
3	VA30	-5.9	84
		-2.9	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 Ratio (*)	%	4		
Closed loop timing adjustment mode		1		
* Note : As the uplink is error free, the feedback error ratio is generated by the SS internally as follows: 4% of the feedback bits, received by the SS on the uplink, shall be inverted prior to being processed. The inverted bits shall occur at random, e.g controled by a random generator				

Table 9.2.3.16: 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) * $\hat{I}_{or}/I_{oc}$ = 0.8 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10.8 dB
1	PA3	-5.9	114	398
		-2.9	223	457
2	PB3	-5.9	43	196
		-2.9	167	292
3	VA30	-5.9	40	199
		-2.9	170	305
* Note: The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.2.3.17: 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) * $\hat{I}_{or}/I_{oc}$ = 0.8 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10.8 dB
1	PA3	-5.9	177	599
		-2.9	338	687
2	PB3	-5.9	75	299
		-2.9	260	452
3	VA30	-5.9	71	306
		-2.9	258	458
* Note: 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

3GPP TSG-RAN5 Meeting #27
Bath, UK, 25th – 29th April 2005

Tdoc ⌘R5-050843

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	531	⌘ rev	-	⌘	Current version:	6.0.0	⌘

*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: Clarification of Annex C.6 for BLER measurement configurations		
Source:	⌘	3GPP TSG RAN WG5 (Testing)		
Work item code:	⌘	TEI	***Date:*** ⌘	27/04/2005
Category:	⌘	**F**	***Release:*** ⌘	Rel-6
		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 scope and content of C.6 (Auxiliary Measurement Channels) needed.

Reference to Annex C.6 from section 7.1 missing.

Test parameters when UE test loop mode 1 and RLC AM reference measurement channels are used to measure BLER are missing. These parameters need to be carefully selected to avoid UE transmission buffer overflow when the test method is used to measure BLER on asymmetric uplink/downlink configurations. By setting the UE test loop mode 1 parameter “UL RLC SDU size” to 0 then no data will be returned by the UE and thus there will be no risk of causing UE buffer overflow.

Reduction of test configurations to those actually needed to perform downlink BLER testing.

Summary of change: ⌘

1. Added reference to Annex C.6 to section 7.1.
2. Editorial correction to Table 7.1.1.
3. Clause C.6 changed from informative to normative.
4. Clause C.6 introduction clarified.
5. “kbit/s” changed to “kbps”
6. Table C.6.2 replaced by a table showing more details for the applicable BLER test method and reference measurement channels for different DL and UL combinations.
7. Titles and table headings in sections C.3 to C.7 changed to be aligned with new table in section C.6.2.

		8. Changed sections C.6.5 and C.6.6 to Void. 9. For the downlink 64 kbps configuration using test loop mode 2 a transition period is defined as "This configuration is only valid in a transition period until RAN5#29 and will then be removed.".
Consequences if not approved:	⌘	RF performance test cases 7.2.1, 7.3.1 and 7.7.1 for asymmetric configurations using UE test loop mode 1 and RLC AM may fail conformant UE. Several configurations for BLER testing which are not necessary for conformance testing would remain in the specification.

Clauses affected:	⌘	7.1, Annex C.6				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	Applicable for terminals supporting R99 and 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

<Start of first modified section>

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 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 Annex C.6. See 3GPP TS 34.109 [4] for details regarding the UE test loop.

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

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 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.

<End of modified section>

<Start of next modified section>

C.6 Auxiliary measurement channels ~~(informative)~~

C.6.1 Introduction

BLER measurements for test cases where the UL data rate is less or equal to the DL data rate require that special auxiliary measurement channels (AUXMC) are used. This annex specifies the alternative auxiliary measurement channels and the UE test loop mode parameters to be used for the different UL and DL data rate combinations.

~~BLER tests with (UL data rate ≤ DL data rate) need special attention. This annex defines a choice of measurement channels for all UL-DL - data rate combinations.~~

C.6.2 Channel combinations for BLER measurements

Table C.6.2 BLER test method and ~~M~~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 TM, TL2, (UL CRC off, see C.6.4)~~	~~RLC TM, TL2~~	~~RLC TM, TL2~~
~~RMC 144kbit/s~~		~~RLC AM (ACK/NACK count)~~	~~RLC TM, TL2, (UL CRC off, see C.6.5)~~	~~RLC TM, TL2~~
~~RMC 384kbit/s~~		~~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.~~

~~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.~~

DL rate [kbps]	UE UL RMC rate capability [kbps]	BLER Test method	DL RMC	UL RMC	UE test loop mode (Note 1)	Comments
12.2	RMC 12.2	Loopback Data+CRC	DL TM RMC 12.2 kbps See C.3.1	UL TM AUXMC 12.2 kbps, no CRC See C.6.3	2	
64	RMC 12.2	AM ACK/NACK	DL AM RMC 64 kbps See C.3.2	UL AM AUXMC 12.2 kbps See C.6.7	1	DL RLC SDU size=1256 UL RLC SDU size=0 See Note 2
64	RMC 64	Loopback Data+CRC	DL TM RMC 64 kbps See C.3.2	UL TM AUXMC 64 kbps, no CRC See C.6.4	2	This configuration is only valid in a transition period until RAN5#29 and will then be removed.
144	RMC 12.2	AM ACK/NACK	DL AM RMC 144 kbps See C.3.3	UL AM AUXMC 12.2 kbps See C.6.7	1	DL RLC SDU size=2856 UL RLC SDU size=0 See Note 3
384	RMC 12.2	AM ACK/NACK	DL AM RMC 384 kbps See C.3.4	UL AM AUXMC 12.2 kbps See C.6.7	1	DL RLC SDU size=3816 UL RLC SDU size=0 See Note 4

Note 1 See TS 34.109 [4] for details regarding UE test loop modes. See TS 34.109 [4] Annex A.3 for description of the BLER test method using TM reference measurement channel and UE test loop mode 2 (Loopback Data+CRC). See TS 34.109 [4] Annex A.2 for BLER test method using AM reference measurement channels and UE test loop mode 1 (AM ACK/NACK).

Note 2 The DL AM RMC for 64 kbps according to clause C.3.2 table C.3.2.3 has payload size = 1264 bits and TTI = 20 ms. The SS sends one RLC SDU of size 1256 bits (payload size of 1264 bits – 8 bits for length indicator and expansion bit) every downlink TTI (20 ms). The UE test loop parameter "UL RLC SDU size" is set to 0 (no data will be returned) in order to avoid UE buffer overflows.

Note 3 The DL AM RMC for 144 kbps according to clause C.3.3 table C.3.3.3 has payload size = 2864 bits and TTI = 20 ms. The SS sends one RLC SDU of size 2856 bits (payload size of 2864 bits – 8 bits for length indicator and expansion bit) every downlink TTI (20 ms). The UE test loop parameter "UL RLC SDU size" is set to 0 (no data will be returned) in order to avoid UE buffer overflows.

Note 4 The DL AM RMC for 384 kbps according to clause C.3.4 table C.3.4.3 has a payload size of 3824 bits and a TTI of 10 ms. The SS sends one RLC SDU of size 3816 bits (=payload size of 3824 bits – 8 bits for length indicator and expansion bit) every downlink TTI (10 ms). The UE test loop parameter "UL RLC SDU size" set to 0 (no data will be returned) in order to avoid UE buffer overflows.

C.6.3 UL auxiliary reference measurement channel (TM, 12.2 kbps, no CRC)~~UL-CRC off for 12.2 kbit/s RMC~~

Table C.6.3 UL AUXMC TM 12.2 kbps (13 kbps), no CRC~~12.2 kbit/s RMC (13 kbit/s RMC)~~

Higher Layer	RAB/Signalling RB		RAB	SRB
RLC	Logical channel type		DTCH	DCCH
	RLC mode		TM	UM/AM
	Payload sizes, bit		260	88/80
	Max data rate, bps		13000	2200/2000
	PDU header, bit		N/A	8/16
	TrD PDU header, bit		0	N/A
MAC	MAC header, bit		0	4
	MAC multiplexing		N/A	Yes
Layer 1	TrCH type		DCH	DCH
	Transport Channel Identity		1	5
	TB sizes, bit		260	100
	TFS	TF0, bits	0*260	0*100
		TF1, bits	1*260	1*100
	TTI, ms		20	40
	Coding type		Convolution Coding	Convolution Coding
	Coding Rate		1/3	1/3
	CRC, bit		0	12
	Max number of bits/TTI after channel coding		804	360
	Uplink: Max number of bits/radio frame before rate matching		402	90
	RM attribute		256	256

C.6.4 UL auxiliary reference measurement channel (TM, 64 kbps, no CRC)~~UL-CRC off for 64 kbit/s RMC~~

Table C.6.4 UL AUXMC TM 64 kbps (64.8 kbps), no CRC~~64 kbit/s RMC (64.8 kbit/s RMC)~~

Higher Layer	RAB/Signalling RB		RAB	SRB
RLC	Logical channel type		DTCH	DCCH
	RLC mode		TM	UM/AM
	Payload sizes, bit		1296	88/80
	Max data rate, bps		64800	2200/2000
	PDU header, bit		N/A	8/16
	TrD PDU header, bit		0	N/A
MAC	MAC header, bit		0	4
	MAC multiplexing		N/A	Yes
Layer 1	TrCH type		DCH	DCH
	Transport Channel Identity		1	5
	TB sizes, bit		1296	100
	TFS	TF0, bits	0*1296	0*100
		TF1, bits	1*1296	1*100
	TTI, ms		20	40
	Coding type		Turbo Coding	Convolution Coding
	Coding Rate		N/A	1/3
	CRC, bit		0	12
	Max number of bits/TTI after channel coding		3900	360
	Uplink: Max number of bits/radio frame before rate matching		1950	90
	RM attribute		256	256

C.6.5 Void~~UL-CRC off for 144 kbit/s RMC~~

Table C.6.5 ~~144 kbit/s RMC (144.8 kbit/s RMC)~~Void

~~Higher Layer~~	~~RAB/Signalling RB~~		~~RAB~~	~~SRB~~
~~RLC~~	~~Logical channel type~~		~~DTCH~~	~~DCCH~~
	~~RLC mode~~		~~TM~~	~~UM/AM~~
	~~Payload sizes, bit~~		~~2896~~	~~88/80~~
	~~Max data rate, bps~~		~~144800~~	~~2200/2000~~
	~~PDU header, bit~~		~~N/A~~	~~8/16~~
	~~TrD PDU header, bit~~		~~0~~	~~N/A~~
~~MAC~~	~~MAC header, bit~~		~~0~~	~~4~~
	~~MAC multiplexing~~		~~N/A~~	~~Yes~~
~~Layer 1~~	~~TrCH type~~		~~DCH~~	~~DCH~~
	~~Transport Channel Identity~~		~~1~~	~~5~~
	~~TB sizes, bit~~		~~2896~~	~~100~~
	~~TFS~~	~~TF0, bits~~	~~0*2896~~	~~0*100~~
		~~TF1, bits~~	~~1*2896~~	~~1*100~~
	~~TTI, ms~~		~~20~~	~~40~~
	~~Coding type~~		~~Turbo Coding~~	~~Convolution Coding~~
	~~Coding Rate~~		~~N/A~~	~~1/3~~
	~~CRC, bit~~		~~0~~	~~12~~
	~~Max number of bits/TTI after channel coding~~		~~8700~~	~~360~~
	~~Uplink: Max number of bits/radio frame before rate matching~~		~~4350~~	~~90~~
	~~RM attribute~~		~~256~~	~~256~~

C.6.6 Void~~UL-CRC off for 384 kbit/s RMC~~

Table C.6.6 ~~384 kbit/s RMC (385.6 kbit/s RMC)~~Void

~~Higher Layer~~	~~RAB/Signalling RB~~		~~RAB~~	~~SRB~~
~~RLC~~	~~Logical channel type~~		~~DTCH~~	~~DCCH~~
	~~RLC mode~~		~~TM~~	~~UM/AM~~
	~~Payload sizes, bit~~		~~3856~~	~~88/80~~
	~~Max data rate, bps~~		~~385600~~	~~2200/2000~~
	~~PDU header, bit~~		~~N/A~~	~~8/16~~
	~~TrD PDU header, bit~~		~~0~~	~~N/A~~
~~MAC~~	~~MAC header, bit~~		~~0~~	~~4~~
	~~MAC multiplexing~~		~~N/A~~	~~Yes~~
~~Layer 1~~	~~TrCH type~~		~~DCH~~	~~DCH~~
	~~Transport Channel Identity~~		~~1~~	~~5~~
	~~TB sizes, bit~~		~~3856~~	~~100~~
	~~TFS~~	~~TF0, bits~~	~~0*3856~~	~~0*100~~
		~~TF1, bits~~	~~1*3856~~	~~1*100~~
	~~TTI, ms~~		~~10~~	~~40~~
	~~Coding type~~		~~Turbo Coding~~	~~Convolution Coding~~
	~~Coding Rate~~		~~N/A~~	~~1/3~~
	~~CRC, bit~~		~~0~~	~~12~~
	~~Max number of bits/TTI after channel coding~~		~~11580~~	~~360~~
	~~Uplink: Max number of bits/radio frame before rate matching~~		~~11580~~	~~90~~
	~~RM attribute~~		~~256~~	~~256~~

C.6.7 UL AUXMC AM 12.2 kbps~~Aux Measurement Channel for RMC 12.2 kbit/s with AM-RLC~~

Table C.6.7 UL AUXMC AM 12.2 kbps (11.2 kbps)~~Aux-MC with AM-RLC for low capability UEs~~

Higher Layer	RAB/Signalling RB		RAB	SRB
RLC	Logical channel type		DTCH	DCCH
	RLC mode		AM	UM/AM
	Payload sizes, bit		224	88/80
	Max data rate, bps		11200	2200/2000
	PDU header, bit		16	8/16
	TrD PDU header, bit		N/A	N/A
MAC	MAC header, bit		0	4
	MAC multiplexing		N/A	Yes
Layer 1	TrCH type		DCH	DCH
	Transport Channel Identity		1	5
	TB sizes, bit		240	100
	TFS	TF0, bits	0*240	0*100
		TF1, bits	1*240	1*100
	TTI, ms		20	40
	Coding type		Convolution Coding	Convolution Coding
	Coding Rate		1/3	1/3
	CRC, bit		16	12
	Max number of bits/TTI after channel coding		792	360
	Uplink: Max number of bits/radio frame before rate matching		396	90
	RM attribute		256	256

<End of modified section>

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Tdoc ⌘R5-050850

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CHANGE REQUEST

⌘	**34.121**	**CR**	**532**	⌘**rev**	**-**	⌘	Current version:	**6.0.0**	⌘

*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:	⌘	Change of 34.121 test case 7.8.2		
Source:	⌘	3GPP TSG RAN WG5 (Testing)		
Work item code:	⌘	TEI	***Date:*** ⌘	28/04/2005
Category:	⌘	**F**	***Release:*** ⌘	Rel-6
		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 case as it is stated leaves room for procedural implementations that might not preserve the intent of the test case.
Summary of change:	⌘	1) Added clarification to the test purpose 2) Modified the initial conditions to make clear that power control should be on as soon as the DPCH is considered established.
Consequences if not approved:	⌘	The test might fail a good UE.

Clauses affected:	⌘	7.8.2			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This CR is applicable to R99 and later releases.			

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 listen in Annex I. With this exception, the outerloop 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 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. System simulator shall activate power control at the activation time of the Radio Bearer Setup message (At RRC connection setup only DCCH is established). The uplink DPCH physical channel is considered established at the activation time of the Radio Bearer Setup message.

~~1) Enter the UE into loopback test mode and start the loopback test.~~

2) RF parameters are set up at the activation time of the Radio Bearer Setup message according to table 7.8.2.3 for the test running.

~~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)~~4) 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)~~5) 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.

The reception of the "RB setup complete" and the "CLOSE UE TEST LOOP COMPLETE" messages is not necessary to pass this test

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.

3GPP RAN WG5 Meeting #27
Bath, England, 25-29 April, 2005

Tdoc ⌘R5-050571

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CHANGE REQUEST

⌘	34.121	CR	533	⌘rev	-	⌘	Current version:	6.0.0	⌘

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

Title:	⌘	Correction to TS34.121 TC 8.6.1.2		
Source:	⌘	3GPP TSG RAN WG5 (Testing)		
Work item code:	⌘	TEI	***Date:*** ⌘	15/04/2005
Category:	⌘	**F**	***Release:*** ⌘	Rel-6
		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:	⌘	Test procedure is not alligned with Table 8.6.1.2.2
Summary of change:	⌘	Allignment of the procedure to T5 in Table 8.6.1.2.2.
Consequences if not approved:	⌘	There will be uncertainty when to switch to T5.

Clauses affected:	⌘	8.6.1.2				
		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR applies to release 99				

8.6.1.2 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 Îor 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	4	
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

Parameter	Unit												
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 Îor 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 "start of T2" 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 "start of T5" 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~~ 5 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 the SS receive the MEASUREMENT REPORT message in step 20) or 10 seconds after 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.

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 3
-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 Monitored set cells 3 dB Not Present 0 0 dB Not Present 0 Not Present 0 ms 1 0 ms (Note 2) 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 3 dB

Information Element/Group name	Value/Remark
-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	Not Present 0 0 dB Not Present Not Present Not Present 0 ms Not Present Not Present Report cell within active set and/or monitored set cells on used frequency 3
-Intra-frequency event identity -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 1C Not present Not Present Not present 0 dB Not Present Not present 0 0 ms 1 0 ms (Note 2) Report cell within active set and/or monitored set cells on used frequency 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.	

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.2.5 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%. 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 8.6.1.2.4: 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
$\hat{I}_{or}/I_{oc}$ *(Note 1)*	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 8.6.1.2.5: Test requirements for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit	Cell 1						Cell 2						Cell3					
		T1	T2	T3	T4	T5	T6	T1	T2	T3	T4	T5	T6	T1	T2	T3	T4	T5	T6
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	Note 1						N/A						N/A	Note 1			N/A	
OCNS_Ec/Ior	dB	Note 2						-1.13						-1.13	Note 2			-1.13	
$\hat{I}_{or}/I_{oc}$ *(Note 3)*	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 3)*	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: 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 : 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.

3GPP RAN WG5 Meeting #27
Bath, England, 25-29 April, 2005

Tdoc ⌘R5-050573

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**534**	⌘**rev**	**-**	⌘ Current version: **6.0.0** ⌘

*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 TS34.121 TC 8.7.6.1		
Source:	⌘ 3GPP TSG RAN WG5 (Testing)		
Work item code:	⌘ TEI	***Date:*** ⌘	15/04/2005
Category:	⌘ **F**	***Release:*** ⌘	Rel-6
	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:	⌘ Measurement report Identity should be aligned with with Identity in Measurement Control
Summary of change:	⌘ Changing the Measurement Identity in Measurement Report
Consequences if not approved:	⌘ Measurement Report won't match the expected Measurement Report

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 to release 99 and later releases			

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 and VI	Band II, V	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 –10.9 dB = Ioc,* Note 1	*Io –10.9 dB = Ioc,* Note 1	*Io –10.9 dB = Ioc,* Note 1
Io	Band I, VI	dBm/3.84 MHz	-94	-72	-50
	Band II, V		-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	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
-Measurement Command	SETUP
- Additional measurements list	Not Present
-Measurement Reporting Mode	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	UE Internal measurement
-CHOICE Measurement type	
-UE Internal measurement quantity	FDD
-CHOICE mode	UE Rx-Tx time difference
-Measurement quantity	0
-Filter coefficient	
-UE Internal reporting quantity	
-UE Transmitted power	FALSE
-CHOICE mode	FDD
-UE Rx-Tx time difference	TRUE
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	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~~5
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
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 and VI	Band II and V	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, VI	dBm/ 3.84 MHz	-103.6	-82.9	-62.2
	Band II, V		-101.6		
	Band III		-100.6		
Io	Band I, VI	dBm/3.84 MHz	-92.7	-72	-51.3
	Band II, V		-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 – 2)	RX-TX_TIME_(X – 2)	RX-TX_TIME_(X – 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-RAN5 Meeting #27
Bath, England, 25. April – 29. April 2005

Tdoc ⌘R5-050652

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR 535**	⌘**rev**	**-**	⌘ Current version:	**6.0.0** ⌘

*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 test cases having power control ON.
Source:	⌘	3GPP TSG RAN WG5 (Testing)
Work item code:	⌘	TEI
Date:	⌘	15/04/2005
Category:	⌘	**F**
Release:	⌘	R6

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: ⌘ Currently there are many test cases in 34.121 clause 8 that have power control ON but still they have specified DPCH_Ec/Ior and OCNS_Ec/Ior values.

This contradiction is copied from 25.133 where this mistake was corrected in TS25.133 CR 666 approved in RP-24. This change has been implemented to 34.121 in cases 8.6.1.1, 8.6.1.2 and 8.6.1.3 but not in other cases changed in RAN4 CR. Also in cases 8.6.1.2 and 8.6.1.3 in table defining initial cell parameters this change has not been made. Power control is on already in the beginning of the test case. Thus the cell intial parameters have also been changed in this CR.

Test case 8.6.2.1 is currently applicable to Release 99 only. There is no justification for that. Core requirements are identical in all releases and this test should apply to all releases.

Summary of change: ⌘ This CR will replace fixed DPCH_Ec/Ior and OCNS_Ic/Ior values with notes stating that power control is on in this TC. This change has been applied to both cell initial parameters and cell test parameters.

The applicability of 8.6.2.1 was changed from release 99 only to release 99 and later.

Consequences if not approved: ⌘ Test cases will contain contradicting information. Core specification and test specification will be inconsistent.

Clauses affected: ⌘ 8.4.1, 8.6.1.1A, 8.6.1.2, 8.6.1.2A, 8.6.1.3, 8.6.1.3A, 8.6.1.4, 8.6.1.4A, 8.6.2.1

		Y	N		
Other specs	⌘		X	Other core specifications	⌘

affected:		X	Test specifications
		X	O&M Specifications
Other comments:	⌘	This CR is applicable to 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.

8.4.1.1.4 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~~Note 1	-infinity
OCNS_Ec/Ior	dB	~~-1.049~~Note 2	-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	
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 8.4.1.2 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~~Note 1	-Infinity	Not applicable	
OCNS_Ec/Ior	dB	~~-1.049~~Note 2	-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			
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} .					

8.4.1.1.4.2 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 2.1 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 to read the relevant system info blocks that needs to be received by the UE to camp on a cell is 1420ms (see note 2) and the maximum RRC procedure delay for reception system information block is 100ms, 1520ms is assumed in this test case. Therefore this gives a total of 2060ms (Minimum requirement + 240ms), 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 – 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

$T_{RRC\text{-}RE\text{-}ESTABLISH}$= 160ms+($N_{313}$-1)*10ms+$T_{313}$

$T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ\text{-}UNKNOWN}$=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~~Note 1	-Infinity	Not applicable	
OCNS_Ec/Ior	dB	~~-1.049~~Note 2	-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			
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} .					

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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~~Note 1			N/A		
OCNS_Ec/Ior	DB	~~-1.049~~Note 2			-0.941		
$\hat{I}_{or}/I_{oc}$	DB	0	6.97	0	-Infinity	5.97	-Infinity
$\hat{I}_{or}$ (Note 3~~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 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~~1~~: The nominal Îor 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.							

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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~~Note 1			N/A		
OCNS		~~-1.26~~Note 2			-1.13		
$\hat{I}_{or}/I_{oc}$ (Note 3~~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 3~~1~~)	dB	-12.3	-12.3	-12.3	-Infinity	-13.3	-Infinity
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~~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.

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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~~Note 1	N/A	N/A
OCNS_Ec/Ior	dB	~~-1.049~~Note 2	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	0	-Inf	-Inf
$\hat{I}_{or}$ (Note 3~~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 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~~1~~: The nominal Îor 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	4	
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 Îor 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.																			

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8.6.1.2.5 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%. 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 8.6.1.2.4: 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~~Note 1	N/A	N/A
OCNS_Ec/Ior	dB	~~-1.26~~Note 2	-1.13	-1.13
$\hat{I}_{or}/I_{oc}$ (Note 3~~1~~)	dB	0	-Inf	-Inf
$\hat{I}_{or}$)	dBm	-85	-Inf	-Inf
I_{oc}	dBm/ 3.84 MHz	-85		
CPICH_Ec/Io(Note 3~~1~~)	dB	-12.3	-Inf	-Inf
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~~1~~: These parameters are not directly settable, but are derived by calculation from the settable parameters.

Table 8.6.1.2.5: Test requirements for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit	Cell 1						Cell 2						Cell3					
		T1	T2	T3	T4	T5	T6	T1	T2	T3	T4	T5	T6	T1	T2	T3	T4	T5	T6
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	Note 1						N/A						N/A	Note 1			N/A	
OCNS_Ec/Ior	dB	Note 2						-1.13						-1.13	Note 2			-1.13	
$\hat{I}_{or}/I_{oc}$ (Note 3)	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 3)	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: 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 : 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.

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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.

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~~Note 1	N/A	N/A
OCNS_Ec/Ior	dB	~~-1.049~~Note 2	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	0	-Inf	-Inf
$\hat{I}_{or}$ (Note 3~~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 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~~1~~: The nominal Îor 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 8.6.1.2A.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~~Note 1				N/A				N/A			
OCNS_Ec/Ior	dB	~~-1.049~~Note 2				-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 3~~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 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 ~~1~~3: The nominal Îor 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.													

-------------------------UNCHANGED SECTIONS ARE SNIPPED HERE---------------------

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~~Note 1	N/A	N/A
OCNS_Ec/Ior	dB	~~-1.26~~Note 2	-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 3~~1~~)	dB	-12.3	-Inf	-Inf
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~~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~~Note 1				N/A				N/A			
OCNS_Ec/Ior	dB	~~-1.26~~Note 2				-1.13				-1.13			
$\hat{I}_{or}/I_{oc}$ (Note 3~~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 3~~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: 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 ~~1~~3: 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 SNIPPED HERE----------------------

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~~Note 1	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	~~5.870~~Note 2	-Inf	-Inf
$\hat{I}_{or}$ (Note 3~~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 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~~1~~: The nominal Îor 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 8.6.1.3.2 and 8.6.1.3.5. 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 five successive time periods, with a time duration of T1, T2, T3, T4 andT5 respectively. In the initial condition before the time T1 only Cell1 is active.

Table 8.6.1.3.2: 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		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	1	
T4	s	10	
T5	s	10	

Table 8.6.1.3.3: 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	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	Note 1					N/A	Note 1				N/A				
OCNS_Ec/Ior	dB	Note 2					-0.941	Note 2				-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	27.5
$\hat{I}_{or}$ (Note 3)	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 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 Îor 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.																

-------------------------UNCHANGED SECTIONS ARE SNIPPED HERE---------------------

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	-9.60	-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~~Note 1	N/A	N/A
OCNS_Ec/Ior	dB	~~-1.10~~Note 2	-1.04	-1.04
$\hat{I}_{or}/I_{oc}$ (Note 3~~1~~)	dB	5.90	-Inf	-Inf
$\hat{I}_{or}$	dBm	-79.10	-Inf	-Inf
I_{oc}	dBm/ 3.84 MHz	-85		
CPICH_Ec/Io (Note 3~~1~~)	dB	-10.49	-Inf	-Inf
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~~1~~: These parameters are not directly settable, but are derived by calculation from the settable parameters.

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	-960					-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	Note 1					N/A		Note 1			N/A				
OCNS_Ec/Ior	dB	Note 2					-1.04		Note 2			-1.04				
$\hat{I}_{or}/I_{oc}$ (Note 3)	dB	14.6	28.50		14.5	28.5	-Inf	27.50		14.0	21.50	8.1	21.50		14.0	27.5
$\hat{I}_{or}$	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	-10.60	-12.60		-14.1	-12.60	-Inf	-13.60		-14.60	-19.60	-17.1	-19.60		-14.60	-13.60
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..

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 SNIPPED HERE---------------------

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~~Note 1	N/A	N/A
OCNS_Ec/Ior	dB	~~-1.049~~Note 2	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	5.87	-Inf	-Inf
$\hat{I}_{or}$ (Note 3~~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 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~~1~~: The nominal Îor 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~~Note 1				N/A				N/A			
OCNS_Ec/Ior	dB	~~-1.049~~Note 2				-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 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	-Inf	-14.0	-15	-20	-17.5	-20	-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 I_{or}.
Note ~~1~~3: The nominal Îor 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.

--------------------------UNCHANGED SECTIONS ARE SNIPPED HERE----------------------

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~~Note 1	N/A	N/A
OCNS_Ec/Ior	dB	~~-1.17~~Note 2	-1.04	-1.04
$\hat{I}_{or}/I_{oc}$ (Note 3~~1~~)	dB	5.90	-Inf	-Inf
$\hat{I}_{or}$)	dBm	-79.10	-Inf	-Inf
I_{oc}	dBm/3.84 MHz	-85		
CPICH_Ec/Io (Note 3~~1~~)	dB	-10.59	-Inf	-Inf
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 1: These parameters are not directly settable, but are derived by calculation from the settable parameters..

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~~Note 1				N/A				N/A			
OCNS_Ec/Ior	dB	~~-1.17~~Note 2				-1.04				-1.04			
$\hat{I}_{or}/I_{oc}$ (Note 3~~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
$\hat{I}_{or}$	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~~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: 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 ~~1~~3: 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 SNIPPED HERE---------------------

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~~Note 1		N/A	
OCNS_Ec/Ior	dB	~~-1.049~~Note 2		-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				
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} .					

--------------------------UNCHANGED SECTIONS ARE SNIPPED HERE---------------------

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~~Note 1		N/A	
OCNS_Ec/Ior	dB	~~-1.049~~Note 2		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	7.29	3.29	3.29	7.29
$\hat{I}_{or}$ (Note 3~~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 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~~1~~: The nominal Îor 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.					

-------------------------UNCHANGED SECTIONS ARE SNIPPED HERE---------------------

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~~Note 1	~~-16.70~~Note 1	N/A	
OCNS_Ec/Ior	dB	~~-1.26~~Note 2	~~-1.14~~Note 2	-1.02	-1.13
$\hat{I}_{or}/I_{oc}$ (Note 3~~1~~)	dB	7.30	3.30	3.30	7.30
$\hat{I}_{or}$	dBm	-62.70	-66.70	-66.70	-62.70
I_{oc}	dBm/3.84 MHz	-70			
CPICH_Ec/Io (Note 3~~1~~)	dB	-11.30	-15.70	-15.70	-11.30
Propagation Condition		Case 5 as specified in table D.2.2.1			
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~~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 SNIPPED HERE---------------------.

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 all types of UTRA for the FDD UE for Release 99 and later releases.~~to 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 $X_{basic\ measurement\ FDD\ inter}$ 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 $T_{Measurement\_\ Inter.}$

$X_{basic\ measurement\ FDDinter} = 6$

$T_{Measurement\_Period\ Inter} = 480$ ms. The period used for calculating the measurement period $T_{measurement\_inter}$ for inter frequency CPICH measurements.

$T_{Inter:}$ This is the minimum time that is available for inter frequency measurements , during the period $T_{Measurement\_Period\ inter}$ 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.

$T_{basic\_identify\_FDD,inter} = 800$ 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.

$T_{basic\_measurement\_FDD\ inter} = 50$ 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~~Note 1	N/A	N/A
OCNS_Ec/Ior	dB	~~-1.049~~Note 2	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	0	-Inf	-Inf
$\hat{I}_{or}$ (Note 3~~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 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~~1~~: The nominal Îor 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~~Note 1		N/A		N/A	
OCNS_Ec/Ior	dB	~~-1.049~~Note 2		–0.941		–0.941	
$\hat{I}_{or}/I_{oc}$	dB	0	5.42	-Infinity	3.92	-1.8	-1.8
$\hat{I}_{or}$ (Note 3~~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 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~~1~~: The nominal Îor 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.

--------------------------UNCHANGED SECTIONS ARE SNIPPED HERE----------------------

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~~Note 1	N/A	N/A
OCNS_Ec/Ior	dB	~~-1.30~~Note 2	-1.16	-1.16
$\hat{I}_{or}/I_{oc}$ (Note 3~~1~~)	dB	0	-Inf	-Inf
$\hat{I}_{or}$	dBm	-70	-Inf	-Inf
I_{oc}	dBm/3.84 MHz	-70		
CPICH_Ec/Io (Note 3~~1~~)	dB	-12.21	-Inf	-Inf
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 ~~1~~3: 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~~Note 1		N/A		N/A	
OCNS_Ec/Ior	dB	~~-1.30~~Note 2		-1.16		-1.16	
$\hat{I}_{or}/I_{oc}$ (Note 3~~1~~)	dB	0	5.42	-Infinity	3.9	-1.8	-1.8
$\hat{I}_{or}$	dBm	-70	-64.6	-Infinity	-66.10	-71.8	-71.8
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/Io (Note 3~~1~~)	dB	-12.21	-12.20	-Infinity	-13.70	-13.20	-13.20
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~~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.

3GPP RAN WG5 Meeting #27
Bath, England, 25-29 April, 2005

Tdoc ⌘R5-050822

CR-Form-v7

CHANGE REQUEST

⌘ **34.121**	**CR 536**	⌘ **rev**	**-**	⌘ Current version:	**6.0.0** ⌘

*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 TS34.121 TC 8.6.1.3
Source:	⌘	3GPP TSG RAN WG5 (Testing)
Work item code:	⌘	TEI
Date:	⌘	26/04/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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:	⌘	Measurement report for Event 1B won't be transmited by the UE
Summary of change:	⌘	1) Adding Cell B to the Active Set. 2) Correcting reference table in the test initial conditions
Consequences if not approved:	⌘	A good UE may fail the test

Clauses affected:	⌘	8.6.1.3

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

Other comments:	⌘	This CR applies to release 99

8.6.1.3 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.~~8.6.1.3.1.

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	5.870	-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 Îor 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 8.6.1.3.2 and 8.6.1.3.5. 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 five successive time periods, with a time duration of T1, T2, T3, T4 andT5 respectively. In the initial condition before the time T1, defined as T0, only Cell1 is active.

Table 8.6.1.3.2: 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		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	1	
T4	s	10	
T5	s	10	

Table 8.6.1.3.3: 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	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	Note 1					N/A	Note 1				N/A				
OCNS_Ec/Ior	dB	Note 2					-0.941	Note 2				-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	27.5
$\hat{I}_{or}$ (Note 3)	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 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 Îor 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 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, the SS shall switch the power settings from 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.

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) During the time period T2, the SS shall, after the Event 1A triggered measurement is reported, send an Active Set Update command with activation time "start of T3" 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 least the RRC procedure delay prior to the beginning of T3.

9) After ~~10~~ 11 seconds from the beginning T2, the SS shall switch the power settings from T2 to T4.

~~9~~10) 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 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~~11) After 10 seconds from the beginning T4, the SS shall switch the power settings from T4 to T5.

~~11~~12) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1B. The measurement reporting delay from the beginning of T5 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~~13) After the SS receive the MEASUREMENT REPORT message in step ~~11~~12) or 10 seconds after the beginning of T5, the UE is switched off.

~~13~~14) Repeat steps 1-~~11~~ 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 - CHOICE reported cell - Maximum number of reported cells	Event 1A Monitored set cells 3 dB Not Present 0 0 dB Not Present 0 Not Present 0 ms Not present 0 ms (Note 2) 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 3 dB

Information Element/Group name	Value/Remark
-Cells forbidden to affect Reporting Range	Not Present
-W	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)
-Reporting cell status	
- 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.	

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	-9.60	-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	-1.10	-1.04	-1.04
$\hat{I}_{or}/I_{oc}$ *(Note 1)*	dB	5.90	-Inf	-Inf
$\hat{I}_{or)}$	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.				

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	-960					-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	Note 1					N/A	Note 1				N/A				
OCNS_Ec/Ior	dB	Note 2					-1.04	Note 2				-1.04				
$\hat{I}_{or}/I_{oc}$ (Note 3)	dB	14.6	28.50		14.5	28.5	-Inf	27.50		14.0	21.50	8.1	21.50		14.0	27.5
$\hat{I}_{or}$	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	-10.60	-12.60		-14.1	-12.60	-Inf	-13.60		-14.60	-19.60	-17.1	-19.60		-14.60	-13.60
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..

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-RAN5 Meeting #27
Bath, UK, 25-29 April, 2005

Tdoc ⌘R5-050823

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CHANGE REQUEST

⌘	**34.121**	**CR 537**	⌘**rev**	**-**	⌘ Current version:	**6.0.0** ⌘

*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:	⌘ Modification of call setup procedure for inter-RAT connected state RRM tests		
Source:	⌘ 3GPP TSG RAN WG5 (Testing)		
Work item code:	⌘ TEI	***Date:*** ⌘	26/4/2005
Category:	⌘ **F**	***Release:*** ⌘	Rel-6
	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, connected mode RRM tests use RB_TEST_MODE rather than setting up the core network procedures in the UE. The behaviour of RB_TEST_MODE when moving between WCDMA and GSM is not well defined so the behaviour of the UE in inter-RAT RRM tests in RRC connected mode may be unpredictable.
Summary of change: ⌘	Connection setup procedure of tests 8.3.4 and 8.3.5.3 updated to use new setup procedure which activates CC, MM, SM, GMM as appropriatte
Consequences if not approved: ⌘	UE may fail RRM test cases 8.3.4 and 8.3.5.3

Clauses affected: ⌘	8.3.4.4.2, 8.3.5.1.4.2				
	Y	**N**			
Other specs affected: ⌘		**X**	Other core specifications	⌘	34.108
	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.

8.3.4 Inter-system Handover from UTRAN FDD to GSM

8.3.4.1Definition 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.

8.3.4.2Minimum 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.

8.3.4.3Test purpose

To verify that the UE meets the minimum requirement.

8.3.4.4Method 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.

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 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	Based on TS 25.133 [2] 8.1.2.5.2.2 table 8.8, rounded up due to 0.5 seconds quantization, as specified in section 10.3.6.33 of TS 25.331 [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~~ 7.3.7 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 on 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 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.

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.

>>> Remainder of section 8.3.4 unchanged <<<

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

$$T_{\text{reselection, GSM}} = T_{\text{identify,GSM}} + T_{\text{measurement, GSM}} + 40 + T_{\text{BCCH}} + T_{\text{RA}} \text{ ms}$$

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.

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: void

Table 8.3.5.3.3: void

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 “FACH Measurement occasion info”		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~~ 7.3.8 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_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 “FACH Measurement occasion info”		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-RAN5 Meeting #27
Bath, UK, 25th - 29th April 2005

Tdoc ⌘ R5-050825

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	538	⌘ rev	-	⌘	Current version:	6.0.0	⌘

*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 8.6.2.2 Correct reporting of neighbours in fading propagation condition
Source:	⌘	3GPP TSG RAN WG5 (Testing)
Work item code:	⌘	TEI
Date:	⌘	31/03/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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 add 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 e) Updated references to point to the tables in this document f) Formatted PHYSICAL CHANNEL RECONFIGURATION message to comply to one row per IE convention g) Editorial corrections
Consequences if not approved:	⌘	The test implementation will not match the requirements of 25.133 and may fail a good UE.

Clauses affected:	⌘	8.6.2.2, 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 UE's supporting Rel-5 and later releases.			

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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 for Release 5 and later releases 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 C.3.1 and C.2.1~~TS 25.101 section A.3.1~~
Power Control		On	
Compressed mode		C.5.2~~A.22~~ set 2 (TGPL1=12)	As specified in C.5 ~~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 D ~~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
$\hat{I}_{or}$ (Note 3)	dBm	-70		-Infinity	-71.8
I_{oc}	dBm/3.84 MHz	-70		-70	
CPICH_Ec/Io	dB	-13		-Infinity	-14
Propagation Condition	Case 5 as specified in Annex D~~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} . Note 3: The nominal Îor 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.					

8.6.2.2.4.2 Procedure

1) The RF parameters are set up according to T1 in table 8.6.2.2.4.3.

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 in table 8.6.2.2.4.3 ~~described in the tables above~~. T1 starts.

7) After 2 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 according to the parameters defined in table 8.6.2.2.4.3.

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.

9) After the SS receive the MEASUREMENT REPORT message in step 8) or 40 seconds after the beginning of T2, the UE is switched off.

10) Repeat steps 1-9 until the confidence level is achieved 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 -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 for measurement -Inter-frequency measurement quantity (10.3.7.18) -CHOICE 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 8.6.2.2.4.3~~1.3~~ Not Present Not Present FALSE FDD Set to Primary scrambling code of Cell2 Set to Primary CPICH Tx Power of Cell2 described in Table 8.6.2.2.4.3~~1.3~~ FALSE Not Present Inter-frequency reporting criteria 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 -Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event	Not Present Not Present Inter-frequency measurement reporting criteria 1
-Inter-frequency event identity -Threshold used frequency -W used frequency -Hysteresis -Time to trigger	Event 2C Not present Not present 0 dB 0 ms

Information Element/Group name	Value/Remark
-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	 Report all active set cells + 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~~OTE~~ 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~~ ~~-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 – TTI/10msec))mod 256~~ ~~FDD measurement~~ ~~Infinity~~ ~~4~~ ~~7~~ ~~Not Present~~ ~~UNDEFINED~~ ~~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~~

~~-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~~

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	33 dBm
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)	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info (10.3.6.33)	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 – 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 (10.3.6.86)	Not Present
-SSDT information (10.3.6.77)	Not Present
-Default DPCH Offset Value (10.3.6.16)	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link (10.3.6.27)	
-CHOICE mode	FDD

Information Element	Value/Remark
-Primary CPICH info (10.3.6.60)	
-Primary scrambling code	100
-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	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 (10.3.6.70)	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.

Table 8.6.2.2.4.3: Test requirements 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	-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	Note 1		N/A	
OCNS_Ec/Ior	dB	Note 2		-1.16	
$\hat{I}_{or}/I_{oc}$ *(Note 3)*	dB	0		-Infinity	-1.8
$\hat{I}_{or}$	dBm	-70		-Infinity	-71.8
I_{oc}	dBm/3.84 MHz	-70			
CPICH_Ec/Io *(Note 3)*	dB	-12.21		-Infinity	-13.2
Propagation Condition	Case 5 as specified in Annex D				
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: 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 skipped here}

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>
</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		

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
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	
	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	

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].	
8.3.2.2 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	

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	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: $\hat{I}_{or}$ (1) ±0.7 dB $\hat{I}_{or}$ (3, 4) relative to $\hat{I}_{or}$ (1) ±0.3 dB Channel 1 during T2: $\hat{I}_{or}$ (1) ±0.7 dB $\hat{I}_{or}$ (3, 4) relative to $\hat{I}_{or}$ (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: $\hat{I}_{or}$ (2) ±0.7 dB $\hat{I}_{or}$ (5, 6) relative to $\hat{I}_{or}$ (2) ±0.3 dB Channel 2 during T2: $\hat{I}_{or}$ (2) ±0.7 dB $\hat{I}_{or}$ (5, 6) relative to $\hat{I}_{or}$ (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 $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB Rx-Tx Timing Accuracy ±0.5 chips	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.	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
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 Assumptions: Same as 8.6.1.2	
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	
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	

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 [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 (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		

<table>
<tr><th>Clause</th><th>Maximum Test System Uncertainty</th><th>Derivation of Test System Uncertainty</th></tr>
<tr><td rowspan="2">8.6.2.1 Correct reporting of neighbours in AWGN propagation condition</td><td>Channel 1 during 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 during 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</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.
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].</td></tr>
</table>

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	Channel 1 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} (1) ±1.0 dB Channel 2 during T1 and T2: I_{oc} (2) ±1.0 dB Channel 2 during T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (2) ±0.7 dB ~~TBD~~	
	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].	
8.6.3 TDD measurements		
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD	
8.6.4 GSM Measurement		

Clause	Maximum Test System Uncertainty		Derivation of Test System Uncertainty
8.6.4.1 Correct reporting of GSM neighbours in AWGN propagation condition	$\hat{I}_{or}/I_{oc}$ $I_{oc}/RXLEV$ I_{oc} RXLEV $\frac{CPICH\_E_c}{I_{or}}$	±0.3 dB ±0.3 dB ±1.0 dB ±1.0 dB ±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	$\hat{I}_{or}/I_{oc}$ I_{oc} $\frac{CPICH\_E_c}{I_{or}}$	±0.3 dB ±1.0 dB ±0.1 dB	Same as 8.2.2.1
8.7.1.2 Inter frequency measurement accuracy	$\hat{I}_{or}/I_{oc}$ I_{oc} I_{oc1}/I_{oc2} $\frac{CPICH\_E_c}{I_{or}}$	±0.3 dB ±1.0 dB ±0.3 dB ±0.1 dB	Same as 8.2.2.2
8.7.2 CPICH Ec/Io			
8.7.2.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ I_{oc} $\frac{CPICH\_E_c}{I_{or}}$	±0.3 dB ±1.0 dB ±0.1 dB	Same as 8.2.2.1
8.7.2.2 Inter frequency measurement accuracy	$\hat{I}_{or}/I_{oc}$ I_{oc} I_{oc1}/I_{oc2} $\frac{CPICH\_E_c}{I_{or}}$	±0.3 dB ±1.0 dB ±0.3 dB ±0.1 dB	Same as 8.2.2.2
8.7.3 UTRA Carrier RSSI	$\hat{I}_{or}/I_{oc}$ I_{oc} I_{oc1}/I_{oc2}	±0.3 dB ±1.0 dB ±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

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.7.3A GSM Carrier RSSI	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB RXLEV ±1.0 dB RXLEV1/RXLEV2 ±1.4 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. The relative accuracy of RXLEV1 to RXLEV2 is specified to be 1.4 dB (RMS of individual uncertainties) when BCCHs are on the same or on different RF channel within the same frequency band The relative accuracy of RXLEV1 to RXLEV2 is specified to be 1.4 dB (RMS of individual uncertainties) when BCCHs are on different frequency band
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

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
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	

{Unchanged sections are skipped here}

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: {–147.5 … +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	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 lor(3, 4) -1.60 dB for loc(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 lor(5, 6) -1.60 dB for loc(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	0.1 dB for CPICH_Ec/Ior 0.1 dB for DPCH_Ec/Ior 1 dB for Îor1 1.3 dB for Îor2 0.5 chips for Rx-Tx timing accuracy
8.6 UE Measurements Procedures	

Clause	Test Tolerance
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 ratios
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
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
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 (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	
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	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	During T1 and T2: +0.80 dB for all Cell 1 Ec/Ior ratios +0.80 dB for all Cell 2 Ec/Ior ratios ~~TBD~~
8.6.3 TDD measurements	
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: + 1 dB for RXLEV During T3: -1 dB for RXLEV
8.7 Measurements Performance Requirements	
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

Clause	Test Tolerance
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	TT for test parameters GSM cell levels: Step 1: -1 dB Step 2: -1 dB Step 3: -1 dB Step 4:+1 dB Relative accuracy requirements: a, b, c and d values in minimum requirements are increased by 2 dB i.e., For x1 ≥ s+14, x2< -48 dBm: a=4, b=4, c=6, d=6 For s+14 > x1 ≥ s+1 a=5, b=4, c=7, d=6 For s+1 > x1 a=6, b=4, c=8, d=6 Absolute accuracy requirements: original minimum requirements are increased by ±1 dB
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

{Unchanged sections are skipped here}

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

Test	Test Parameters in TS 25.133 [2]	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 [2]	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 [2]	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].		
	During T1 and T2/T3/T4/T5/T6: 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 … 148} chips	During T1 and T2/T3/T4/T5/T6: +0.70 dB +0.70 dB +0.70 dB +0.70 dB 0.5 chips	During T1 and T2/T3/T4/T5/T6: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT {-148+TT … 148-TT} chips
	During T1: Already covered above	During T1: Covered above	During T1: Already covered above
	During T2/T3/T4/T5/T6: 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/T4/T5/T6: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T2/T3/T4/T5/T6: 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 [2]	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	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 –80 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 [2]	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].		
	<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 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	<u>During T1 and T2:</u> +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)	<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 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
8.3.5.2 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].		
	<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 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	<u>Channel 1 during T1 and T2:</u> +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	<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 Ec/Ior ratio + TT Ec/Ior ratio + TT
	<u>Channel 1 during T1:</u> Ior(1) = -71.85 dBm Ior(3, 4) = -76.85 dBm Ioc(1) = -70.00 dBm	<u>Channel 1 during T1:</u> +0.05 dB for Ior(1) +0.05 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 [2]	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 [2]	Test Tolerance (TT)	Test Requirement in TS 34.121
	<u>During T2:</u> $\frac{CPICH\_E_c}{I_{or}}$ = -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 [2]	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.
8.4.2.1, 8.4.2.2 & 8.4.2.3 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
8.4.2.4 Random Access correct behaviuor when reaching maximum transmit power	Maximum preamble power=0dBm±9dB	1.0 dB	Formula: Upper limit + TT Lower limit – TT

Test	Test Parameters in TS 25.133 [2]	Test Tolerance (TT)	Test Requirement in TS 34.121
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			
8.5.1 UE Transmit Timing	DPCH_Ec/Ior = -13.5 dB CPICH_Ec/Ior = -10 dB Îor1=-96 dB Îor2=-99 dB	0.1 dB for CPICH_Ec/Ior 0.1 dB for DPCH_Ec/Ior 0.1 dB for DPCH_Ec/Ior 1 dB for Îor1 1.3 dB for Îor2 0.5 chips for Rx-Tx timing accuracy	Since the test is performed close to sensitivity level any TT applied to the nominal setting shall fulfil: Îor1 shall not go below –96 dBm Îor2 shall not go below –99 dBm Îor1/Îor2 shall not go above 3 dB DPCH_Ec/Ior shall not go below –13.5 dB CPICH_Ec/Ior shall not go below –10 dB Formulas for test parameters DPCH_Ec/Ior +TT CPICH_Ec/Ior + TT Îor1 + TT Îor2 + TT Timing accuracy ±2.0 chip Formulas for test requirements: Upper limit +TT Lower limit –TT
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].		
	<u>During T1 to T4:</u> Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	<u>During T1 to T4:</u> +0.70 dB +0.70 dB +0.70 dB +0.70 dB	<u>During T1 to T4:</u> Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	<u>During T1/T4 only :</u> Already covered above	<u>During T1/T4 only:</u> Covered above	<u>During T1/T4 only:</u> Already covered above
	<u>During T2/T3 only:</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 only:</u> +0.70 dB +0.70 dB +0.70 dB +0.70 dB	<u>During T2/T3 only:</u> 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	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 [2]	Test Tolerance (TT)	Test Requirement in TS 34.121
conditions (Rel-4 and later)	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)	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	During T0 to T4: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T0 to T4: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.3 Event triggered reporting of two detectable 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].TBD		
	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	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 [2]	Test Tolerance (TT)	Test Requirement in TS 34.121
neighbours in AWGN propagation condition (Rel-4 and later)	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 (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	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 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	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 [2]	Test Tolerance (TT)	Test Requirement in TS 34.121
condition	During T1 and T2: Cell 1 and Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1 and T2: +0.80 dB +0.80 dB +0.80 dB +0.80 dB	During T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
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 –80 dBm (Threshold for GSM). => TT=+1 dB for RXLEV During T3: measured GSM Carrier RSSI ± uncertainty of RXLEV setting shall be below –80 dBm (Threshold for GSM). => TT=-1 dB for RXLEV
8.7 Measurements Performance Requirements			
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 for….._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 ….._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 [2]	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 ….._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 [2]	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 ….._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 [2]	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= $Io_{max} – Io_{nominal}$ $Io_{nominal}$ = -51.15 dBm $Io_{max} = Ioc_{max} + Ior_{max}$ = (-53.5 dBm + 1dB) + (-52.5 dBm – 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 –1 dB) + (-54.5 dBm – 1.45 dB – 0.3 dB) = - 52.3 dBm => Min TT = -1.15 dB Test 2: Max TT= $Io_{max} – Io_{nominal}$ $Io_{nominal}$ = - 67.9 dBm $Io_{max} = Ioc_{max} + Ior_{max}$ = (-69.27 dBm + 1dB) + (-68.27 dBm – 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 – 1 dB) + (-70.27 dBm – 4.4 dB – 0.3 dB) = -69.0 dBm => Min TT = -1.1 dB Test 3 (Band I): Max TT= $Io_{max} – Io_{nominal}$ $Io_{nominal}$ = -93 dBm $Io_{max} = Ioc_{max} + Ior_{max}$ + No = (-93.46 dBm + 1dB) + (-92.46 dBm – 9.24 dB +0.3 dB) + -99 dBm = -91.2 => Max TT = 1.8 dB Min TT = Io_{min} - Io

Test	Test Parameters in TS 25.133 [2]	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.3A GSM Carrier RSSI	WCDMA cell parameters: See table 8.7.3A.2 GSM cell parameters: See table 8.7.3A.3	TT for test parameters GSM cell levels: Step 1: -1 dB Step 2: -1 dB Step 3: -1 dB Step 4:+1 dB TT for test requirements: Relative accuracy requirements: a, b, c and d values in minimum requirements are increased by 2 dB i.e., For x1 ≥ s+14, x2< -48 dBm: a=4, b=4, c=6, d=6 For s+14 > x1 ≥ s+1 a=5, b=4, c=7, d=6 For s+1 > x1 a=6, b=4, c=8, d=6 Absolute accuracy requirements: original minimum requirements are increased by ±1 dB	WCDMA: Test parameter settings are unchanged since level settings in either direction are not critical with respect to the outcome of the test GSM: Test parameter settings are changed in steps 1,2,3 and 4 as follows: BCCH levels are increased by test tolerance so that during Step 1, level ≤ 38 dBm, Step 2, level ≤ 48 dBm, Step 3, level ≤ 70 dBm, Step 4, level ≥ -110 dBm. Hence during steps 1,2,3 and 4: New levels=Original levels + TT For other steps 5 to 12 GSM test parameter settings are unchanged since level settings in either direction are not critical with respect to the outcome of the test TT on top of UE measurement accuracy: Relative accuracy: Test system uncertainty ±1.4 dB. Rounded to ±2 dB due to granularity of GSM Carrier RSSI report mapping of 1 dB. Absolute accuracy: Test system uncertainty ±1.0 dB. No need to increase due to granularity of GSM Carrier RSSI report mapping of 1 dB.
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 – 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 –92 dBm (Band II) or below –91 dBm (Band III) Îor/Ioc + TT TT on top of UE measurements accuracy: SFN-CFN observed time difference: 1.0 chips + TT

Test	Test Parameters in TS 25.133 [2]	Test Tolerance (TT)	Test Requirement in TS 34.121
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 –92 dBm (Band II) or below –91 dBm (Band III) Îor/Ioc + TT TT on top of UE measurements accuracy: SFN-SFN observed time difference: 1.0 chips + TT
8.7.6 UE Rx-Tx time difference	*Io –10.9 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 –TT
8.7.7 Observed time difference to GSM cell	TBD		
8.7.8 P-CCPCH RSCP	TBD		

{Unchanged sections are skipped here}

F.6.2.8 Test conditions for RRM delay tests, Combining of TPC commands test 1, Demodulation of Paging channel and Detection of acquisition indicator tests.

Table F.6.2.8: Test conditions for a single RRM delay tests, Combining of TPC commands test 1, Demodulation of Paging channel and Detection of Acquisition indicator tests.

Type of test	Test requirement Delay (s)	Test requirement (ER= 1-success ratio)	Testlimit(ER) = Test requirement (ER)x TL TL	Target number of bad delays	Prob that good unit will fail = Prob that bad unit will pass [%]	Bad unit factor M
8.2.2 Cell recelection	8	0.1	1.236	154	5	1.5
8.2.3.1 UTRAN to GSM cell reselection, scenario 1	27.9	0.1	1.236	154	5	1.5
8.2.3.2 UTRAN to GSM cell reselection, scenario 2	9.6	0.1	1.236	154	5	1.5
8.2.4 FDD/TDD Cell reselection	8	0.1	1.236	154	5	1.5
8.3.1 FDD/FDD Soft handover	NA					
8.3.2 FDD FDD Hard Handover 8.3.2.1 Handover to intra frequency cell	110 ms	0.1	1.236	154	5	1.5
8.3.2.2 Handover to interfrequency cell	140ms	0.1	1.236	154	5	1.5
7.7.2 Combining of TPC commands Test 1 Note: The theory of statistical testing of RRM delay performance in clause F.6.2 is applied for test case 7.7.2 Combining of TPC commands Test 1. The success ratio for delay is replaced by the success ratio for power control sequence.	Not applicable	0.01	1.236	154	5	1.5

7.11 Demodulation of Paging Channel (PCH) Note: The theory of statistical testing of RRM delay performance in clause F.6.2 is applied for test case 7.11 Demodulation of Paging Channel. The success ratio for delay is replaced by the success ratio for procedure step 4.	Not applicable	0.01	1.236	154	5	1.5
7.12 Detection of Acquisition indicatior (AI). Note: The theory of statistical testing of RRM delay performance in clause F.6.2 is applied for test case 7.12. The success ratio for delay is replaced by the success ratio for procedure steps 5, 6 and 12.	Not applicable	0.01	1.236	154	5	1.5
8.4.3. Transport format combination selection in UE.	140ms (see 8.4.3.1.4.2 step 7~~5~~)	0.1	1.236	154	5	1.5
8.6.2.2 correct reporting of neighbours in fading propagation condition.	36.4 s (see procedure 8.6.2.2.4.2 step 8~~6~~.)	0.1	1.236	154	5	1.5

3GPP TSG-RAN5 Meeting #27
Bath, UK, 25th – 29th April 2005

Tdoc ⌘R5-050829

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	539	⌘rev	-	⌘	Current version:	6.0.0	⌘

*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: GSM band corrections		
Source:	⌘ 3GPP TSG RAN WG5 (Testing)		
Work item code:	⌘ TEI	***Date:*** ⌘	26/04/2005
Category:	⌘ **F**	***Release:*** ⌘	Rel-6
	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:	⌘	At T1#26 an action point (AP26.4) was created to complete the GSM related test cases regarding bands other than the 900 MHz band. Message contents can be hard to read or misplaced if several IEs are in the same cell of a message table. Test case 8.7.3A is missing SIB11 exceptions and the measurementcontrol only configures 1 GSM cell.
Summary of change:	⌘	- Added reference to TS 51.010-1 clause 26.6.5.1 for GSM frequencies under test - Added text so that test case 8.7.3A can also be executed for terminals not requiring compressed mode. - Added SIB11 exceptions in section 8.7.3A - Reformatted message tables in section 8.7.3A so that each IE is in a seperate row. - Corrected Measurement Control Message in 8.7.3A to configure 6 GSM cells. - Editorial changes.
Consequences if not approved:	⌘	GSM related test cases for bands other than 900 MHz band are not specified.

Clauses affected:	⌘	8.2.3, 8.3.4, 8.3.5.3, 8.6.4, 8.7.3A, Annex G.2.4, Annex I			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Applicable 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.

<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	
FDD_Qmin	dB	-14	
Qsearch_I	-	always	

Specific 2 quarter Message Contents

All messages indicated shall use the same content as described in the default message content in TS 05.08 [20] clause 9 for R99 and in TS45.008 [30] clause 9 for Rel-4 and later releases, with the above exceptions.

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.~~,~~

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 a location registration procedure from the UE. If the UE 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.

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) Repeat step 5) to 8) 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		BCCH ARFCN of cell A as defined in the initial conditions in clause 26.6.5.1 of TS 51.010-1 [25] for the GSM band under test.~~ARFCN 1~~	
RXLEV	dBm	-90.3	-74.7
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	
FDD_Qmin	dB	-14	
Qsearch_I	-	always	

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.

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	
Qsearch_I	-	always	

Specific 2 quarter Message Contents

All messages indicated shall use the same content as described in the default message content in TS 05.08 [20] clause 9 for R99 and in TS45.008 [30] clause 9 for Rel-4 and later releases, with the above exceptions.

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.
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 a location registration procedure from the UE. If the UE 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.
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) Repeat step 5) to 8) 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		BCCH ARFCN of cell A as defined in the initial conditions in clause 26.6.5.1 of TS 51.010-1 [25] for the GSM band under test.~~ARFCN 1~~	
RXLEV	dBm	-80.3	-79.7
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	
Qsearch_I	-	always	

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.

<Unchanged sections are skipped>

8.3.4 Inter-system Handover from UTRAN FDD to GSM

8.3.4.1Definition 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.

8.3.4.2Minimum 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.

8.3.4.3Test purpose

To verify that the UE meets the minimum requirement.

8.3.4.4Method 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.

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 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 the ARFCN ~~1~~ of cell 2	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	Based on TS 25.133 [2] 8.1.2.5.2.2 table 8.8, rounded up due to 0.5 seconds quantization, as specified in section 10.3.6.33 of TS 25.331 [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 on 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 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.
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 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)	Not Present
-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 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
- 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	 GSM Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band" Single GSM message GSM HANDOVER COMMAND formatted and coded according to GSM specifications as BIT STRING (1..512). The first/ l*eftmost/ most significant* bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Information Element (GSM)	Value/remark	Version
Protocol Discriminator	RR Management.	
Skip Indicator	0000	
Message Type	00101011	
Cell Description		
- Network Colour Code	1	
- Base station Colour Code	5	
- BCCH Carrier Number	BCCH ARFCN of cell A as defined in the initial conditions in clause 26.6.5.1 of TS 51.010-1 [25] for the GSM band under test.~~1~~	
Channel Description 2		
- Channel Type and TDMA offset	TCH/F + ACCHs	
- Timeslot Number	Chosen arbitrarily by the test house, but not Zero.	
- Training Sequence Code	Chosen arbitrarily by the test house.	
- Hopping	Single RF channel.	
- ARFCN	BCCH ARFCN of cell A as defined in the initial conditions in clause 26.6.5.1 of TS 51.010-1 [25] for the GSM band under test.~~1~~	
Handover Reference		
- Handover Reference Value	Chosen arbitrarily by the test house.	
Power Command and ACCESS Type		
- ATC	0	REL-5
- EPC_mode	0	R99 and REL-4 only
- FPC	0	
- EPC_FPC	0	REL-5
- Power level	Chosen arbitrarily by the test house.	
Synchronization Indication	Not present.	
Channel Mode	speech full rate or half rate version 1	
All other information elements	Not present.	

MEASUREMENT REPORT message for Inter-RAT test cases

This message is common for all inter RAT-frequency test cases 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		BCCH ARFCN of cell A as defined in the initial conditions in clause 26.6.5.1 of TS 51.010-1 [25] for the GSM band under test.~~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.

<Unchanged sections are skipped>

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.

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 the ARFCN ~~1~~ of cell 2	NOTE: See Annex I for cell information.
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: void

Table 8.3.5.3.3: void

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_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 “FACH Measurement occasion info”		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	

8.3.5.3.4.3 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.

6) 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.

9) 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 “FACH Measurement occasion info”		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		BCCH ARFCN of cell A as defined in the initial conditions in clause 26.6.5.1 of TS 51.010-1 [25] for the GSM band under test.~~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.

<Unchanged sections are skipped>

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 the ARFCN ~~1~~ of cell 2	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 6.32s. 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 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.
9) After the SS receive the MEASUREMENT REPORT message in step 8) or 5 seconds after 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)	Not Present
-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 two 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 the ARFCN ~~1~~ of cell 2	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 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 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 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

9) After the SS receive the MEASUREMENT REPORT message in step 8) or 5 seconds after 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 -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-RAT measurement (10.3.7.27) -Inter-RAT measurement objects list (10.3.7.23) -Inter-RAT measurement quantity (10.3.7.29) -Measurement quantity for UTRAN quality estimate (10.3.7.38) -Filter coefficient -CHOICE mode -Measurement quantity -CHOICE system -Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity (10.3.7.32) -Reporting cell status (10.3.7.61) -CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT event identity (10.3.7.24) -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) -CHOICE reported cell -Maximum number of reported cells -Inter-RAT event identity (10.3.7.24) -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) -CHOICE reported cell -Maximum number of reported cells	Inter-RAT measurement Not Present 0 FDD CPICH Ec/N0 GSM GSM Carrier RSSI 0 Not Required Not Present Not Present Inter-RAT measurement reporting criteria 2 Event 3B Not Present Not Present -80 dBm 0 dB 0 ms Report cells within active set or within virtual active set or of the other RAT 2 Event 3C Not Present Not Present -80 dBm 0 dB 0 ms Report cells within active set or within virtual active set or of the other RAT 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 – 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		BCCH ARFCN of cell A as defined in the initial conditions in clause 26.6.5.1 of TS 51.010-1 [25] for the GSM band under test.~~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		BCCH ARFCN of cell A as defined in the initial conditions in clause 26.6.5.1 of TS 51.010-1 [25] for the GSM band under test.~~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.

<Unchanged sections are skipped>

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 [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 rate of correct measurements observed during repeated tests shall be at least 90%.

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, 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 "GSM Carrier RSSI Measurement" 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 – 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.

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 8.7.3A.1.

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
Îor/Ioc	dB	-1
Ioc	dBm/ 3.84 MHz	-70
Propagation condition	-	AWGN

Table 8.7.3A.3: Signal levels at receiver input in dBm

Step	BCCH1	BCCH2	BCCH3	BCCH4	BCCH5	BCCH6
1	-38.5	-38.5	NA	NA	NA	NA
2	-48.5	-48.5	NA	NA	NA	NA
3	-70.5	-70.5	NA	NA	NA	NA
4	-109.5	-109.5	NA	NA	NA	NA
5	-57.5	NA	-54.5	NA	NA	NA
6	-64.5	NA	-59.5	NA	NA	NA
7	-71.5	NA	NA	-64.5	NA	NA
8	-78.5	NA	NA	-69.5	NA	NA
9	-85.5	NA	NA	NA	-74.5	NA
10	-92.5	NA	NA	NA	-79.5	NA
11	-99.5	NA	NA	NA	NA	-84.5
12	-106.5	NA	NA	NA	NA	-89.5

Table 8.7.3A.4: ARFCN numbers for GSM cells

GSM band	BCCH1	BCCH2	BCCH3	BCCH4	BCCH5	BCCH6
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 1800	700	885	585	660	790	835
PCS 1900	700	805	585	660	790	550
450/900	124	276	293	269	288	1
480/900	124	323	340	316	335	1
450/1800	885	276	293	269	288	512
480/1800	885	323	340	316	335	512
900/1800	885	62	124	40	100	512
450/900/1800	124	276	885	293	1	512
480/900/1800	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

8.7.3A.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 cell 1 are set up according to table to table 8.7.3A.1 and 8.7.3A.2.

2) The RF parameters for two GSM cells are set up according to the step 1 in table 8.7.3A.5. The fading profile for the BCCHs will be set to static, see 51.010-1 [25]. The ARFCN numbers for GSM cells are set up according to table 8.7.3.A.4.

3) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

4) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

5) SS shall transmit MEASUREMENT CONTROL message.

6) UE shall transmit periodically MEASUREMENT REPORT messages.

7) SS shall check GSM carrier RSSI value of the two GSM cells in MEASUREMENT REPORT messages. The GSM CARRIER RSSI values reported in the first measurement report are discarded. The SS records [1000] GSM CARRIER RSSI values reported for the two BCCHs in each step.

8) The RF parameters for two GSM cells are set up according to the next test step in table 8.7.3A.5

9) Repeat procedure steps 7 and 8 until MEASUREMENT REPORT messages from the test step 12 of Table 8.7.3A.5 have been recorded.

Specific Message Contents

All messages indicated above shall use the same content as described in the system information in clause 6.1.0b of 34.108 [3] and in default message content in clause 9 of 34.108 [3], with the following exceptions:

Contents of System Information Block type 11 (FDD)

Information Element	**Value/Remark**
- Inter-frequency measurement system information	Not present
- Inter-RAT measurement system information	
- Inter-RAT cell info list	
- Inter-RAT cell id	9+n (n=0 to 5)
- 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)	BSIC(1+n) for n=0, 1 according to 34.108 Table 6.1.10; for n=2 to 5 chosen arbitrarily by the test house such that it does not collide with BSICs of other Inter-RAT cell ids
- Band indicator	According to PICS/PIXIT
- BCCH ARFCN	BCCH(1+n) according to Table Table 8.7.3A.4

PHYSICAL CHANNEL RECONFIGURATION 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.~~
~~-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 – TTI/10msec))mod 256~~
~~-----Transmission gap pattern sequence configuration parameters~~	
~~------TGMP~~	~~GSM carrier RSSI measurement~~
~~------TGPRC~~	~~Infinity~~
~~------TGSN~~	~~4~~
~~------TGL1~~	~~7~~
~~------TGL2~~	~~Not Present~~
~~------TGD~~	~~0~~
~~------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~~

Information Element	Value/Remark
Message Type (10.2.22)	
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 (10.3.6.36)	 Not Present
Uplink radio resources -Maximum allowed UL TX power -CHOICE *channel requirement*	 33 dBm Not Present

Downlink radio resources
-CHOICE *mode*
 -Downlink PDSCH information
-Downlink information common for all radio links (10.3.6.24)
 -Downlink DPCH info common for all RL (10.3.6.18)
 -CHOICE mode
  -DPCH compressed mode info (10.3.6.33)
   - 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 (10.3.6.86)
  -SSDT information (10.3.6.77)
 -Default DPCH Offset Value (10.3.6.16)
-Downlink information per radio link list
 -Downlink information for each radio link (10.3.6.27)
	
	FDD
	Not Present
	
	Not Present
	FDD
	
	1
	1
	activate
	(Current CFN + (256 – TTI/10msec))mod 256
	
	GSM carrier RSSI measurement
	Infinity
	4
	7
	Not Present
	undefined
	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
	None
	Not Present
	Not Present
	1

Information Element	Value/Remark
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
-Primary scrambling code	100
-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	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 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 CONTROL message for Inter-RAT ~~frequency~~ measurement (step 5):

~~**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-RAT measurement~~
~~-Inter-RAT measurement~~	
~~--Inter-RAT measurement objects list~~	
~~---CHOICE *Inter-RAT cell removal*~~	~~Not Present~~
~~---New inter-RAT cells~~	
~~----Inter-RAT cell id~~	~~9~~
~~----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)~~	~~Reference to TS 34.108 table 6.1.10 for Cell 9~~
~~------Band indicator~~	~~According to PICS/PIXIT~~
~~------BCCH ARFCN~~	~~1~~
~~---Cell for measurement~~	~~Not Present~~
~~--Inter-RAT measurement quantity~~	
~~---Measurement quantity for UTRAN quality estimate~~	~~Not Present~~
~~---CHOICE system~~	~~GSM~~
~~---GSM~~	
~~----Measurement quantity~~	~~GSM Carrier RSSI~~
~~----Filter coefficient~~	~~0~~
~~----BSIC verification required~~	~~not required~~
~~--Inter-RAT reporting quantity~~	
~~---UTRAN estimated quality~~	~~FALSE~~
~~---CHOICE system~~	~~GSM~~
~~---GSM~~	
~~----Observed time difference to GSM cell Reporting indicator~~	~~FALSE~~
~~----GSM carrier RSSI reporting indicator~~	~~TRUE~~
~~--Reporting cell status~~	
~~---CHOICE reported cell~~	~~Report cells within active set or within virtual active set or of the other RAT~~
~~----Maximum number of reported cells~~	~~6~~
~~--CHOICE report criteria~~	~~Periodical reporting criteria~~
~~---Amount of reporting~~	~~Infinity~~
~~---Reporting interval~~	~~500 ms~~
~~Physical channel information elements~~	
~~-DPCH compressed mode status info~~	~~Not Present~~

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	Periodical reporting
-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)	
-CHOICE *Inter-RAT cell removal*	Remove no inter-RAT cells
-New inter-RAT cells	6
-Inter-RAT cell id	9+n (n=0 to 5)
-CHOICE Radio Access Technology	GSM
-Cell individual offset	0
-Cell selection and re-selection info (10.3.2.4)	Not Present
-BSIC (10.3.8.2)	
-Base transceiver Station Identity Code (BSIC)	BSIC(1+n) for n=0, 1 according to 34.108 Table 6.1.10; for n=2 to 5 chosen arbitrarily by the test house such that it does not collide with BSICs of other Inter-RAT cell ids
-Band indicator	According to PICS/PIXIT
-BCCH ARFCN	BCCH(1+n) according to Table Table 8.7.3A.4
-Cell for measurement	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
-Measurement quantity for UTRAN quality estimate (10.3.7.38)	Not Present
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	not required
-Inter-RAT reporting quantity (10.3.7.32)	
-UTRAN estimated quality	FALSE
-CHOICE system	GSM
-Observed time difference to GSM cell Reporting indicator	FALSE
-GSM carrier RSSI reporting indicator	TRUE
-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	6
-CHOICE report criteria	Periodical reporting criteria
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

MEASUREMENT REPORT message for inter – 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

Table 8.7.3A.5: Signal levels at receiver input in dBm, test parameters for test requirements

Step	BCCH1	BCCH2	BCCH3	BCCH4	BCCH5	BCCH6
1	-39.5	-39.5	NA	NA	NA	NA
2	-49.5	-49.5	NA	NA	NA	NA
3	-71.5	-71.5	NA	NA	NA	NA
4	-108.5	-108.5	NA	NA	NA	NA
5	-57.5	NA	-54.5	NA	NA	NA
6	-64.5	NA	-59.5	NA	NA	NA
7	-71.5	NA	NA	-64.5	NA	NA
8	-78.5	NA	NA	-69.5	NA	NA
9	-85.5	NA	NA	NA	-74.5	NA
10	-92.5	NA	NA	NA	-79.5	NA
11	-99.5	NA	NA	NA	NA	-84.5
12	-106.5	NA	NA	NA	NA	-89.5

For the UE to pass the absolute requirements of GSM Carrier RSSI measurement, at least 90% of the reported GSM Carrier RSSI measurements shall fulfill the following test requirements for each step and each test environment with a confidence level of 95%.

Table 8.7.3A.6: GSM Carrier RSSI absolute accuracy requirements for the reported values

Step	Normal		TL/VL & TH/VH	
	Lowest reported value for BCCH1	Highest reported value for BCCH1	Lowest reported value for BCCH1	Highest reported value for BCCH1
1	RXLEV = 61	RXLEV = 63	RXLEV = 61	RXLEV = 63
2	RXLEV = 54	RXLEV = 63	RXLEV = 54	RXLEV = 63
3	RXLEV = 34	RXLEV = 44	RXLEV = 32	RXLEV = 46
4	RXLEV = 00	RXLEV = 09	RXLEV = 00	RXLEV = 09
5	RXLEV = 46	RXLEV = 60	RXLEV = 46	RXLEV = 60
6	RXLEV = 39	RXLEV = 53	RXLEV = 39	RXLEV = 53
7	RXLEV = 34	RXLEV = 44	RXLEV = 32	RXLEV = 46
8	RXLEV = 27	RXLEV = 37	RXLEV = 25	RXLEV = 39
9	RXLEV = 20	RXLEV = 30	RXLEV = 18	RXLEV = 32
10	RXLEV = 13	RXLEV = 23	RXLEV = 11	RXLEV = 25
11	RXLEV = 06	RXLEV = 16	RXLEV = 04	RXLEV = 18
12	RXLEV = 00	RXLEV = 09	RXLEV = 00	RXLEV = 11
Note: It is not mandatory for the UE to report BCCH1 in step 12				

For the UE to pass the relative requirements of GSM Carrier RSSI measurement, at least 90% of the reported GSM Carrier RSSI measurements shall fulfill the following test requirements for each step and each test environment with a confidence level of 95%.

Table 8.7.3A.7: GSM Carrier RSSI Relative accuracy requirements for the reported values, measurements on different ARFCN within the same frequency band

Step	Normal & TL/VL & TH/VH	
	Lowest reported value for BCCH2	Highest reported value for BCCH2
1	No requirements	No requirements
2	RXLEV = x-4	RXLEV = x+4
3	RXLEV = x-4	RXLEV = x+4
4	RXLEV = x-6	RXLEV = x+4
	Lowest reported value for BCCH3	Highest reported value for BCCH3
5	RXLEV = x-1	RXLEV = x+7
6	RXLEV = x+1	RXLEV = x+9
	Lowest reported value for BCCH4	Highest reported value for BCCH4
7	RXLEV = x+3	RXLEV = x+11
8	RXLEV = x+5	RXLEV = x+13
	Lowest reported value for BCCH5	Highest reported value for BCCH5
9	RXLEV = x+7	RXLEV = x+15
10	RXLEV = x+8	RXLEV = x+17
	Lowest reported value for BCCH6	Highest reported value for BCCH6
11	RXLEV = x+10	RXLEV = x+19
12	RXLEV = x+11	RXLEV = x+21
x is the reported value RXLEV for BCCH1		
Note: It is not mandatory for the UE to report BCCH1 in step 12		

For the UE to pass the relative requirements of GSM Carrier RSSI measurement, at least 90% of the reported GSM Carrier RSSI measurements shall fulfill the following test requirements for each step and each test environment with a confidence level of 95%.

Table 8.7.3A.8: GSM Carrier RSSI Relative accuracy requirements for the reported values, measurements on different frequency bands

Step	Normal		TL/VL & TH/VH	
	Lowest reported value for BCCH2	Highest reported value for BCCH2	Lowest reported value for BCCH2	Highest reported value for BCCH2
1	No requirements	No requirements	No requirements	No requirements
2	RXLEV = x-6	RXLEV = x+6	RXLEV = x-8	RXLEV = x+8
3	RXLEV = x-6	RXLEV = x+6	RXLEV = x-8	RXLEV = x+8
4	RXLEV = x-8	RXLEV = x+6	RXLEV = x-10	RXLEV = x+8
	Lowest reported value for BCCH3	Highest reported value for BCCH3	Lowest reported value for BCCH3	Highest reported value for BCCH3
5	RXLEV = x-3	RXLEV = x+9	RXLEV = x-5	RXLEV = x+11
6	RXLEV = x-1	RXLEV = x+11	RXLEV = x-3	RXLEV = x+13
	Lowest reported value for BCCH4	Highest reported value for BCCH4	Lowest reported value for BCCH4	Highest reported value for BCCH4
7	RXLEV = x+1	RXLEV = x+13	RXLEV = x-1	RXLEV = x+15
8	RXLEV = x+3	RXLEV = x+15	RXLEV = x+1	RXLEV = x+17
	Lowest reported value for BCCH5	Highest reported value for BCCH5	Lowest reported value for BCCH5	Highest reported value for BCCH5
9	RXLEV = x+5	RXLEV = x+17	RXLEV = x+3	RXLEX = x+19
10	RXLEV = x+6	RXLEV = x+19	RXLEV = x+4	RXLEV = x+21
	Lowest reported value for BCCH6	Highest reported value for BCCH6	Lowest reported value for BCCH6	Highest reported value for BCCH6
11	RXLEV = x+8	RXLEV = x+21	RXLEV = x+6	RXLEV = x+23
12	RXLEV = x+9	RXLEV = x+23	RXLEV = x+7	RXLEV = x+25
x is the reported value RXLEV for BCCH1				
Note: It is not mandatory for the UE to report BCCH1 in step 12				

For the UE to pass the relative requirements of GSM Carrier RSSI measurement, at least 90% of the reported GSM Carrier RSSI measurements shall fulfill the following test requirements for each step and each test environment with a confidence level of 95%.

Table 8.7.3A.9: GSM Carrier RSSI Relative accuracy requirements for the reported values, measurements at single frequency (BCCH1)

Step n	Step m	Normal & TL/VL & TH/VH	
		Lowest reported value for BCCH1 at step n	Highest reported value for BCCH1 at step n
5	6	RXLEV = x+3	RXLEV = x+11
5	7	RXLEV = x+10	RXLEV = x+18
6	7	RXLEV = x+3	RXLEV = x+11
6	8	RXLEV = x+10	RXLEV = x+18
7	8	RXLEV = x+3	RXLEV = x+11
7	9	RXLEV = x+10	RXLEV = x+18
8	9	RXLEV = x+3	RXLEV = x+11
8	10	RXLEV = x+9	RXLEV = x+18
9	10	RXLEV = x+2	RXLEV = x+11
9	11	RXLEV = x+9	RXLEV = x+18
10	11	RXLEV = x+2	RXLEV = x+11
10	12	RXLEV = x+8	RXLEV = x+18
11	12	RXLEV = x+1	RXLEV = x+11
x is the reported value of BCCH1 at step m			
Note: It is not mandatory for the UE to report BCCH1 in step 12			

<Unchanged sections are skipped>

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]. The test frequencies depend on the GSM bands supported by the terminal (according to PICS/PIXIT).

~~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.~~

Annex H (normative): UE Capabilities (FDD)

For UE capabilities regarding FDD refer to TS 25.306.

H.1 Void

H.2 Void

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. 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.

<Unchanged sections are skipped>

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	24
- Intra-frequency cell id	12+n (n=0 to 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	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)	Chosen arbitrarily by the test house such that it does not collide with BSICs of other Inter-RAT cell ids.~~Note:Any values depend on UEs.~~
- Band indicator	According to PICS/PIXIT
- BCCH ARFCN	Chosen arbitrarily by the test house such that it does not collide with BCCH ARFCNs of other Inter-RAT cell ids.~~Note:Any values that depend on UEs.~~

<End of modifications>

3GPP TSG-RAN5 Meeting #27
Bath, UK, 25th – 29th April 2005

Tdoc ⌘R5-050837

CR-Form-v7.1

CHANGE REQUEST

⌘ **34.121**	**CR** 540	⌘ **rev**	**-**	⌘	Current version:	**6.0.0** ⌘

*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:	⌘ Statistical approach for 8.7.3A GSM Carrier RSSI		
Source:	⌘ 3GPP TSG RAN WG5 (Testing)		
Work item code:	⌘	***Date:***	⌘ 25/04/2005
Category:	⌘ **F**	***Release:***	⌘ Rel-6
	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:	⌘ Test time reduction for good UEs Statistical significance need to be known
Summary of change:	⌘ Re-use of Annex F.6.2 for this test
Consequences if not approved:	⌘ Test duration is currently 5 hours. The statistical significance is unknown.

Clauses affected:	⌘ 8.7.3A, Annex F.6.2				
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘ This is a revision of R5-050738				

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 [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 rate of correct measurements observed during repeated tests shall be at least 90%.

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, 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 "GSM Carrier RSSI Measurement" 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 – 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
Îor/Ioc	dB	-1
Ioc	dBm/ 3.84 MHz	-70
Propagation condition	-	AWGN

Table 8.7.3A.3: Signal levels at receiver input in dBm

Step	BCCH1	BCCH2	BCCH3	BCCH4	BCCH5	BCCH6
1	-38.5	-38.5	NA	NA	NA	NA
2	-48.5	-48.5	NA	NA	NA	NA
3	-70.5	-70.5	NA	NA	NA	NA
4	-109.5	-109.5	NA	NA	NA	NA
5	-57.5	NA	-54.5	NA	NA	NA
6	-64.5	NA	-59.5	NA	NA	NA
7	-71.5	NA	NA	-64.5	NA	NA
8	-78.5	NA	NA	-69.5	NA	NA
9	-85.5	NA	NA	NA	-74.5	NA
10	-92.5	NA	NA	NA	-79.5	NA
11	-99.5	NA	NA	NA	NA	-84.5
12	-106.5	NA	NA	NA	NA	-89.5

Table 8.7.3A.4: ARFCN numbers for GSM cells

GSM band	BCCH1	BCCH2	BCCH3	BCCH4	BCCH5	BCCH6
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 1800	700	885	585	660	790	835
PCS 1900	700	805	585	660	790	550
450/900	124	276	293	269	288	1
480/900	124	323	340	316	335	1
450/1800	885	276	293	269	288	512
480/1800	885	323	340	316	335	512
900/1800	885	62	124	40	100	512
450/900/1800	124	276	885	293	1	512
480/900/1800	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

8.7.3A.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 cell 1 are set up according to table to table 8.7.3A.1 and 8.7.3A.2.

2) The RF parameters for two GSM cells are set up according to the step 1 in table 8.7.3A.5. The fading profile for the BCCHs will be set to static, see 51.010-1 [25]. The ARFCN numbers for GSM cells are set up according to table 8.7.3.A.4.

3) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

4) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

5) SS shall transmit MEASUREMENT CONTROL message.

6) UE shall transmit periodically MEASUREMENT REPORT messages.

7) SS shall check GSM carrier RSSI value of the two GSM cells in MEASUREMENT REPORT messages. The GSM CARRIER RSSI values reported in the first measurement report are discarded. The SS records ~~[1000]~~repeatedly GSM CARRIER RSSI values reported for the two BCCHs in each step. One report produces more than one mapped level or level difference. If the UE reports a value compliant with the applicable Table 8.7.3A.6 or 8.7.3A.7 or 8.7.3A.8 or 8.7.3A.9 then a success is recorded. Otherwise a failure is recorded. The successes and failures are assigned to the individual mapped levels or level differences. Repeat steps 7 according to Annex F.6.2 table 6.2.8. The repetition shall be continued, until the last mapped level or level difference experiences an early decision according to Annex F.6.2.

8) The RF parameters for two GSM cells are set up according to the next test step in table 8.7.3A.5

9) Repeat procedure steps 7 and 8 until MEASUREMENT REPORT messages from the test step 12 of Table 8.7.3A.5 have been recorded.

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 3):

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 – 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

-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 5):

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 – 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

Table 8.7.3A.5: Signal levels at receiver input in dBm, test parameters for test requirements

Step	BCCH1	BCCH2	BCCH3	BCCH4	BCCH5	BCCH6
1	-39.5	-39.5	NA	NA	NA	NA
2	-49.5	-49.5	NA	NA	NA	NA
3	-71.5	-71.5	NA	NA	NA	NA
4	-108.5	-108.5	NA	NA	NA	NA
5	-57.5	NA	-54.5	NA	NA	NA
6	-64.5	NA	-59.5	NA	NA	NA
7	-71.5	NA	NA	-64.5	NA	NA
8	-78.5	NA	NA	-69.5	NA	NA
9	-85.5	NA	NA	NA	-74.5	NA
10	-92.5	NA	NA	NA	-79.5	NA
11	-99.5	NA	NA	NA	NA	-84.5
12	-106.5	NA	NA	NA	NA	-89.5

For the UE preliminarily to pass the absolute requirements of GSM Carrier RSSI measurement, at least 90% of the reported GSM Carrier RSSI measurements shall fulfill the following test requirements for each step and each test environment with a confidence level of 95%.

Table 8.7.3A.6: GSM Carrier RSSI absolute accuracy requirements for the reported values

Step	Normal		TL/VL & TH/VH	
	Lowest reported value for BCCH1	Highest reported value for BCCH1	Lowest reported value for BCCH1	Highest reported value for BCCH1
1	RXLEV = 61	RXLEV = 63	RXLEV = 61	RXLEV = 63
2	RXLEV = 54	RXLEV = 63	RXLEV = 54	RXLEV = 63
3	RXLEV = 34	RXLEV = 44	RXLEV = 32	RXLEV = 46
4	RXLEV = 00	RXLEV = 09	RXLEV = 00	RXLEV = 09
5	RXLEV = 46	RXLEV = 60	RXLEV = 46	RXLEV = 60
6	RXLEV = 39	RXLEV = 53	RXLEV = 39	RXLEV = 53
7	RXLEV = 34	RXLEV = 44	RXLEV = 32	RXLEV = 46
8	RXLEV = 27	RXLEV = 37	RXLEV = 25	RXLEV = 39
9	RXLEV = 20	RXLEV = 30	RXLEV = 18	RXLEV = 32
10	RXLEV = 13	RXLEV = 23	RXLEV = 11	RXLEV = 25
11	RXLEV = 06	RXLEV = 16	RXLEV = 04	RXLEV = 18
12	RXLEV = 00	RXLEV = 09	RXLEV = 00	RXLEV = 11
Note:	It is not mandatory for the UE to report BCCH1 in step 12			

For the UE preliminarily to pass the relative requirements of GSM Carrier RSSI measurement, at least 90% of the reported GSM Carrier RSSI measurements shall fulfill the following test requirements for each step and each test environment with a confidence level of 95%.

Table 8.7.3A.7: GSM Carrier RSSI Relative accuracy requirements for the reported values, measurements on different ARFCN within the same frequency band

Step	Normal & TL/VL & TH/VH	
	Lowest reported value for BCCH2	Highest reported value for BCCH2
1	No requirements	No requirements
2	RXLEV = x-4	RXLEV = x+4
3	RXLEV = x-4	RXLEV = x+4
4	RXLEV = x-6	RXLEV = x+4
	Lowest reported value for BCCH3	Highest reported value for BCCH3
5	RXLEV = x-1	RXLEV = x+7
6	RXLEV = x+1	RXLEV = x+9
	Lowest reported value for BCCH4	Highest reported value for BCCH4
7	RXLEV = x+3	RXLEV = x+11
8	RXLEV = x+5	RXLEV = x+13
	Lowest reported value for BCCH5	Highest reported value for BCCH5
9	RXLEV = x+7	RXLEV = x+15
10	RXLEV = x+8	RXLEV = x+17
	Lowest reported value for BCCH6	Highest reported value for BCCH6
11	RXLEV = x+10	RXLEV = x+19
12	RXLEV = x+11	RXLEV = x+21
x is the reported value RXLEV for BCCH1		
Note: It is not mandatory for the UE to report BCCH1 in step 12		

For the UE preliminarily to pass the relative requirements of GSM Carrier RSSI measurement, at least 90% of the reported GSM Carrier RSSI measurements shall fulfill the following test requirements for each step and each test environment with a confidence level of 95%.

Table 8.7.3A.8: GSM Carrier RSSI Relative accuracy requirements for the reported values, measurements on different frequency bands

Step	Normal		TL/VL & TH/VH	
	Lowest reported value for BCCH2	Highest reported value for BCCH2	Lowest reported value for BCCH2	Highest reported value for BCCH2
1	No requirements	No requirements	No requirements	No requirements
2	RXLEV = x-6	RXLEV = x+6	RXLEV = x-8	RXLEV = x+8
3	RXLEV = x-6	RXLEV = x+6	RXLEV = x-8	RXLEV = x+8
4	RXLEV = x-8	RXLEV = x+6	RXLEV = x-10	RXLEV = x+8
	Lowest reported value for BCCH3	Highest reported value for BCCH3	Lowest reported value for BCCH3	Highest reported value for BCCH3
5	RXLEV = x-3	RXLEV = x+9	RXLEV = x-5	RXLEV = x+11
6	RXLEV = x-1	RXLEV = x+11	RXLEV = x-3	RXLEV = x+13
	Lowest reported value for BCCH4	Highest reported value for BCCH4	Lowest reported value for BCCH4	Highest reported value for BCCH4
7	RXLEV = x+1	RXLEV = x+13	RXLEV = x-1	RXLEV = x+15
8	RXLEV = x+3	RXLEV = x+15	RXLEV = x+1	RXLEV = x+17
	Lowest reported value for BCCH5	Highest reported value for BCCH5	Lowest reported value for BCCH5	Highest reported value for BCCH5
9	RXLEV = x+5	RXLEV = x+17	RXLEV = x+3	RXLEX = x+19
10	RXLEV = x+6	RXLEV = x+19	RXLEV = x+4	RXLEV = x+21
	Lowest reported value for BCCH6	Highest reported value for BCCH6	Lowest reported value for BCCH6	Highest reported value for BCCH6
11	RXLEV = x+8	RXLEV = x+21	RXLEV = x+6	RXLEV = x+23
12	RXLEV = x+9	RXLEV = x+23	RXLEV = x+7	RXLEV = x+25
x is the reported value RXLEV for BCCH1				
Note: It is not mandatory for the UE to report BCCH1 in step 12				

For the UE preliminarily to pass the relative requirements of GSM Carrier RSSI measurement, at least 90% of the reported GSM Carrier RSSI measurements shall fulfill the following test requirements for each step and each test environment with a confidence level of 95%.

Table 8.7.3A.9: GSM Carrier RSSI Relative accuracy requirements for the reported values, measurements at single frequency (BCCH1)

Step n	Step m	Normal & TL/VL & TH/VH	
		Lowest reported value for BCCH1 at step n	Highest reported value for BCCH1 at step n
5	6	RXLEV = x+3	RXLEV = x+11
5	7	RXLEV = x+10	RXLEV = x+18
6	7	RXLEV = x+3	RXLEV = x+11
6	8	RXLEV = x+10	RXLEV = x+18
7	8	RXLEV = x+3	RXLEV = x+11
7	9	RXLEV = x+10	RXLEV = x+18
8	9	RXLEV = x+3	RXLEV = x+11
8	10	RXLEV = x+9	RXLEV = x+18
9	10	RXLEV = x+2	RXLEV = x+11
9	11	RXLEV = x+9	RXLEV = x+18
10	11	RXLEV = x+2	RXLEV = x+11
10	12	RXLEV = x+8	RXLEV = x+18
11	12	RXLEV = x+1	RXLEV = x+11
x is the reported value of BCCH1 at step m			
Note: It is not mandatory for the UE to report BCCH1 in step 12			

For the UE finally to pass, all preliminary decisions must be decided pass.

FFS: 3 test-environments * 12 reporting periods * 3 levels per report = 108 individual pass fail decisions
An individual pass/fail decision has a wrong decision risk of 5%. All individual decisions must pass, to pass the entire test. As a consequence a UE with marginal performance for each individual level will pass each individual test with a probability of 95%, but will fail the entire test with high probability. It is for futher study whether to

- Accept this situation.
- Decrease the wrong decision risk for each individual test at the expense of additional test time, to increase the pass probability for the entire test.
- Introduce allowance to fail a limited number of individual tests.

F.6.2 Statistical testing of RRM delay performance

F.6.2.1 Test Method

Each test is performed in the following manner:

a) Setup the required test conditions.

b) Measure the delay repeated times. Start each repetition after sufficient time, such that each delay test is independent from the previous one. The delay-times, measured, are simplified to:

a good delay, if the measured delay is ≤ limit.

a bad delay, if the measured delay is > limit

c) Record the number of delays (ns), tested, and the number of bad delays (ne)

d) Stop the test at an early pass or an early fail event.

e) Once the test is stopped, decide according to the pass fail decision rules (subclause F.6.2.7)

F.6.2.2 Bad Delay Ratio (ER)

The Bad Delay Ratio (ER) is defined as the ratio of bad delays (ne) to all delays (ns).
(1-ER is the success ratio)

F.6.2.3 Test Criteria

The test shall fulfil the following requirements:

a) good pass fail decision

1) to keep reasonably low the probability (risk) of passing a bad unit for each individual test;

2) to have high probability of passing a good unit for each individual test;

b) good balance between test-time and statistical significance

3) to perform measurements with a high degree of statistical significance;

4) to keep the test time as low as possible.

F.6.2.4 Calculation assumptions

F.6.2.4.1 Statistical independence

It is arranged by test conditions, that bad delays are independent statistical events.

F.6.2.4.2 Applied formulas

The specified ER is 10% in most of the cases. This stipulates to use the binomial distribution to describe the RRM delay statistics. With the binomial distribution optimal results can be achieved. However the inverse cumulative operation for the binomial distribution is not supported by standard mathematical tools. The use of the Poisson or Chi Square Distribution requires ER→0. Using one of this distributions instead of the binomial distribution gives sub-optimal results in the conservative sense: a pass fail decision is done later than optimal and with a lower wrong decision risk than predefined.

The formulas, applied to describe the RRM delay statistics test, are based on the following experiment:

(1) After having observed a certain number of bad delays (**ne**) the number of all delays (**ns**) are counted to calculate ER. Provisions are made (note 1) such that the complementary experiment is valid as well:

(2) After a certain number of delays (**ns**) the number of bad delays (**ne**), occurred, are counted to calculate ER.

Experiment (1) stipulates to use the Chi Square Distribution with degree of freedom ne: 2*dchisq(2*NE,2*ne).

Experiment (2) stipulates to use the Poisson Distribution: dpois(ne,NE)

(NE: mean value of the distribution)

To determine the early stop conditions, the following inverse cumulative operation is applied:

0.5 * qchisq(D,2*ne) for experiment (1) and (2)

D: wrong decision risk per test step

Note: Other inverse cumulative operations are available, however only this is suited for experiment (1) and (2).

F.6.2.4.3 Approximation of the distribution

The test procedure is as follows:

During a running measurement for a UE ns (Number of Delays) and ne (Number of bad delays) are accumulated and from this the preliminary ER is calculated. Then new samples up to the next bad delay are taken. The entire past and the new samples are basis for the next preliminary ER. Depending on the result at every step, the UE can pass, can fail or must continue the test.

As early pass- and early fail-UEs leave the statistical totality under consideration, the experimental conditions are changed every step resulting in a distribution that is truncated more and more towards the end of the entire test. Such a distribution can not any more be handled analytically. The unchanged distribution is used as an approximation to calculate the early fail and early pass bounds.

F.6.2.5 Definition of good pass fail decision.

This is defined by the probability of wrong decision F at the end of the test. The probability of a correct decision is 1- F.

The probability (risk) to fail a good DUT shall be ≤ F according to the following definition: A DUT is failed, accepting a probability of ≤ F that the DUT is still better than the specified bad delay ratio (Test requirement).

The probability (risk) to pass a bad DUT shall be ≤ F according to the following definition: A DUT is passed, accepting a probability of ≤ F that the DUT is still worse than M times the specified bad delay ratio. (M>=1 is the bad DUT factor).

This definitions lead to an early pass and an early fail limit:

Early fail: er≥ er**lim**$_{fail}$

$$er\lim_{fail}(D,ne) = \frac{2*ne}{qchisq(D,2*ne)} \qquad (1)$$

For ne ≥ 5

Early pass: er ≤ er**lim**bad$_{pass}$

$$er\lim bad_{pass}(D,ne) = \frac{2*ne*M}{qchisq(1-D,2*ne)} \qquad (2)$$

For ne ≥1

With

er (normalized ER): ER according to F.6.2.2 divided by specified ER

D: wrong decision probability for a test step . This is a numerically evaluated fraction of F, the wrong decision probability at the end of the test. see table F.6.2.6.1

ne: Number of bad delays

M: bad DUT factor see table F.6.2.6.1

qchisq: inverse cumulative chi squared distribution

F.6.2.6 Good balance between test-time and statistical significance

Two independent test parameters are introduced into the test and shown in Table F.6.2.6.1. These are the obvious basis of test time and statistical significance. From them four dependent test parameters are derived.

Table F.6.2.6 independent and dependent test parameters

Independent test parameters			Dependent test parameters		
Test Parameter	Value	Reference	Test parameter	Value	Reference
Bad DUT factor M	1.5	Table F.6.1.8	Early pass/fail condition	Curves	Subclause F.6.2.5 Figure 6.2.9
Final probability of wrong pass/fail decision F	5%	Table F.6.2.8	Target number of bad delays	154	Table 6.2.8
			Probability of wrong pass/fail decision per test step D	0.6 %	
			Test limit factor TL	1.236]	Table 6.2.8

F.6.2.7 Pass fail decision rules

The required confidence level 1-F (= correct decision probability) shall be achieved. This is fulfilled at an early pass or early fail event. Sum up the number of all delays (ns) and the number of bad delays from the beginning of the test and calculate:

ER_1 (including the artificial error at the beginning of the test (Note 1))and

ER_0 (excluding the artificial error at the beginning of the test (Note 1)).

If ER_0 is on or above the early fail limit, fail the DUT.

If ER_1 is on or below the early pass limit, pass the DUT.

Otherwise continue the test

F.6.2.8 Test conditions for RRM delay tests, Combining of TPC commands test 1, Demodulation of Paging channel and Detection of acquisition indicator tests.

Table F.6.2.8: Test conditions for a single RRM delay tests, Combining of TPC commands test 1, Demodulation of Paging channel and Detection of Acquisition indicator tests.

Type of test	Test requirement Delay (s)	Test requirement (ER= 1-success ratio)	Testlimit(ER) = Test requirement (ER)x TL TL	Target number of bad delays	Prob that good unit will fail = Prob that bad unit will pass [%]	Bad unit factor M
8.2.2 Cell recelection	8	0.1	1.236	154	5	1.5
8.2.3.1 UTRAN to GSM cell reselection, scenario 1	27.9	0.1	1.236	154	5	1.5
8.2.3.2 UTRAN to GSM cell reselection, scenario 2	9.6	0.1	1.236	154	5	1.5
8.2.4 FDD/TDD Cell reselection	8	0.1	1.236	154	5	1.5
8.3.1 FDD/FDD Soft handover	NA					
8.3.2 FDD FDD Hard Handover 8.3.2.1 Handover to intra frequency cell	110 ms	0.1	1.236	154	5	1.5
8.3.2.2 Handover to interfrequency cell	140ms	0.1	1.236	154	5	1.5
7.7.2 Combining of TPC commands Test 1 Note: The theory of statistical testing of RRM delay performance in clause F.6.2 is applied for test case 7.7.2 Combining of TPC commands Test 1. The success ratio for delay is replaced by the success ratio for power control sequence.	Not applicable	0.01	1.236	154	5	1.5

7.11 Demodulation of Paging Channel (PCH) Note: The theory of statistical testing of RRM delay performance in clause F.6.2 is applied for test case 7.11 Demodulation of Paging Channel. The success ratio for delay is replaced by the success ratio for procedure step 4.	Not applicable	0.01	1.236	154	5	1.5
7.12 Detection of Acquisition indicatior (AI). Note: The theory of statistical testing of RRM delay performance in clause F.6.2 is applied for test case 7.12. The success ratio for delay is replaced by the success ratio for procedure steps 5, 6 and 12.	Not applicable	0.01	1.236	154	5	1.5
8.4.3. Transport format combination selection in UE.	140ms (see 8.4.3.1.4.2 step 5)	0.1	1.236	154	5	1.5
8.6.2.2 correct reporting of neighbours in fading propagation condition.	36.4 s (see procedure 8.6.2.2.4.2 step 6.)	0.1	1.236	154	5	1.5
8.7.3AGSM Carrier SSI Note: The theory of statistical testing of RRM delay performance in clause F.6.2 is applied for test case 8.7.3A. The success ratio for delay is replaced by the success ratio in procedure step 7	Not applicable	0.01	1.236	154	5	1.5

F.6.2.9 Practical Use (informative)

See figure F.6.2.9:

The early fail limit represents formula (1) in F.6.2.5. The range of validity is ne≥ 5 to ne = 154

The early pass limit represents the formula (2) in F.6.2.5. The range of validity is ne=1 to ne =154. See note 1. The intersection co-ordinates of both curves are: target number of bad delays ne = 154 and test limit TL = 1.236 .

A typical delay test, calculated form the number of samples and errors (F.6.2.2) using experimental method (1) or (2) (see F.6.2.4.2. calculation assumptions) runs along the yellow trajectory. With an good delay the trajectory goes down vertically. With a bad delay it jumps up right. The tester checks if the ER test intersects the early fail or early pass limits.

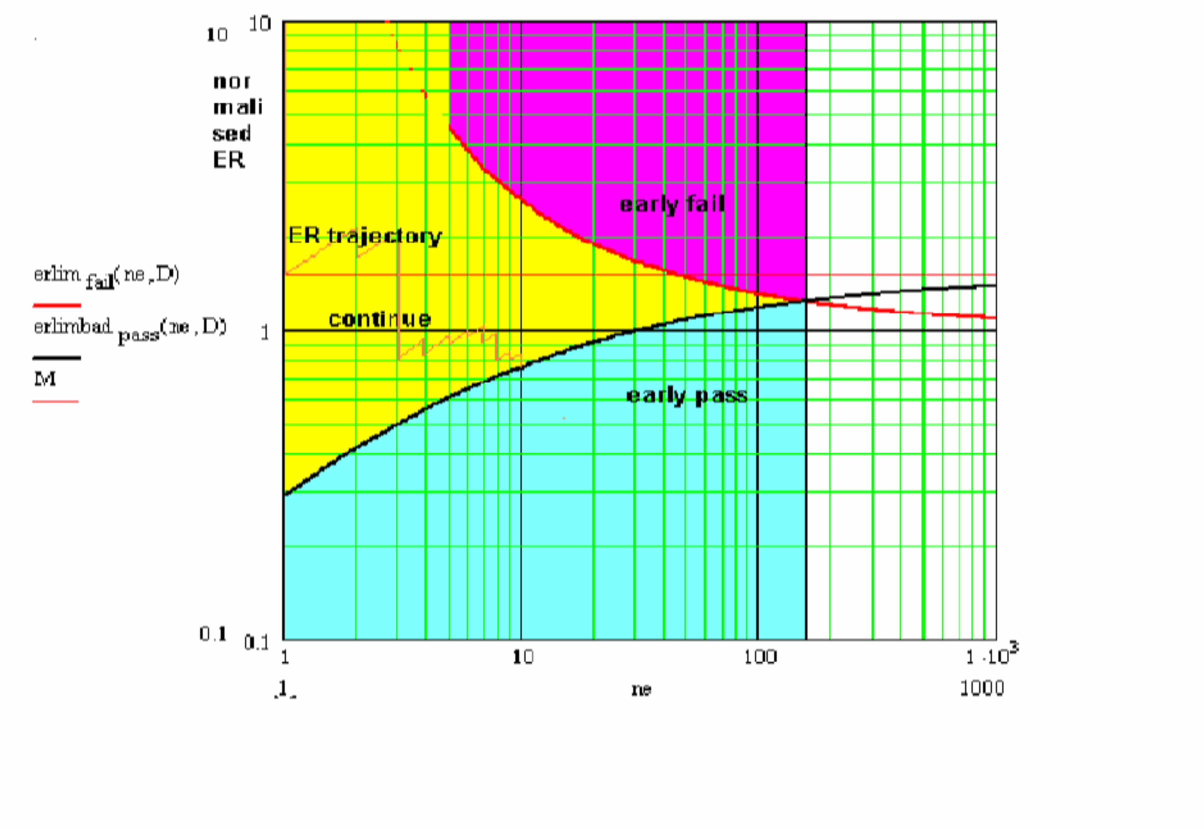

Figure F.6.2.9

Note 1: At the beginning of the test, an artificial bad delay is introduced. This ensures that an ideal DUT meets the valid range of the early pass limit. In addition this ensures that the complementary experiment (F.6.2.4.2. bullet point (2)) is applicable as well. For the check against the early fail limit the artificial bad delay sample, introduced at the beginning of the test , is disregarded.

Due to the nature of the test, namely discrete bad delay events, the early fail condition shall not be valid, when fractional bad delays <1 are used to calculate the early fail limit: Any early fail decision is postponed until number of errors ne ≥ 5.

3GPP TSG-RAN WG5 Meeting #27
Bath, UK, April 25th - 29th, 2005

Tdoc ⌘R5-050821

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	541	⌘rev	-	⌘	Current version:	6.0.0	⌘

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 Rel-6; Update of the MEASUREMENT REPORT message to RRC release 5
Source:	⌘	3GPP TSG RAN WG5 (Testing)
Work item code:	⌘	TEI6 ***Date:*** ⌘ 26/04/2005
Category:	⌘	**F** ***Release:*** ⌘ Rel-6

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:	⌘	In release 5, a possibility was added for the UE to report values on the CPICH RSCP which is measured by the UE as lower than –115 dBm. In test case 8.7.1.1.1 (Intra-frequency absolute accuracy) it may happen that a UE reports such a low value due to the accuracy requirements.
Summary of change:	⌘	In test case 8.7.1.1.1, the test requirements are updated to allow a UE to report values down to CPICH_RSCP_-5. In Annex I, the IE "Delta CPICH RSCP" is added and it is allowed for a release 5 or later UE to use this IE.
Consequences if not approved:	⌘	Good UE may fail the test.

Clauses affected:	⌘	8.7.1.1.1.5, Annex I

Other specs affected: ⌘

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

Other comments: ⌘ Affects Rel-5.

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.

8.7.1.1.1.5 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 and VI	Band II and V	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, VI	dBm/ 3.84 MHz	-74.54		-61,6		-96.47	
	Band II, V						-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, VI	dBm	-80.2	-84.2	-62.3	-71.3	-106.17	-112.7
	Band II, V						-104.17	-110.7
	Band III						-103.17	-109.7
Io, Note 1	Band I, VI	dBm / 3.84 MHz	-67.8		-51,4		-92,8	
	Band II, V						-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 and VI)	Test 3 (Band II and V)	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_-5~~0~~ (NOTE 2)	CPICH_RSCP_-3~~0~~ (NOTE 2)	CPICH_RSCP_-2~~0~~ (NOTE 2)
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_-1~~0~~ (NOTE 2)	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_-5~~0~~ (NOTE 2)	CPICH_RSCP_-5~~0~~ (NOTE 2)	CPICH_RSCP_-5~~0~~ (NOTE 2)
Highest reported value (Cell 2)	CPICH_RSCP_44	CPICH_RSCP_57	CPICH_RSCP_13	CPICH_RSCP_15	CPICH_RSCP_16

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: This value applies for a UE complying to release 5 or later. The corresponding value for a pre-release 5 UE is CPICH_RSCP_0.

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. 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	Version
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	If reporting of “Tm“ measurement is configured then check that this IE is present. If reporting of “Tm“ measurement is not configured then no check is needed.	
- OFF	If reporting of “OFF“ measurement is configured then check that this IE is present. If reporting of “OFF “ measurement is not configured then no check is needed.	
- CHOICE mode	FDD	
- Primary CPICH info	Checked that this IE is present	
- Primary scrambling code	See Annex K and TS 34.108 section 6.1.4	
- CPICH Ec/N0	If reporting of “CPICH Ec/N0“ measurement is configured then check that this IE is present. If reporting of “CPICH Ec/N0 “ measurement is not configured then no check is needed.	
- CPICH RSCP	If reporting of “CPICH RSCP “ measurement is configured then check that this IE is present. If reporting of “CPICH RSCP “ measurement is not configured then no check is needed.	
- $\mathrm{Delta}_{\mathrm{CPICH\ RSCP}}$	If reporting of “CPICH RSCP “ measurement is configured this IE may be present.	Rel-5
- Pathloss	This IE does not need to be checked.	
Measured results on RACH	If reporting of “Measured results on RACH“ is configured then check that this IE is present. If reporting of “Measured results on RACH“ measurement is not configured then no check is needed.	
Additional measured results	This IE does not need to be checked.	
Event results	If reporting of “Event results“ is configured then check that this IE is present. If reporting of “Event results“ measurement is not configured then no check is needed.	

3GPP TSG-RAN5 Meeting #27
Bath, UK, 25th - 29th April 2005

Tdoc ⌘ R5-050830

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CHANGE REQUEST

⌘	34.121	CR	542	⌘ rev	-	⌘	Current version:	6.0.0	⌘

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

Title:	⌘ CR to 34.121: Corrections to Annex C and Annex E			
Source:	⌘ 3GPP TSG RAN WG5 (Testing)			
Work item code:	⌘ TEI		***Date:***	⌘ 10/04/2005
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-6 *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 correct note on minimum TFC set for UL BTFD RMC and add missing title to Annex E.
Summary of change:	⌘ 1. Based on the criteria for minimum set of TFCs defined in TS 25.331 section 8.6.5.2 “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”. Accordingly for the DTCH logical channel in Annex C.4.1 TFC (TF10, TF0) contains the lowest number of bits. Hence the mimimum set of TFC consist of (TF0,TF0), (TF10, TF0) and (TF0, TF1) in BTFD test case and Annex C.4.1 needs to be corrected. 2. The OCNS definition in table E.3.6 is valid for all non-HSDPA test cases so it is more appropriate to be placed into a separate section. A new sub section has been created for OCNS in Annex E. This change automatically validates references in Table E.6.1.1. 3. Added comment regarding transmit diversity to table E.3.6 to align it with core specification TS25.101 v6.7.0
Consequences if not approved:	⌘ Specification would contain misleading comment and invalid references.

Clauses affected:	⌘ Annex C.4.1, E.3.5, table E.3.6				
		Y	**N**		
Other specs Affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘ This CR is applicable for UE's supporting Rel-99 and later releases.

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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.

<Start of first modified section>

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)	dB
	-2.69 (6.5k – 2.55k)	
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), (TF10, TF0) and (TF0, TF1)are belonging to minimum set of TFCs.

<End of modified section>

<Start of next modified section>

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

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.		

E.3.6 OCNS Definition

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. For OCNS with transmit diversity the DPCH data sent to each antenna shall be either STTD encoded or generated from uncorrelated sources.
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.

<End of modified section>

3GPP RAN5#27 **Tdoc ⌘R5-050814**
25 - 29 Apr 2005 Bath

CR-Form-v7

CHANGE REQUEST

⌘ **34.121**	**CR** 543	⌘**rev** **-** ⌘	Current version:	6.0.0 ⌘

*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 TC 5.9 Spectrum emission mask
Source:	⌘ 3GPP TSG RAN WG5 (Testing)
Work item code:	⌘ TEI 6 — ***Date:*** ⌘ 15/04/05
Category:	⌘ **F** — ***Release:*** ⌘ REL - 6

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 Spectrum emission mask test requirement in later releases of the core spec includes additional information over that in release 99.
Summary of change:	⌘ The clarifying information from later core spec releases is added, as well as additional frequency bands
Consequences if not approved:	⌘ The test may be mis-understood, and un-necessary level limits applied

Clauses affected:	⌘ 5.9.2 to 5.9.5

Other specs affected: ⌘

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

Other comments:	⌘ This test includes band specific information taken from the rel 6 core spec. The intended limits for a rel 99 UE are numerically unchanged, but are expressed more clearly

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.

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.

The absolute requirement is based on a –50 dBm/3.84 MHz minimum power threshold for the UE. This limit is expressed for the narrower measurement bandwidths as –55.8 dBm/1 MHz and –71.1 dBm/30 kHz.

Table 5.9.1: Spectrum Emission Mask Requirement

Δf in MHz (Note 1)	Minimum requirement (Note 2) Band I, II, III, IV, V, VI		Additional requirements Band II, Band IV and Band V (Note 3)	Measurement bandwidth (Note 6)
	Relative requirement	Absolute requirement		
2.5 - 3.5	$\left\{-35-15\cdot\left(\frac{\Delta f}{MHz}-2.5\right)\right\}dBc$	-71.1 dBm	-15 dBm	30 kHz (Note 4)
3.5 - 7.5	$\left\{-35-1\cdot\left(\frac{\Delta f}{MHz}-3.5\right)\right\}dBc$	-55.8 dBm	-13 dBm	1 MHz (Note 5)
7.5 - 8.5	$\left\{-39-10\cdot\left(\frac{\Delta f}{MHz}-7.5\right)\right\}dBc$	-55.8 dBm	-13 dBm	1 MHz (Note 5)
8.5 – 12.5 MHz	-49 dBc	-55.8 dBm	-13 dBm	1 MHz (Note 5)

Note 1: Δf is the separation between the carrier frequency and the centre of the measurement bandwidth.
Note 2: The minimum requirement for bands I, II, III, IV, V & VI is calculated from the relative requirement or the absolute requirement, whichever is the higher power.
Note 3: For operation in Band II, Band IV and Band V only, the minimum requirement is calculated from the minimum requirement calculated in Note 2 or the additional requirement for band II, whichever is the lower power.
Note 4: The first and last measurement position with a 30 kHz filter is at Δf equals to 2.515 MHz and 3.485 MHz.
Note 5: The first and last measurement position with a 1 MHz filter is at Δf equals to 4 MHz and 12 MHz.
Note 6: As a general rule, the resolution bandwidth of the measuring equipment should be equal to the measurement bandwidth. However, to improve measurement accuracy, sensitivity and efficiency, the resolution bandwidth may be smaller than 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.

~~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~~	$\cancel{\left\{-35-15\cdot\left(\frac{\Delta f}{MHz}-2.5\right)\right\}dBc}$	~~-15 dBm~~	~~30 kHz (note 2)~~
~~3,5 to 7,5~~	$\cancel{\left\{-35-1\cdot\left(\frac{\Delta f}{MHz}-3.5\right)\right\}dBc}$	~~-13 dBm~~	~~1 MHz (note 3)~~
~~7,5 to 8,5~~	$\cancel{\left\{-39-10\cdot\left(\frac{\Delta f}{MHz}-7.5\right)\right\}dBc}$	~~-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 –50 dBm/3,84 MHz or which ever is higher.~~			

The normative reference for this requirement is TS 25.101 [1] 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 (Note 2) Band I, II, III, IV, V, VI		Additional requirements Band II, Band IV and Band V (Note 3)	Measurement bandwidth (Note 6)
	Relative requirement	Absolute requirement (in measurement band width)		
2.5 - 3.5	$\left\{-33.5-15\cdot\left(\frac{\Delta f}{MHz}-2.5\right)\right\}dBc$	-69.6 dBm	-15 dBm	30 kHz (Note 4)
3.5 - 7.5	$\left\{-33.5-1\cdot\left(\frac{\Delta f}{MHz}-3.5\right)\right\}dBc$	-54.3 dBm	-13 dBm	1 MHz (Note 5)
7.5 - 8.5	$\left\{-37.5-10\cdot\left(\frac{\Delta f}{MHz}-7.5\right)\right\}dBc$	-54.3 dBm	-13 dBm	1 MHz (Note 5)
8.5 - 12.5 MHz	-47.5 dBc	-54.3 dBm	-13 dBm	1 MHz (Note 5)

Note 1: Δf is the separation between the carrier frequency and the centre of the measurement bandwidth.
Note 2: The minimum requirement for bands I, II, III, IV, V & VI is calculated from the relative requirement or the absolute requirement, whichever is the higher power.
Note 3: For operation in Band II, Band IV and Band V only, the minimum requirement is calculated from the minimum requirement calculated in Note 2 or the additional requirement for band II, whichever is the lower power.
Note 4: The first and last measurement position with a 30 kHz filter is at Δf equals to 2.515 MHz and 3.485 MHz.
Note 5: The first and last measurement position with a 1 MHz filter is at Δf equals to 4 MHz and 12 MHz.
Note 6: As a general rule, the resolution bandwidth of the measuring equipment should be equal to the measurement bandwidth. However, to improve measurement accuracy, sensitivity and efficiency, the resolution bandwidth may be smaller than 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.

~~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 –48,5 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.

5.9A Spectrum Emission Mask with HS-DPCCH

….NEXT CHANGED SECTION IS ANNEX F, table 4.1, section 5.9…..

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.4.1: Derivation of Test Requirements (Transmitter tests)

………. (unchanged sections skipped)

5.9 Spectrum emission mask	Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. This is expressed as the equivalent power in the measurement band-width used at each offset.	1.5 dB	Formula: Minimum requirement + TT Lower limit + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. Zero test tolerance is applied for Additional requirements for Band II due to FCC regulatory requirements. The lower limit shall be –48.5 dBm / 3.84 MHz or which ever is higher.

……

3GPP RAN WG5 Meeting #27
Bath, England, 25-29 April, 2005

Tdoc ⌘R5-050575

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	544	⌘ rev	-	⌘	Current version:	6.0.0	⌘

*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:	⌘	Clarifications of TS34.121 section 9.1		
Source:	⌘	3GPP TSG RAN WG5 (Testing)		
Work item code:	⌘	TEI	***Date:*** ⌘	15/04/2005
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-6 *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 general section for HSDPA Performance tests should contain all general information
Summary of change:	⌘	1. Definition of common RF test conditions 2. Adding a note in order to clarify that the uplink is error free
Consequences if not approved:	⌘	There could be a misunderstanding of the general configuration of the UE in HSDPA performance tests

Clauses affected:	⌘	9.1			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This CR applies to Rel-5 and later releases			

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.

The common RF test conditions of Performance requirements are defined in clause E.5, and each test conditions in this clause (clause 9) should refer clause E.5. Individual test conditions are defined in the paragraph of each test.

Note 1: The UE output power needs to be high enough so that uplink transmission can be received error free in the SS.