Source: **T1**

Title: **CRs to TS 34.121 v.5.6.0 for approval**

Agenda item: **6.1.3**

Document for: **Approval**

This document contains the CRs to TS 34.121 v.5.6.0. These CRs have been agreed by T1 and are put forward to TSG T for approval.

Doc-2nd-Level	*CR*	*Rev*	*Phase*	*Subject*	*Cat*	*Version-Current*	*Version-New*
T1-050080	479	-	Rel-6	Change of test method and test time optimization in TC 8.7.3A	F	5.6.0	6.0.0
T1-050122	480	-	Rel-6	Corrections to RRM test case 8.4.3.1 “Transport format combination selection in UE”	F	5.6.0	6.0.0
T1-050124	481	-	Rel-6	Ior value correction for RRM test case, 8.6.2.1	F	5.6.0	6.0.0
T1-050186	482	-	Rel-6	Removal of editorial notes from TC 8.7.3C	F	5.6.0	6.0.0
T1-050215	483	-	Rel-6	Invalid MAC header for downlink dummy DCCH (mandatory)	F	5.6.0	6.0.0
T1-050217	484	-	Rel-6	Correction to RRC CONNECTION SETUP and RB SETUP messages for TX diversity	F	5.6.0	6.0.0
T1-050219	485	-	Rel-6	Correction to CPICH_Ec/Io in 8.6.1.3	F	5.6.0	6.0.0
T1-050221	486	-	Rel-6	Correction to ”Read SFN indicator” in Measurement Control Messages	F	5.6.0	6.0.0
T1-050233	487	-	Rel-6	Table E.3.4 Correction	D	5.6.0	6.0.0
T1-050234	488	-	Rel-6	Addition of 25.212 to reference list	D	5.6.0	6.0.0
T1-050235	489	-	Rel-6	Addition of fading case 8 for HSDPA testing	D	5.6.0	6.0.0
T1-050308	490	-	Rel-6	Measurement configuration setup information	F	5.6.0	6.0.0
T1-050309	491	-	Rel-6	Addition of uncertainties and test tolerances to TC 7.7.3	F	5.6.0	6.0.0
T1-050311	492	-	Rel-6	Omission of test points in 6.5. Blocking Characteristics	F	5.6.0	6.0.0

T1-050313	493	-	Rel-6	CR to 34.121: Changes to 7.12: Detection of Acquisition Indicator	F	5.6.0	6.0.0
T1-050315	494	-	Rel-6	CR to 34.121: Changes to 8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)	F	5.6.0	6.0.0
T1-050316	495	-	Rel-6	Deletion of Target quality value on DTCH in Clause 8.7.3C UE transmitted power	F	5.6.0	6.0.0
T1-050319	496	-	Rel-6	Clarification of reference value for T Reconfirm Abort Parameter in Inter-Rat Test Case 8.3.4	F	5.6.0	6.0.0
T1-050321	497	-	Rel-6	Clarification of RRM TC 8.2.3	F	5.6.0	6.0.0
T1-050322	498	-	Rel-6	Correction to "Reporting cell status" in Measurement Control Messages	F	5.6.0	6.0.0
T1-050324	499	-	Rel-6	Correction to 8.3.1	F	5.6.0	6.0.0
T1-050326	500	-	Rel-6	Correction to MEASUREMENT REPORT message in Annex I	F	5.6.0	6.0.0
T1-050329	501	-	Rel-6	Removal of Rel-5 specific reference to TS 25.101	F	5.6.0	6.0.0
T1-050338	502	-	Rel-6	Test tolerances for Test 9.2.2 Open loop diversity performance and 9.2.3 Closed loop diversity performance	F	5.6.0	6.0.0
T1-050347	503	-	Rel-6	CR to 34.121: Changes to Annex D and Annex H to introduce UMTS 850 Band	B	5.6.0	6.0.0
T1-050351	504	-	Rel-6	Correction of 34.121 Power vs. Time diagrams	F	5.6.0	6.0.0
T1-050352	505	-	R99	Clarification for Test Case 7.9	F	5.6.0	6.0.0
T1-050356	506	-	Rel-6	Correction to OCNS value in 8.7.2.2	F	5.6.0	6.0.0
T1-050362	508	-	Rel-6	Level Definition HS_SCCH_1 and DPCH for Test 9.2.2 Open loop diversity performance And Test 9.2.3 Closed loop diversity performance	F	5.6.0	6.0.0
T1-050366	509	-	Rel-6	Changes to Annex I to harmonise System Information scheduling for RRM test cases.	F	5.6.0	6.0.0
T1-050368	510	-	Rel-6	Level Definition HS_SCCH_1 and DPCH for Test 9.2.1 Single link performance	F	5.6.0	6.0.0
T1-050370	511	-	Rel-6	Correction to TS34.121 TC 8.4.2	D	5.6.0	6.0.0
T1-050371	512	-	Rel-6	Correction to the event triggered reporting test cases	F	5.6.0	6.0.0
T1-050373	513	-	Rel-6	Corrections to reporting of CQI	F	5.6.0	6.0.0
T1-050374	514	-	Rel-6	Correction to H Set-4/5 pattern length	F	5.6.0	6.0.0
T1-050375	515	-	Rel-6	Corrections to detection of HS-SCCH	F	5.6.0	6.0.0

T1-050376	516	-	Rel-6	CR to 34.121 section 5: Introduction of test case for Adjacent Channel Leakage Power Ratio with HS-DPCCH	B	5.6.0	6.0.0
T1-050377	517	-	Rel-6	CR to 34.121 section 5: Introduction of new test case for HSDPA: UE max output power with HS-DPCCH	B	5.6.0	6.0.0
T1-050378	518	-	Rel-6	CR to 34.121 section 5: Introduction of new test case for Error Vector Magnitude with HS-DPCCH	B	5.6.0	6.0.0
T1-050379	519	-	Rel-6	CR to 34.121 section 5: Introduction of a new test case for spectrum emission mask with HS-DPCCH	B	5.6.0	6.0.0
T1-050381	520	-	Rel-6	CR to 34.121: Changes to RRM test cases for introduction of UMTS 850 Band	B	5.6.0	6.0.0
T1-050382	521	-	Rel-6	Corrections to maximum input level for HS-PDSCH reception	F	5.6.0	6.0.0
T1-050318r3	522	-	Rel-6	Corrections to TC 8.5.1 UE transmit timing	F	5.6.0	6.0.0
T1-050383	523	-	Rel-6	Corrections to demodulation of HS-DSCH	F	5.6.0	6.0.0
T1-050499	524	-	Rel-5	Replacement of technical contents of version 5 by pointer to version 6.	D	5.6.0	5.7.0

3GPP TSG-T1 Meeting #26 **Tdoc ⌘T1-050080**
Bangalore, India, 31. January – 4. February 2005

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	479	⌘rev	-	⌘	Current version:	5.6.0	⌘

*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 test method and test time optimization in TC 8.7.3A
Source:	⌘	Nokia
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	R5

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

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

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

Reason for change: ⌘

Currently the test is specified so that it is required to have 6 neighbouring GSM cells. The purpose of this CR is to create a solution using only 2 neighbouring GSM cells active at a time. This would result less complex test system and thus lower costs. This change is related to reply LS from RAN4 (R4-040786).

In order to achieve statistical confidence test needs to be repeated 1000 times. This will result too long a testing time with current method. Therefore amount of test environments is reduced from 5 to 3 and table 8.7.3A.3 is modified to reduce the amount of steps from 105 to 12. This change is related to reply LS from RAN4 (R4-040786).

Maximum test system uncertainties, test tolerances and derivation of test requirements have not been defined for TC 8.7.3A (GSM Carrier RSSI) in Annex F

Test Tolerances have not been taken into account in Section 8.7.3A

Current specification does not take into account that the rate of correct measurements observed during measurement shall be at least 90%. This rule comes from TS 25.133.

Summary of change: ⌘

This CR will introduce a new method to perform the TC 8.7.3A. This new method is performed using 2 active neighbouring GSM cells instead of 6.

The format of test parameters and test requirements have been aligned with other test cases in TS 34.121.

Maximum test system uncertainties have been added into Table F.1.5

Test tolerances have been added into table F.2.4

		Derivation of test requirements have been added into table F.4.4 Test tolerances have been added into Test Requirements in Section 8.7.3A.5 90% rule has been added into minimum requirements and to test requirements Test procedure includes now the repetition of the test 1000 times in order to achieve the statistical confidence required for this test. This number is put in brackets since it is possible that the number of repetition will be optimised in future T1 meetings.
Consequences if not approved:	⌘	1) Test needs more complex test system to perform. 2) Test duration is too long to be realistically implemented 3) The test tolerances are not taken into account so good UE may fail the test 4) The required confidence level is not achieved for test requirements

Clauses affected:	⌘	8.7.3A, Annex F.1.5, Annex F.2.4, Annex F.4.4				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR is applicable to R99 and later releases. It should be noted that GSM carrier RSSI measurements are also tested in GSM mode so the test in TS 34.121 Section 8.7.3A is not the only test to verify the accuracy of GSM Carrier RSSI measurements.				

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.

8.7.3A 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, ~~TL/VH, TH/VL,~~ TH/VH; see clauses G.2.1 and G.2.2.

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

In the test in Cell_DCH state compressed mode with purpose “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	d~~D~~B	-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

1) ~~The SS is set to produce the BCCHs of 6 surrounding cells at 28 dBµVemf( ). The fading profile for the BCCHs of the surrounding cells will be set to static, see 51.010-1 [25]. The limits of the GSM test parameters are defined in TS 05.08 [20] for R99 and in TS 45.008 [30] for Rel-4 and latere releases.~~

2) ~~After 30 seconds a call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Cell 1 is set up according to table 8.7.3A.1 and 8.7.3A.2.~~

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~~1~~) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

4~~2~~) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

5~~3~~) SS shall transmit MEASUREMENT CONTROL message.

6~~4~~) UE shall transmit periodically MEASUREMENT REPORT messages.

7~~5~~) ~~SS shall check GSM carrier RSSI value of the GSM cells in MEASUREMENT REPORT messages. The measurement is done in 105 steps. The initial signal levels of the BCCHs of the surrounding cells are adjusted according to table 8.7.3A.3. At each step the SS keeps the signal levels stable for one reporting period, except at steps 21 + m × 21 where the level is held stable for 1,75 reporting periods. The GSM CARRIER RSSI value for the period in which the change occurs (reported in the following period) is discarded. The SS records the GSM CARRIER RSSI values reported for the surrounding cell BCCHs in steps 1 + m × 21 and 21 + m × 21. The GSM CARRIER RSSI values for BCCH 1 are recorded by the SS for all 105 steps.~~ 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.

~~NOTE: This extension at steps 21 + m × 21 is to allow an extra quarter reporting period for the UE to stabilize for steps 1 + m × 21.~~

~~Table 8.7.3A.3: Signal levels at receiver input in dBμVemf( )~~

	~~ARFCN~~	~~BCCH1~~	~~BCCH2~~	~~BCCH3~~	~~BCCH4~~	~~BCCH5~~	~~BCCH6~~
~~Step~~	~~GSM 450~~	~~276~~	~~293~~	~~264~~	~~269~~	~~281~~	~~288~~
	~~GSM 480~~	~~323~~	~~340~~	~~311~~	~~316~~	~~328~~	~~335~~
	~~GSM 900:~~	~~62~~	~~124~~	~~20~~	~~40~~	~~80~~	~~100~~
	~~DCS 1 800~~	~~700~~	~~885~~	~~585~~	~~660~~	~~790~~	~~835~~
	~~PCS 1 900~~	~~700~~	~~805~~	~~585~~	~~660~~	~~790~~	~~550~~
	~~450/900~~	~~124~~	~~276~~	~~293~~	~~269~~	~~288~~	~~1~~
	~~480/900~~	~~124~~	~~323~~	~~340~~	~~316~~	~~335~~	~~1~~
	~~450/1 800~~	~~885~~	~~276~~	~~293~~	~~269~~	~~288~~	~~512~~
	~~480/1 800~~	~~885~~	~~323~~	~~340~~	~~316~~	~~335~~	~~512~~
	~~900/1 800~~	~~885~~	~~62~~	~~124~~	~~40~~	~~100~~	~~512~~
	~~450/900/1 800~~	~~124~~	~~276~~	~~885~~	~~293~~	~~1~~	~~512~~
	~~480/900/1 800~~	~~124~~	~~323~~	~~885~~	~~340~~	~~1~~	~~512~~
	~~GSM 850~~	~~189~~	~~251~~	~~150~~	~~170~~	~~210~~	~~230~~
	~~GSM 750~~	~~475~~	~~511~~	~~440~~	~~455~~	~~485~~	~~500~~
	~~750/850~~	~~251~~	~~475~~	~~511~~	~~455~~	~~485~~	~~128~~
~~1 + m × 21~~		~~64,5 - m × 10~~	~~64,5 - m × 10~~	~~64,5 - m × 10~~	~~64,5 - m × 10~~	~~64,5 - m × 10~~	~~64,5 - m × 10~~
~~2 + m × 21~~		~~63,5 - m × 10~~	~~54,5 - m × 10~~	~~54,5 - m × 10~~	~~54,5 - m × 10~~	~~54,5 - m × 10~~	~~54,5 - m × 10~~
~~3 + m × 21~~		~~62,5 - m × 10~~	~~44,5 - m × 10~~	~~44,5 - m × 10~~	~~44,5 - m × 10~~	~~44,5 - m × 10~~	~~44,5 - m × 10~~
~~-~~		~~-~~	~~-~~	~~-~~	~~-~~	~~44,5 - m × 10~~	~~44,5 - m × 10~~
~~17 + m × 21~~		~~-~~	~~-~~	~~-~~	~~-~~	~~44,5 - m × 10~~	~~44,5 - m × 10~~
~~18 + m × 21~~		~~-~~	~~-~~	~~-~~	~~-~~	~~44,5 - m × 10~~	~~44,5 - m × 10~~
~~-~~		~~-~~	~~-~~	~~-~~	~~-~~	~~44,5 - m × 10~~	~~44,5 - m × 10~~
~~21 + m × 21~~		~~44,5 - m × 10~~	~~44,5 - m × 10~~	~~44,5 - m × 10~~	~~44,5 - m × 10~~	~~44,5 - m × 10~~	~~44,5 - m × 10~~
~~m = 0, 1, 2, 3, 4.~~							

Specific Message Contents

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

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 3~~1~~):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
- CHOICE *channel requirement*	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 – 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

MEASUREMENT CONTROL message for Inter frequency measurement (step 5~~3~~):

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-RAT measurement -Inter-RAT measurement objects list -CHOICE *Inter-RAT cell removal* -New inter-RAT cells -Inter-RAT cell id -CHOICE Radio Access Technology -GSM -Cell individual offset -Cell selection and re-selection info -BSIC -Base transceiver Station Identity Code (BSIC) -Band indicator -BCCH ARFCN -Cell for measurement -Inter-RAT measurement quantity -Measurement quantity for UTRAN quality estimate -CHOICE system -GSM -Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity -UTRAN estimated quality -CHOICE system -GSM -Observed time difference to GSM cell Reporting indicator -GSM carrier RSSI reporting indicator -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -CHOICE report criteria -Amount of reporting -Reporting interval	 2 Setup Acknowledged mode RLC Periodical reporting Not Present Inter-RAT measurement Not Present 9 GSM 0 Not Present Reference to TS 34.108 table 6.1.10 for Cell 9 According to PICS/PIXIT 1 Not Present Not Present GSM GSM Carrier RSSI 0 not required FALSE GSM FALSE TRUE Report cells within active set or within virtual active set or of the other RAT 6 Periodical reporting criteria Infinity 500 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for inter – 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			

~~8.7.3A.5.1 Relative accuracy of measurements on different ARFCN~~

~~For normal and each of the 4 extreme conditions tested the following applies:~~

~~a) For each of the steps 1, 21, 22, 42, 43 and 64, of the 6 reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 4 if the measurements are on the same or on different RF channel within the same frequency band and no more than 8 (12 for extreme temperature conditions) if the measurements are on different frequency bands.~~

~~b) For each of the steps 63 and 85, of the 6 reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 5 for small UE, DCS 1 800 and PCS 1 900 (Class 1 and 2) UE or 4 for other UE if the measurements are on the same or on different RF channel within the same frequency band and no more than 9 for small UE, DCS 1 800 and PCS 1 900 (Class 1 and 2) UE or 8 for other UE and other PCS 1 900 UE (13 and 12 for extreme temperature conditions) if the measurements are on different frequency bands.~~

~~c)For step 84, of the 6 reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 5 if the measurements are on the same or on different RF channel within the same frequency band and no more than 9 (13 for extreme temperature conditions) if the measurements are on different frequency bands.~~

~~d)For step 105, of the reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 6 if the measurements are on the same or on different RF channel within the same frequency band and no more than 10 (14 for extreme temperature conditions) if the measurements are on different frequency bands.~~

~~The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3A.2.~~

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

~~NOTE: It is not mandatory for the MS to report any of the BCCHs in step 105.~~

~~8.7.3A.5.2 Relative accuracy at a single frequency (BCCH1)~~

~~For normal and each of the 4 extreme conditions tested the following applies:~~

~~For: n <= 21 and $RXLEV_1 = 63$~~

~~$RXLEV_n - (63 - n + r)$ shall be between:~~

~~-2 and +2~~

~~NOTE 1: This formula allows for an MS with an absolute accuracy worse than +0,5 dB and therefore reporting an RXLEV of 63 for more than one step. The formula checks the relative accuracy from the lowest input level for which the MS last reports RXLEV of 63.~~

~~Otherwise:~~

~~$RXLEV_{(m*21+1)} - RXLEV_{(m*21+n)} - n + 1$ shall be between:~~

~~-2 and +2~~

- ~~for steps 2 to 62 and 65 to 71 for DCS 1 800 class 1/2 MS; or steps 2 to 62 and 65 to 73 for DCS 1 800 class 3, PCS 1 900 (Class 1&2) and Small GSM MS; or 2 to 75 for other MS and other PCS 1 900 MS.~~

~~-3 and +2~~

- ~~for steps 63 and 72 to 96 for DCS 1 800 class 1/2 MS; or steps 63 and 74 to 98 for DCS 1 800 class 3, PCS 1 900 (Class 1 and 2) and Small GSM MS; or~~
- ~~76 to 100 for other MS and other PCS 1 900 MS.~~

~~-4 and +2~~

- ~~for steps 97 to 105 for DCS 1 800 class 1/2 MS; or steps 99 to 105 for DCS 1 800 class 3, PCS 1 900 (Class 1 and 2) and Small GSM MS; or 101 to 105 for other MS and other PCS 1 900 MS.~~

~~where: $1 < n \leq 21$ and $0 \leq m \leq 4$ as identified in table 8.7.3A.3, and r is the number of the last step where RXLEV of 63 was reported.~~

~~NOTE 2: It is not mandatory for the MS to report BCCH1 for steps greater than 99 for GSM 400, GSM 700, GSM 850 or GSM 900 Small MS or 101 for other GSM and other PCS 1 900 MS or 97 for a DCS 1 800 Class 1 or Class 2 MS and 99 for DCS 1 800 Class 3 and PCS 1 900 (Class 1 and 2) MS. If the MS reports a level and the upper limit for this step in the above formula implies a level below the reference sensitivity level for the type of MS, then the upper limit shall be considered as equal to a value corresponding to the reference sensitivity level.~~

~~8.7.3A.5.3 Absolute accuracy~~

~~For each BCCH reported, $|RXLEV_{MS} + m \times 10 - 62|$ shall be no more than:~~

~~4 for steps 64 and 85 under normal conditions.~~

~~6 for steps 64 and 85 under extreme conditions.~~

~~6 for steps 1, 22 and 43 under normal and extreme conditions.~~

~~where: $0 \leq m \leq 4$ as identified in table 8.7.3A.3.~~

F.1.5 Requirements for support of RRM

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

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.7.3 UTRA Carrier RSSI	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc1/Ioc2 based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.3A GSM Carrier RSSI	~~TBD~~ $\hat{I}_{or}/I_{oc}$ ±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.

F.2.4 Requirements for support of RRM

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

Clause	Test Tolerance
8.7.3 UTRA Carrier RSSI	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc
8.7.3A GSM Carrier RSSI	~~TBD~~ 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

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

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.3A GSM Carrier RSSI	~~TBD~~ 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.

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Bangalore, India, 31. January – 4. February 2005

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**482**	⌘ **rev**	**-**	⌘	Current version:	**5.6.0**	⌘

*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:	⌘	Removal of editorial notes from TC 8.7.3C
Source:	⌘	Nokia
Work item code:	⌘	TEI — ***Date:*** ⌘ 24/01/2005
Category:	⌘	**F** — ***Release:*** ⌘ R5

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

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

Reason for change:	⌘	T1 asked RAN4 to clarify the original "UE transmitted power" test case and its requirements. RAN4 agreed the clarifying CR (R4-040686) in its last meeting and it has now been implemented in TS 25.133. Therefore the two editorial notes in TC 8.7.3C that anticipate changes to TS 25.133 should be removed. At the same time the Table 8.7.3C.2.1 needs to be revised according to latest TS 25.133. Note that the changes to TS 25.133 have been in-line with T1 thinking and therefore there are no need for technical changes in test requirements
Summary of change:	⌘	Table 8.7.3C.2.1 has been copied from latest TS 25.133 in the minimum requirements section. Editorial notes have been removed in section 8.7.3C.2 and 8.7.3C.5
Consequences if not approved:	⌘	1) Table 8.7.3C.2.1 is not in-line with TS 25.133 2) There are two editorial notes that are not anymore upto date.

Clauses affected:	⌘	8.7.3C			
		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.			

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.

8.7.3C UE transmitted power

8.7.3C.1 Definition and applicability

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

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

8.7.3C.2 Minimum requirements

The measurement period in CELL_DCH state is 1 slot.

Table 8.7.3C.2.1 UE transmitted power absolute accuracy

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

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

8.7.3C.3 Test purpose

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

8.7.3C.4 Method of test

8.7.3C.4.1 Initial conditions

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

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

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

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

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

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

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

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

8.7.3C.4.2 Procedure

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

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

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

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

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

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

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

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

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

Specific Message Contents

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

MEASUREMENT CONTROL message:

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.

Measurement Information elements
-Measurement Identity
-Measurement Command
-CHOICE Measurement type
 -UE Internal measurement quantity
  -Measurement quantity
  -Filter coefficient
 -UE Internal reporting quantity
  -UE Transmitted power
  -CHOICE mode
   -UE Rx-Tx time difference
 -CHOICE report criteria
  -Amount of reporting
  -Reporting interval
-Measurement Reporting Mode
 -Measurement Report Transfer Mode
 -Periodical Reporting / Event Trigger Reporting Mode
-AdditionalMeasurementList
	
	5
	SETUP
	UE Internal measurement
	
	UE Transmitted power
	0
	
	TRUE
	FDD
	FALSE
	Periodical reporting criteria
	Infinity
	250
	
	AM RLC
	Periodical reporting
	Not Present

Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message:

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

PHYSICAL CHANNEL RECONFIGURATION message:

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

8.7.3C.5 Test requirements

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

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.

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

3GPP TSG-T1 Meeting #26 **Tdoc ⌘T1-050215**
Bangalore, India, 31st Jan – 4th Feb 2005

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	483	⌘rev	-	⌘	Current version:	5.6.0	⌘

*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:	⌘	Invalid MAC header for downlink dummy DCCH (mandatory)		
Source:	⌘	NEC		
Work item code:	⌘	TEI	***Date:*** ⌘	18/01/2005
Category:	⌘	**F**	***Release:*** ⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*	

Reason for change:	⌘	At T1#25 invalid MAC header for downlink dummy DCCH was introduced as optional (except for BTFD) for a transition period. An LS was sent to GCF (T1-041986) that it will become mandatory at T1#26. This CR makes the invalid MAC header mandatory for downlink dummy DCCH.
Summary of change:	⌘	Remove the text in sections 8.1 and C.9 which made the usage of invalid MAC headers for downlink dummy DCCH optional for a transition period.
Consequences if not approved:	⌘	Good UE might fail.

Clauses affected:	⌘	8.1, C.9				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	Appliable for terminals supporting R99 and later.				

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

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

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

8 Requirements for support of RRM

8.1 General

The cell configuration mapping between cells as defined in TS 34.121 and cells as defined in TS 34.108 section 6.1.4 is described in Annex K.

When DCCH has been configured on downlink DCH then DCCH Data shall be continuously transmitted on downlink DCH. When there is no signalling to transmit on downlink DCCH then dummy DCCH transmission as described in Annex C.9 shall be used.

~~The downlink dummy DCCH is optional in this version of the specification. It will become mandatory in T1#26.~~

C.9 Downlink reference channel dummy DCCH transmission on DCH

Many test cases have been designed to have continuous downlink DCCH transmission on DCH. The DCCH is carrying SRBs. When there are no signalling messages to be transmitted on downlink DCCH then dummy DCCH messages shall be transmitted on the downlink.

For all test cases with continuous downlink DCCH transmission on DCH the format of the dummy DCCH message is using an invalid MAC header with the value “1111” for the C/T field. The UE shall discard PDU’s with this invalid MAC header according to TS 25.321. This applies for cases where a MAC header is used to distinguish between several logical channels. In the case of the reference measurement channels the SRBs on DCH use a 4 bit MAC header.

~~For all test cases except Blind Transport Format Detection (section 7.10) using an invalid MAC header with the value “1111” for the C/T field for downlink dummy DCCH is optional in this version of the specification. It will become mandatory in T1#26. For Blind Transport Format Detection using an invalid MAC header with the value “1111” for the C/T field for downlink dummy DCCH is mandatory in this version of the specification.~~

3GPP TSG-T1 Meeting #26 **Tdoc ⌘T1-050217**
Bangalore India, 31st January – 4th February

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**484**	⌘ **rev**	**-**	⌘	Current version:	**5.6.0**	⌘

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 RRC CONNECTION SETUP and RB SETUP messages for TX diversity
Source:	⌘	Anritsu
Work item code:	⌘	
Date:	⌘	24/1/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

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

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

Reason for change:	⌘	In 7.6.2, FBI bit is not specified. According to TS25.214 Table 8, FBI bit is specified as 1bit.
Summary of change:	⌘	FBI bit is added in the exception of RRC CONNECTION SETUP and RB SETUP messages.
Consequences if not approved:	⌘	UE will not be tested properly.

Clauses affected:	⌘	7.6.2			
		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:

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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.

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.

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CHANGE REQUEST

⌘ **34.121**	**CR 485**	⌘**rev**	**-** ⌘	Current version:	**5.6.0** ⌘

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

Title:	⌘ Correction to CPICH_Ec/Io in 8.6.1.3
Source:	⌘ Anritsu
Work item code:	⌘
Date:	⌘ 24/1/2005
Category:	⌘ **F**
Release:	⌘ Rel-5

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

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

Reason for change: ⌘ In table 8.6.1.3.5, the derived calculation of CPICH_Ec/Io is not rounded correctly.

Summary of change: ⌘ The current specified values are changed to below calculated values.
CPICH_Ec/Io = CPICH_Ec(Cell n) – Io
Cell1
T1 = -80.00 - (-69.401) = -10.599 -> -10.60
T2,3 = -66.10 - (-53.500) = -12.600 ->-12.60
T4 = -80.10 - (-66.001) = -14.099 ->-14.1
T5 = -66.10 - (-53.500) = -12.600 ->-12.60
Cell2
T2 ,3= -67.10 - (-53.500) = -13.600 ->-13.60
T4 = -80.60 - (-66.001) = -14.599 ->-14.60
T5 = -73.10 - (-53.500) = -19.600 ->-19.60
Cell3
T1 = -86.50 - (-69.401) =-17.099 ->-17.1
T2,3 = -73.10 - (-53.500) = -19.600 ->-19.60
T4 = -80.60 - (-66.001) = -14.599 ->-14.60
T5 = -67.10 - (-53.500) =-13.600 ->-13.60

Consequences if not approved: ⌘ The values could be lead to confusion.

Clauses affected: ⌘ 8.6.1.3

Other specs affected: ⌘

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

Other comments: ⌘ This CR applies for Rel-99 and later releases.

How to create CRs using this form:

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

8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition (R99)

8.6.1.3.1 Definition and applicability

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

The requirements and this test apply to the Release 99 FDD UE.

8.6.1.3.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.3.

8.6.1.3.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.3.4 Method of test

8.6.1.3.4.1 Initial conditions

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

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

The initial test parameters are given in table 8.6.1.3.4.

Table 8.6.1.3.1: Cell specific initial test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	5.870	-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 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) After 10 seconds from the beginning T2, the SS shall switch the power settings from T2 to T4.

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

11) 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) After 10 seconds, the UE is switched off.

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

Specific Message Contents

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

MEASUREMENT CONTROL message:

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

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

MEASUREMENT REPORT message for Intra frequency test cases

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

8.6.1.3.5 Test requirements

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

Table 8.6.1.3.4: Initial test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	**T0**	**T0**
CPICH_Ec/Ior	dB	-9.60	-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.~~50~~60	-12.~~50~~60		-14.~~0~~1	-12.~~50~~60	-Inf	-13.~~50~~60		-14.~~50~~60	-19.~~50~~60	-17.~~0~~1	-19.~~50~~60		-14.~~50~~60	-13.~~50~~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-T1 Meeting #26 **Tdoc ⌘T1-050221**
Bangalore India, 31st January – 4th February

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**486**	⌘ **rev**	**-**	⌘ Current version: **5.6.0** ⌘

*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 "Read SFN indicator" in Measurement Control Messages		
Source:	⌘ Anritsu		
Work item code:	⌘	***Date:*** ⌘	24/1/2005
Category:	⌘ **F**	***Release:*** ⌘	Rel-5
	Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*	

Reason for change:	⌘ According to TS25.331:8.4.1.3, if "Read SFN indicator" is "TRUE" in Measurement Control Message for inter frequency, Measurement Control Message could be configured incomplete.
Summary of change:	⌘ "Read SFN indicator" is configured to be FALSE in Measurement Control Message.
Consequences if not approved:	⌘ UE will not be tested properly.

Clauses affected:	⌘ 8.6.2.1, 8.6.2.2				
		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.

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

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

A cell shall be considered detectable when CPICH Ec/Io $\geq$ -20 dB, SCH_Ec/Io $\geq$ -17 dB for at least one channel tap and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

When transmission gaps are scheduled for FDD inter frequency measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.1 and 9.1.2 of 25.133 with measurement period given by

$$\mathrm{T}_{\text{measurement inter}} = Max\left\{\mathrm{T}_{\text{Measurement\_Period Inter}}, \mathrm{T}_{\text{basic measurement FDD inter}} \cdot \frac{\mathrm{T}_{\text{Measurement\_Period Inter}}}{\mathrm{T}_{\text{Inter}}} \cdot N_{Freq}\right\} ms$$

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

The UE shall be capable of performing CPICH measurements for $X_{\text{basic measurement FDD inter}}$ inter-frequency cells per FDD frequency of the monitored set or the virtual active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $T_{\text{Measurement\_ Inter.}}$

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

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

$T_{\text{Inter:}}$ This is the minimum time that is available for inter frequency measurements , during the period $T_{\text{Measurement\_Period inter}}$ with an arbitrarily chosen timing. The minimum time per transmission gap is calculated by using the actual idle length within the transmission gap as given in the table 11 of Annex B in TS 25.212 and by assuming 2*0.5 ms for implementation margin and after that taking only full slots into account in the calculation.

$T_{\text{basic\_identify\_FDD,inter}}$ = 800 ms. This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.

$T_{\text{basic\_measurement\_FDD inter}}$ = 50 ms. This is the time period used in the equation for defining the measurement period for inter frequency CPICH measurements.

N_{Freq}: Number of FDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{\text{identify inter}}$ 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 5 seconds from the beginning of T2, the UE is switched off.

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

NOTE: The measurement reporting delay is 956.2 ms plus 80 ms delay uncertainty (twice the TTI). This gives a total of 1036.2 ms and rounded off to 1040 ms.

Specific Message Contents

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

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement:

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

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

MEASUREMENT CONTROL message (inter frequency):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
- CHOICE Inter-frequency cell removal	Not Present
- New Inter frequency cells	
- Inter frequency cell id	0
- Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Not Present
- UARFCN downlink(Nd)	Same frequency as "Channel2" in Table 8.6.2.1.5
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE~~TRUE~~
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to Primary scrambling code of Cell3
- Primary CPICH Tx Power	Set to Primary CPICH Tx Power of Cell3 described in Table 8.6.2.1.5
- Tx Diversity Indicator	FALSE
- Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH_Ec/N0
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
- Inter-frequency set update (10.3.7.22)	
-UE autonomous update mode	On with no reporting
-CHOICE report criteria	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity	Event 2C
-Threshold used frequency	Not present
-W used frequency	Not present

Information Element/Group name	Value/Remark
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status	
-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

{Unchanged Sections are clipped here}

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 40 seconds from 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~~TRUE~~ 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	Report all active set cells + cells within monitored set on 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.	

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
   -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 REPORT message for Inter frequency test cases

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

CR-Form-v7.1

CHANGE REQUEST

⌘	34.121	CR	487	⌘ rev	-	⌘	Current version:	5.6.0	⌘

*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:	⌘	Table E.3.4 Correction	
Source:	⌘	Spirent Communications	
Work item code:	⌘	TEI	***Date:*** ⌘ 24/01/05
Category:	⌘	**D**	***Release:*** ⌘ Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *Ph2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)* *Rel-7 (Release 7)*

Reason for change:	⌘	Table contains repeated informormation about P-CPICH on antenna 1 and 2
Summary of change:	⌘	First two rows of table deleted
Consequences if not approved:	⌘	Table E.3.4 will be confusing and could cause misinterpretation of downlink physical channel requirement.

Clauses affected:	⌘	E.3.4				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR is applicable to UE's supporting Rel-99 or later.				

How to create CRs using this form:

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

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

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

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

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

E.3.4 Connection with open-loop transmit diversity mode

Table E.3.4 is applicable for measurements for clause 7.6.1.

Table E.3.4: Downlink Physical Channels transmitted during a connection

Physical Channel	Power	Note
~~P-CPICH (antenna 1)~~	~~P-CPICH_E_{c1}/I_{or} = –13 dB~~	~~1. Total P-CPICH_E_c/I_{or} = –10 dB~~
~~P-CPICH (antenna 2)~~	~~P-CPICH_E_{c2}/I_{or} = –13 dB~~	
P-CPICH (antenna 1)	P-CPICH_E_{c1}/I_{or} = –13 dB	1. Total P-CPICH_E_c/I_{or} = –10 dB
P-CPICH (antenna 2)	P-CPICH_E_{c2}/I_{or} = –13 dB	
P-CCPCH (antenna 1)	P-CCPCH_Ec_1/I_{or} = –15 dB	1. STTD applied 2. Total P-CCPCH_Ec/I_{or} = –12 dB
P-CCPCH (antenna 2)	P-CCPCH_Ec_2/I_{or} = –15 dB	
SCH (antenna 1 / 2)	SCH_E_c/I_{or} = –12 dB	1. TSTD applied. 2. This power shall be divided equally between Primary and Secondary Synchronous channels
PICH (antenna 1)	PICH_E_{c1}/I_{or} = –18 dB	1. STTD applied 2. Total PICH_E_c/I_{or} = –15 dB
PICH (antenna 2)	PICH_E_{c2}/I_{or} = –18 dB	
DPCH	Test dependent power	1. STTD applied 2. Total power from both antennas
OCNS	Necessary power so that total transmit power spectral density of Node B (I_{or}) adds to one	1. This power shall be divided equally between antennas 2. OCNS interference consists of 16 dedicated data channels as specified in Table E.3.6.
NOTE 1: For dynamic power correction required to compensate for the presence of transient channels, e.g. control channels, a subset of the DPCH channels may be used. NOTE 2: Power levels are based on the assumption that multipath propagation conditions and noise source representing interference from other cells Ioc are turned on after the call-set-up phase.		

3GPP TSG-T1 Meeting #26 **Tdoc ⌘ T1-050234**
Bangalore, India, 31st January - 4th February 2005

CR-Form-v7.1

CHANGE REQUEST

⌘	**34.121**	**CR**	**488**	⌘ **rev**	**-**	⌘	Current version:	**5.6.0**	⌘

*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 25.212 to reference list		
Source:	⌘	Spirent Communications		
Work item code:	⌘	TEI	***Date:*** ⌘	24/01/05
Category:	⌘	**D**	***Release:*** ⌘	Rel-5

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

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

Reason for change:	⌘	Reference to 25.212 in test case 8.6.2.1 not included on reference list
Summary of change:	⌘	Technical specification 25.212 added as reference [31]
Consequences if not approved:	⌘	Referencing of 25.212 will be incomplete and could lead to confusion.

Clauses affected:	⌘	2, 8.6.2.1.2			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This CR is applicable to UE's supporting Rel-99 or later.			

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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.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document.

- For a Release 1999 UE, references to 3GPP documents are to version 3.x.y.

- For a Release 4 UE, references to 3GPP documents are to version 4.x.y.

- For a Release 5 UE, references to 3GPP documents are to version 5.x.y.

[1] 3GPP TS 25.101 "UE Radio transmission and reception (FDD)".

[2] 3GPP TS 25.133 "Requirements for Support of Radio Resource Management (FDD)".

[3] 3GPP TS 34.108 "Common Test Environments for User Equipment (UE) Conformance Testing".

[4] 3GPP TS 34.109 "Terminal logical test interface; Special conformance testing functions".

[5] 3GPP TS 25.214 "Physical layer procedures (FDD)".

[6] 3GPP TR 21.905 "Vocabulary for 3GPP Specifications".

[7] 3GPP TR 25.990 "Vocabulary".

[8] 3GPP TS 25.331: "Radio Resource Control (RRC); Protocol Specification".

[9] 3GPP TS 25.433 "UTRAN Iub Interface NBAP Signalling".

[10] ITU-R Recommendation SM.329: "Spurious emissions".

[11] 3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode".

[12] 3GPP TS 25.303: "Interlayer Procedures in Connected Mode".

[13] 3GPP TS 25.321: "Medium Access Control (MAC) protocol specification".

[14] 3GPP TS 25.213: "Spreading and modulation (FDD)".

[15] 3GPP TS 25.223: "Spreading and modulation (TDD)".

[16] ETSI ETR 273-1-2: "Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measuremement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".

[17] 3GPP TR 25.926: "UE Radio Access Capabilities".

[18] 3GPP TR 21.904: "UE capability requirements".

[19] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".

[20] 3GPP TS 05.08 (R99): "Technical Specification Group GSM/EDGE Radio Access Network; Radio subsystem link control".

[21] 3GPP TS 34.123-1: "User Equipment (UE) Conformance Specification; Part 1: Protocol Conformance Specification".

[22] 3GPP TS 25.215: "Physical Layer – Measurements (FDD)".

[23] 3GPP TS 25.101 "UE Radio transmission and reception (FDD), Release 5".

[24] 3GPP TR 34.902 " Derivation of test tolerances for multi-cell Radio Resource Management (RRM) conformance tests ".

[25] 3GPP TS 51.010-1: "Mobile Station (MS) conformance specification; Part 1: Conformance specification ".

[26] 3GPP TS 25.307 "Requirements on UEs supporting a release independent frequency band".

[27] ITU-T recommendation O.153: "Basic parameters for the measurement of error performance at bit rates below the primary rate".

[28] 3GPP TS 05.05 (R99): "Technical Specification Group GSM/EDGE Radio Access Network; Radio transmission and reception".

[29] 3GPP TS 45.005 (Rel-4 and later releases): "Technical Specification Group GSM/EDGE Radio Access Network; Radio transmission and reception".

[30] 3GPP TS 45.008 (Rel-4 and later releases): "Technical Specification Group GSM/EDGE Radio Access Network; Radio subsystem link control".

[31] 3GPP TS 25.212: "Multiplexing and channel coding (FDD)".

<unchanged sections skipped>

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 $T_{\text{identify\_inter}}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{\text{Measurement\_Period Inter}}$ provided the timing to that cell has not changed more than +/-32 chips while transmission gap has not been available and the L3 filter has not been used.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.3 and A.8.2.1.

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January - 4th February 2005

Tdoc ⌘ T1-050235

CR-Form-v7.1

CHANGE REQUEST

⌘	34.121	CR	489	⌘ rev	-	⌘	Current version:	5.6.0	⌘

*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 fading case 8 for HSDPA testing		
Source:	⌘	Spirent Communications		
Work item code:	⌘	TEI	***Date:*** ⌘	24/01/05
Category:	⌘	**D**	***Release:*** ⌘	Rel-5

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

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

Reason for change:	⌘	Fading Case 8 for HSDPA CGI testing not included in annex D.
Summary of change:	⌘	Table D.2.2.1B added. Content of table is from 25.101 v5.13 (DEC04).
Consequences if not approved:	⌘	Fading case 8 will remain undefined.

Clauses affected:	⌘	D.2.2			
		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This CR is applicable to UE's supporting Rel-99 or later.			

How to create CRs using this form:

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

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

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

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

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

D.1 General

D.2 Propagation Conditions

D.2.1 Static propagation condition

The propagation for the static performance measurement is an Additive White Gaussian Noise (AWGN) environment. No fading and multi-paths exist for this propagation model.

D.2.2 Multi-path fading propagation conditions

Table D.2.2.1 shows propagation conditions that are used for the performance measurements in multi-path fading environment. All taps have classical Doppler spectrum.

Table D.2.2.1: Propagation conditions for multi-path fading environments

Case 1, speed 3km/h		Case 2, speed 3 km/h		Case 3, speed 120 km/h		Case 4, speed 3 km/h		* Case 5, speed 50 km/h		Case 6, speed 250 km/h	
Relative Delay [ns]	Average Power [dB]	Relative Delay [ns]	Average Power [dB]	Relative Delay [ns]	Average Power [dB]	Relative Delay [ns]	Average Power [dB]	Relative Delay [ns]	Average Power [dB]	Relative Delay [ns]	Average Power [dB]
0	0	0	0	0	0	0	0	0	0	0	0
976	-10	976	0	260	-3	976	0	976	-10	260	-3
		20000	0	521	-6					521	-6
				781	-9					781	-9

NOTE: Case 5 is only used in Requirements for support of RRM.

Table D.2.2.1A shows propagation conditions that are used for HSDPA performance measurements in multi-path fading environment.

Table D.2.2.1A: Propagation Conditions for multi-path fading environments for HSDPA

ITU Pedestrian A Speed 3km/h (PA3)		ITU Pedestrian B Speed 3km/h (PB3)		ITU vehicular A Speed 30km/h (VA30)		ITU vehicular A Speed 120km/h (VA120)	
Relative Delay [ns]	**Relative Mean Power [dB]**	**Relative Delay [ns]**	**Relative Mean Power [dB]**	**Relative Delay [ns]**	**Relative Mean Power [dB]**	**Relative Delay [ns]**	**Relative Mean Power [dB]**
0	0	0	0	0	0	0	0
110	-9.7	200	-0.9	310	-1.0	310	-1.0
190	-19.2	800	-4.9	710	-9.0	710	-9.0
410	-22.8	1200	-8.0	1090	-10.0	1090	-10.0
		2300	-7.8	1730	-15.0	1730	-15.0
		3700	-23.9	2510	-20.0	2510	-20.0

Table D.2.2.1B shows propagation conditions that are used for CQI test in multi-path fading

Table D.2.2.1B: Propagation Conditions for CQI test in multi-path fading

Case 8, speed 30km/h	
Relative Delay [ns]	Relative mean Power [dB]
0	0
976	-10

D.2.3 Moving propagation conditions

The dynamic propagation conditions for the test of the baseband performance are non fading channel models with two taps. The moving propagation condition has two taps, one static, Path0, and one moving, Path1. The time difference between the two paths is according Equation D.2.3.1. The taps have equal strengths and equal phases.

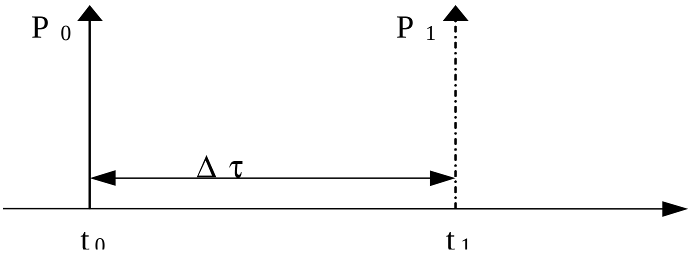

Figure D.2.3.1: The moving propagation conditions

$$\Delta\tau = B + \frac{A}{2}\left(1 + \sin(\Delta\omega \cdot t)\right)$$ **Equation D.2.3.1**

The parameters in the equation are shown in.

A	5 μs
B	1 μs
Δω	$40 \cdot 10^{-3}\ s^{-1}$

D.2.4 Birth-Death propagation conditions

The dynamic propagation conditions for the test of the baseband performance is a non fading propagation channel with two taps. The moving propagation condition has two taps, Path1 and Path2 while alternate between 'birth' and 'death'. The positions the paths appear are randomly selected with an equal probability rate and are shown in figure D.2.4.1.

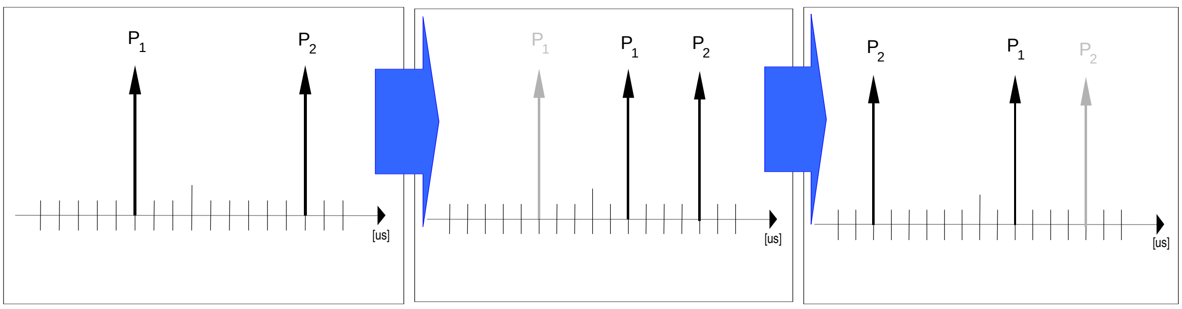

Figure D.2.4.1: Birth death propagation sequence

NOTE1: Two paths, Path1 and Path2 are randomly selected from the group [-5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5] μs. The paths have equal strengths and equal phases.

NOTE 2: After 191 ms, Path1 vanishes and reappears immediately at a new location randomly selected from the group [-5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5] µs but excludes the point Path2.

NOTE 3: After additional 191 ms, Path2 vanishes and reappears immediately at a new location randomly selected from the group [-5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5] µs but excludes the point Path1.

NOTE 4: The sequence in 2) and 3) is repeated.

3GPP TSG-T1 Meeting #26 **Tdoc ⌘T1-050308**
Bangalore, India, 31st Jan – 4th Feb 2005

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CHANGE REQUEST

⌘	34.121	CR	490	⌘rev	-	⌘	Current version:	5.6.0	⌘

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

Title:	⌘	Measurement configuration setup information		
Source:	⌘	NEC		
Work item code:	⌘	TEI	***Date:*** ⌘	18/01/2005
Category:	⌘	F	***Release:*** ⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*	

Reason for change:	⌘	Clause 4A.2 currently does not mention TS 34.108 clause 6.1.4 regarding system information elements for cells other than cell 1. Some measurements are configured by system information defined in TS 34.108. Other measurements are configured by Measurement Control messages defined in the test cases. This CR adds text into clause 4A explaining where to find information on measurement configurations.
Summary of change:	⌘	- Clarification in clause 4A.2 that system information for cells other than cell 1 is defined in TS 34.108 clause 6.1.4. - Addition of text into clause 4A.4 explaining where to find information on measurement configurations.
Consequences if not approved:	⌘	Specification might be misinterpreted.

Clauses affected:	⌘	4A.2, 4A.4				
		Y	**N**			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	Appliable for terminals supporting R99 and later.				

How to create CRs using this form:

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

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

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

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

4A Reference Conditions

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

4A.1 Generic setup procedures

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

4A.2 System information

The reference system information used for test cases specified in this document is defined in TS 34.108 [3] clauses 6.1.0a (Default Master Information Block and Scheduling Block messages) and 6.1.0b (Default System Information Block Messages). For cells other than cell 1 the difference in information elements is defined in TS 34.108 [3] clause 6.1.4. For the generic setup procedures defined in TS 34.108 [3] clause 7.3 some SIB elements override those specific SIB elements from TS 34.108 [3] clause 6.1.0b. Annex I in the present document overwrites specific elements in the Master Information Block and Scheduling Block messages compared to TS 34.108 [3] clause 6.1.0a and specific SIB elements compared to TS 34.108 [3] clauses 6.1.0b and 7.3. In the test description itself specific SIB elements can be overwritten again. This leads to the following places defining Master Information Block, Scheduling Block messages and System Information Block Messages:

1. TS 34.108 [3] clauses 6.1.0a, ~~and~~ 6.1.0b and 6.1.4
2. TS 34.108 [3] clause 7.3
3. TS 34.121 Annex I
4. TS 34.121 test case description

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

4A.3 Message contents

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

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

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

2. TS 34.108 [3] clause 7.3
3. TS 34.121 Annex I
4. TS 34.121 test case description

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

4A.4 Measurement configurations

Measurement configurations defined by system information are specified in TS 34.108 [3]. System Information Block type 11 (SIB 11) configures measurements for cell 1 according to TS 34.108 [3] clause 6.1.0b. See TS 34.108 [3] clause 6.1.4 for the difference in message contents of SIB 11 (FDD) for other cells used in the test. SIB 12 is specified in TS 34.108 [3] clause 6.1.0b, but is currently not used to configure measurements.

Some modifications to specific information elements in SIB 11 are defined in TS 34.121 Annex I or in the test description itself. In this case the priority defined in clause 4A.2 shall be applied.

Note: Currently SIB 11 in TS 34.108 [3] configures Intra-frequency measurement system information to use "Intra-frequency measurement identity=1" (default value), "Intra-frequency measurement identity =CPICH RSCP" with events 1a, 1b and 1c. The Inter-frequency measurement system information and the Inter-RAT measurement system information do not configure measurement identities. Traffic volume measurement system information is not present.

In many test cases the measurement identity as configured by SIB 11 is reused and the Measurement Control message will "Modify" the Measurement Identity configured in SIB 11.

In some test cases additional measurements are used. Then the Measurement Control message will "Setup" a new Measurement Identity with the default value for that measurement quantity as specified in TS 25.331 [8]. If the Measurement Control message uses "Setup" then the new Measurement Identity shall be different to already configured ones. All Inter-frequency measurements and Inter-RAT measurements are first configured by Measurement Control message using "Setup".

3GPP TSG-T1 Meeting #26 **Tdoc ⌘T1-050309**
Bangalore, India, 31. January – 4. February 2005

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CHANGE REQUEST

⌘	**34.121**	**CR**	**491**	⌘**rev**	**-**	⌘ Current version:	**5.6.0** ⌘

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

Title:	⌘	Addition of uncertainties and test tolerances to TC 7.7.3		
Source:	⌘	Nokia		
Work item code:	⌘	TEI	***Date:*** ⌘	02/02/2005
Category:	⌘	**F**	***Release:*** ⌘	R5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Test case 7.7.3 is lacking test system uncertainties and test tolerances.
Summary of change:	⌘	This CR will add test system uncertainties to Annex F Table F.1.4. Test tolerance is defined to be zero in this test case. The justification for that is presented in related discussion (T1-050069). Test tolerance zero is added in Tables F.2.3 and F.4.3.
Consequences if not approved:	⌘	The test case will remain incomplete.

Clauses affected:	⌘	F.1.4, F.2.3, 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 R99 and later releases.			

How to create CRs using this form:

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

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

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

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

F.1.4 Performance requirement

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

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
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

NEXT CHANGED SECTION

F.2.3 Performance requirements

Table F.2.3: Test Tolerances for Performance Requirements.

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

NEXT CHANGED SECTION

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

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)
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:

3GPP TSG-T1 Meeting #26 **Tdoc ⌘T1-050313**
Bangalore, India 31st January – 4th Febuary, 2005

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CHANGE REQUEST

⌘	**34.121**	**CR**	**493**	⌘**rev**	**-**	⌘	Current version:	**5.6.0**	⌘

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

Title:	⌘	CR to 34.121: Changes to 7.12: Detection of Acquisition Indicator
Source:	⌘	Motorola
Work item code:	⌘	TEI
Date:	⌘	31/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

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

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

Reason for change:	⌘	The current PAGING TYPE 1 message in test case 7.12 need to be corrected based on core specification. As defined in 25.331 section 10.3.3.23, when the “used paging identity” is for idle mode UEs the parameter should be “CN identity” and not “UTRAN identity”.
Summary of change:	⌘	1) The state in which the PAGING TYPE 1 message is sent in this test case is idle mode. So, the statement is added to test procedures 3) & 9) as “SS activates continuous paging and sends the Paging type 1 message in idle mode”. This is added so that there is no misinterpretation. 2) Since it is clarified that the PAGING TYPE 1 message is sent in idle mode the “used paging identity” in procedures 3) & 9) have to be corrected. Therefore, “UTRAN identiy” is changed to “CN identity” and “U-RNTI” is changed to “IMSI”.
Consequences if not approved:	⌘	The Paging type 1 message with “used paging identity” being set to UTRAN identity is incorrect which could lead to a good UE failing test 7.12.

Clauses affected:	⌘	7.12			
		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 Release 4 and later.			

7.12 Detection of Acquisition Indicator (AI)

7.12.1 Definition and applicability

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

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

7.12.2 Minimum requirements

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

Table 7.12.1: Parameters for AI detection

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

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

Table 7.12.2: Test requirements for AI detection

Test Number	Pfa	1-Pd
1	0.01	0.01

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

7.12.3 Test purpose

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

7.12.4 Method of test

7.12.4.1 Initial conditions

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

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

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

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

Table 7.12.3 UE parameters for AI test

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

Table 7.12.4 SS parameters for AI test

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

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

7.12.4.2 Procedure

1) The UE is switched on.

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

3) SS activates continuous paging and sends the Paging type 1 message in idle mode with used paging identity being a ~~UTRAN identity~~ CN identity and including the UE's assigned ~~U-RNTI~~IMSI.

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

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

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

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

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

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

10) UE starts transmitting RACH preambles.

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

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

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

7.12.5 Test requirements

The test parameters are specified in tables 7.12.1, 7.12.3 and 7.12.4. Probability of false detection (Pfa) tested in steps 5-6 and probability of missed AI (1-Pd) tested in step 12 shall not exceed the values specified in Table 7.12.2.

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.

3GPP TSG-T1 Meeting #26 **Tdoc ⌘T1-050315**
Bangalore, India 31st January – 4th Febuary, 2005

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**494**	⌘ **rev**	**-**	⌘	Current version:	**5.6.0**	⌘

*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: Changes to 8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)	
Source:	⌘	Motorola	
Work item code:	⌘	TEI	***Date:*** ⌘ 31/01/2005
Category:	⌘	**F**	***Release:*** ⌘ Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	The current value of T4 is not aligned with the core specification in 25.133 v3.19.0
Summary of change:	⌘	Changed the value of T4 in table 8.6.1.2.2: General test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions from T4=5 to T4=4.
Consequences if not approved:	⌘	The test implementation will not match the requirements of 25.133 and possible a test system may incorrectly fail a good UE.

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 is applicable for UE's supporting Rel-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	~~5~~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.																			

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 seconds from the beginning of T4, the SS shall switch the power settings from T5 to T6 in table 8.6.1.2.5.

18) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T6 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

19) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

20) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

21) After 10 seconds from the beginning of T6, the UE is switched off.

22) Repeat steps 1-21 until the confidence level according to annex F.6.2 is achieved.

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

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

MEASUREMENT REPORT message for Intra frequency test cases

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

8.6.1.2.5 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 TSG-T1 Meeting #26
Bangalore, India, 31st Jan - 4th Feb 2005

Tdoc ⌘T1-050319

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	496	⌘ rev	-	⌘	Current version:	5.6.0	⌘

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

Title:	⌘	Clarification of reference value for *T Reconfirm Abort* Parameter in Inter-Rat Test Case 8.3.4		
Source:	⌘	Intel, NEC		
Work item code:	⌘	TEI	***Date:*** ⌘	31/01/2005
Category:	⌘	**F**	***Release:*** ⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	The value of *T reconfirm abort* in TS25.133, clause 8.1.2.5.2.2 table 8.8 is different compared to TS34.121, clause 8.3.4.4.1 table 8.3.4.3. The value in TS34.121 is the same as in TS25.133 table A.5.0D.
Summary of change:	⌘	Correct the reference for the value of *T reconfirm abort* in TS34.121, table 8.3.4.3, aligning with TS25.133.
Consequences if not approved:	⌘	Misunderstanding can be caused regarding the correct value of *T reconfirm abort*

Clauses affected:	⌘	8.3.4.4.1				
		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.				

8.3.4 Inter-system Handover from UTRAN FDD to GSM

8.3.4.1 Definition and applicability

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

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

8.3.4.2 Minimum requirement

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

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

Table 8.3.4.1: FDD/GSM handover - handover delay

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

Table 8.3.4.2: FDD/GSM handover - interruption time

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

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

8.3.4.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.4.4 Method of test

8.3.4.4.1 Initial conditions

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

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

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	~~Taken from TS 25.133 [2] 8.1.2.5.2.2 table 8.8.~~ 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)	
-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 Message Type Cell Description - Network Colour Code - Base station Colour Code - BCCH Carrier Number	0000 00101011 1 5 1	
Channel Description 2 - Channel Type and TDMA offset - Timeslot Number	 TCH/F + ACCHs Chosen arbitrarily by the test house, but not Zero.	
- Training Sequence Code	Chosen arbitrarily by the test house.	
- Hopping	Single RF channel.	
- ARFCN	1	
Handover Reference		
- Handover Reference Value Power Command and ACCESS Type - ATC - EPC_mode - FPC - EPC_FPC - Power level Synchronization Indication Channel Mode All other information elements	Chosen arbitrarily by the test house. 0 0 0 0 Chosen arbitrarily by the test house. Not present. speech full rate or half rate version 1 Not present.	 REL-5 R99 and REL-4 only REL-5

MEASUREMENT REPORT message for Inter-RAT test cases

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

8.3.4.5 Test requirements

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

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

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

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

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan - 4th Feb 2005

Tdoc ⌘T1-050321

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**497**	⌘ **rev**	**-**	⌘	Current version:	**5.6.0**	⌘

*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 RRM TC 8.2.3			
Source:	⌘	Intel			
Work item code:	⌘	TEI	***Date:***	⌘	31/01/2005
Category:	⌘	**F**	***Release:***	⌘	Rel-5
		Use one of the following categories: ***F** (correction)* ***A** (corresponds to a correction in an earlier release)* ***B** (addition of feature),* ***C** (functional modification of feature)* ***D** (editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.			*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Additional information is required while reselecting back from GSM cell to UTRAN cell.
Summary of change:	⌘	Adding a referance to GSM default messages, and exceptions to the default messages, to allow the UE reselecting back to the UTRAN cell.
Consequences if not approved:	⌘	The UE could not be able to reselect back to the UTRAN cell, and therefore test could not be accomplished.

Clauses affected:	⌘	8.2.3.1, 8.2.3.2				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR applies to release 99 and later releases				

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		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		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.

3GPP TSG-T1 Meeting #26 **Tdoc ⌘T1-050322**
Bangalore India, 31st January – 4th February

CR-Form-v7

CHANGE REQUEST

⌘ **34.121**	**CR 498**	⌘ **rev** **-** ⌘	Current version:	**5.6.0**	⌘

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

Title:	⌘ Correction to "Reporting cell status" in Measurement Control Messages
Source:	⌘ Anritsu
Work item code:	⌘
Date:	⌘ 2/1/2005
Category:	⌘ **F**
Release:	⌘ Rel-5

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

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

Reason for change:	⌘ According to TS25.331: 8.6.7.9, if "Reporting cell is status" is "Not Present" in Measurement Control Message, Measurement Report Message will be sent with no "Measured Results".
Summary of change:	⌘ "Reporting cell status" is configured in Measurement Control Message.
Consequences if not approved:	⌘ UE will not be tested properly.

Clauses affected:	⌘ 8.6.1.1, 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			
		Y	**N**	
Other specs affected:	⌘		**X**	Other core specifications ⌘
			X	Test specifications
			X	O&M Specifications
Other comments:	⌘ This CR applies for Rel-99 and later releases.			

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

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

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

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

8.6 UE Measurements Procedures

8.6.1 FDD intra frequency measurements

8.6.1.1 Event triggered reporting in AWGN propagation conditions (R99)

8.6.1.1.1 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 Release 99 FDD UE.

8.6.1.1.2 Minimum requirements

The UE shall be able to identify and decode the SFN of a new detectable cell belonging to the monitored set within

$$\mathrm{T}_{\text{identify intra}} = Max\left\{800, \mathrm{T}_{\text{basic identify FDD, intra}} \cdot \frac{\mathrm{T}_{\text{Measurement Period, Intra}}}{\mathrm{T}_{\text{Intra}}}\right\} ms$$

A cell shall be considered detectable when CPICH Ec/Io $\geq$ -20 dB, SCH_Ec/Io $\geq$ -20 dB for at least one channel tap and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

In the CELL_DCH state the measurement period for intra frequency measurements is 200 ms. When no transmission gap pattern sequence is activated, the UE shall be capable of performing CPICH measurements for 8 identified intra-frequency cells of the monitored set and/or the active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 200 ms. When one or more transmission gap pattern sequences are activated, the UE shall be capable of performing CPICH measurements for at least $Y_{\text{measurement intra}}$ cells , where $Y_{\text{measurement intra}}$ is defined in the following equation. The measurement accuracy for all measured cells shall be as specified in the sub-clause 9.1.1 and 9.1.2 of TS 25.133 [2]. If the UE has identified more than $Y_{\text{measurement intra}}$ cells, the UE shall perform measurements of all identified cells but the reporting rate of CPICH measurements of cells from UE physical layer to higher layers may be decreased.

$$\mathrm{Y}_{\text{measurement intra}} = Floor\left\{X_{\text{basic measurement FDD}} \cdot \frac{\mathrm{T}_{\text{Intra}}}{\mathrm{T}_{\text{Measurement Period, Intra}}}\right\} \text{ cells}$$

where

$X_{\text{basic measurement FDD}}$ = 8 (cells)

$T_{\text{Measurement\_Period Intra}}$ = 200 ms. The measurement period for Intra frequency CPICH measurements.

T_{Intra} : This is the minimum time that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing.

$T_{\text{basic\_identify\_FDD, intra}}$ = 800 ms. This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.

The event triggered measurement reporting delay, on cells belonging to monitored set, measured without L3 filtering, shall be less than the above defined $T_{\text{identify intra}}$ defined above.

If a cell, belonging to monitored set, which the UE has identified and measured at least once over the measurement period, becomes undetectable for a period < 5 seconds and then the cell becomes detectable again and triggers an event, the measurement reporting delay shall be less than $T_{\text{Measurement\_Period Intra}}$ ms provided the timing to that cell has not changed more than +/-32 chips, the UE CPICH measurement capabilities defined above are valid and L3 filtering has not been used. When L3 filtering is used an additional delay can be expected.

If a cell belonging to monitored set has been detectable at least for the time period $T_{identify\_intra}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement\_Period\ Intra}$ when the L3 filter has not been used and the UE CPICH measurement capabilities defined above are valid.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.1.

8.6.1.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.1.4 Method of test

8.6.1.1.4.1 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 tables 8.6.1.1.1 to 8.6.1.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used and that CPICH Ec/Io and SFN-CFN observed time difference shall be reported together with Event 1A.. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. During time duration T1, the UE shall not have any timing information of cell 2.

Table 8.6.1.1.1: 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		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		24	NOTE: See Annex I for cell information.
T1	s	5	
T2	s	5	
T3	s	1	
T4	s	5	

Table 8.6.1.1.2: Cell specific test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Cell 1				Cell 2			
		T1	T2	T3	T4	T1	T2	T3	T4
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		Note 1	
OCNS		Note 2				-0.941		Note 2	
$\hat{I}_{or}/I_{oc}$	dB	0	6.97	6.97	0	-Infinity	5.97	5.97	-Infinity
$\hat{I}_{or}$ (Note 3)	dBm	-70	-63.03	-63.03	-70	-Infinity	-64.03	-64.03	-Infinity
I_{oc}	dBm/3.84 MHz	-70							
CPICH_Ec/Io	dB	-13	-13	-13	-13	-Infinity	-14	-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 : 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.

8.6.1.1.4.2 Procedure

1. The RF parameters are set up according to T1 in table 8.6.1.1.3, with cell 1 active.
2. The UE is switched on.
3. A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
4. SS shall transmit a MEASUREMENT CONTROL message.
5. After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in table 8.6.1.1.3.
6. UE shall transmit a MEASUREMENT REPORT message triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
7. 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 the RRC procedure delay prior to the beginning of T3.
8. After 6 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T4 in table 8.6.1.1.3.
9. UE shall transmit a MEASUREMENT REPORT message triggered by event 1B. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
10. After 5 seconds from the beginning of T4, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
11. Repeat steps 1-10 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	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	2
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	1
-Reporting interval	0 ms (Note 2)
-Reporting cell status	~~Not Present~~
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells
-Reporting Range Constant	3 dB
-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

Information Element/Group name	Value/Remark
-Amount of reporting -Reporting interval -Reporting cell status - CHOICE reported cell - Maximum number of reported cells	Not Present Not present ~~Not Present~~ 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.

{Unchanged Sections are clipped here}

8.6.1.1 A Event triggered reporting in AWGN propagation conditions (Rel-4 and later)

8.6.1.1 A.1 Definition and applicability

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

The requirements and this test apply to the Rel-4 and later FDD UE.

8.6.1.1 A.2 Minimum requirements

The UE shall be able to identify and decode the SFN of a new detectable cell belonging to the monitored set within

$$T_{\text{identify intra}} = Max\left\{800, T_{\text{basic identify FDD, intra}} \cdot \frac{T_{\text{Measurement Period, Intra}}}{T_{\text{Intra}}}\right\} ms$$

A cell shall be considered detectable when CPICH Ec/Io $\geq$ -20 dB, SCH_Ec/Io $\geq$ -20 dB for at least one channel tap and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

In the CELL_DCH state the measurement period for intra frequency measurements is 200 ms. When no transmission gap pattern sequence is activated, the UE shall be capable of performing CPICH measurements for 8 identified intra-frequency cells of the monitored set and/or the active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 200 ms. When one or more transmission gap pattern sequences are activated, the UE shall be capable of performing CPICH measurements for at least $Y_{\text{measurement intra}}$ cells , where $Y_{\text{measurement intra}}$ is defined in the following equation. The measurement accuracy for all measured cells shall be as specified in the sub-clause 9.1.1 and 9.1.2 of TS 25.133 [2]. If the UE has identified more than $Y_{\text{measurement intra}}$ cells, the UE shall perform measurements of all identified cells but the reporting rate of CPICH measurements of cells from UE physical layer to higher layers may be decreased.

$$Y_{\text{measurement intra}} = Floor\left\{X_{\text{basic measurement FDD}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra}}}\right\} \text{ cells}$$

where

$X_{basic\ measurement\ FDD}$ = 8 (cells)

$T_{Measurement\_Period\ Intra}$ = 200 ms. The measurement period for Intra frequency CPICH measurements.

T_{Intra} : This is the minimum time that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing.

$T_{basic\_identify\_FDD,\ intra}$ = 800 ms. This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.

The event triggered measurement reporting delay, on cells belonging to monitored set, measured without L3 filtering, shall be less than the above defined $T_{identify\ intra}$ defined above.

If a cell, belonging to monitored set, which the UE has identified and measured at least once over the measurement period, becomes undetectable for a period < 5 seconds and then the cell becomes detectable again and triggers an event, the measurement reporting delay shall be less than $T_{Measurement\_Period\ Intra}$ ms provided the timing to that cell has not changed more than +/-32 chips, the UE CPICH measurement capabilities defined above are valid and L3 filtering has not been used. When L3 filtering is used an additional delay can be expected.

If a cell belonging to monitored set has been detectable at least for the time period $T_{identify\_intra}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement\_Period\ Intra}$ when the L3 filter has not been used and the UE CPICH measurement capabilities defined above are valid.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.1.

8.6.1.1 A.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.1 A.4 Method of test

8.6.1.1 A.4.1 Initial conditions

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

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

The test parameters are given in tables 8.6.1.1 A.1 to 8.6.1.1 A.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. During time duration T1, the UE shall not have any timing information of cell 2.

Table 8.6.1.1 A.1: General test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24	NOTE: See Annex I for cell information
T1	s	5	
T2	s	5	
T3	s	5	

Table 8.6.1.1 A.2: Cell specific test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
CPICH_Ec/Ior	dB	-10			-10		
PCCPCH_Ec/Ior	dB	-12			-12		
SCH_Ec/Ior	dB	-12			-12		
PICH_Ec/Ior	dB	-15			-15		
DPCH_Ec/Ior	dB	-17			N/A		
OCNS_Ec/Ior	dB	-1.049			-0.941		
$\hat{I}_{or}/I_{oc}$	dB	0	6.97	0	-Infinity	5.97	-Infinity
$\hat{I}_{or}$ *(Note 1)*	dBm	-70	-63.03	-70	-Infinity	-64.03	-Infinity
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/Io	dB	-13	-13	-13	-Infinity	-14	-Infinity
Propagation Condition		AWGN					
Note 1: The nominal 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.							

8.6.1.1 A.4.2 Procedure

1. The RF parameters are set up according to T1 in table 8.6.1.1 A.3.
2. The UE is switched on.
3. A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
4. SS shall transmit a MEASUREMENT CONTROL message.
5. After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in table 8.6.1.1 A.3.
6. UE shall transmit a MEASUREMENT REPORT message triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
7. After 5 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3 in table 8.6.1.1 A.3.
8. UE shall transmit a MEASUREMENT REPORT message triggered by event 1B. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
9. After 5 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
10. Repeat steps 1-9 according to Annex F.6.2 Table 6.2.8.

Specific Message Contents

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

MEASUREMENT CONTROL message:

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

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

MEASUREMENT REPORT message for Intra frequency test cases

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

{Unchanged Sections are clipped here}

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	5	
T5	s	1	
T6	s	10	

Table 8.6.1.2.3: Cell specific test parameters for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit	Cell 1						Cell 2						Cell3					
		T1	T2	T3	T4	T5	T6	T1	T2	T3	T4	T5	T6	T1	T2	T3	T4	T5	T6
CPICH_Ec/Ior	dB	-10						-10						-10					
PCCPCH_Ec/Ior	dB	-12						-12						-12					
SCH_Ec/Ior	dB	-12						-12						-12					
PICH_Ec/Ior	dB	-15						-15						-15					
DPCH_Ec/Ior	dB	Note 1						N/A						N/A	Note 1			N/A	
OCNS_Ec/Ior	dB	Note 2						-0.941						-0.941	Note 2			-0.941	
$\hat{I}_{or}/I_{oc}$	dB	6.97		6.93	5.97		6.12	-Inf		9.43	6.97		7.62	5.97		6.93	-Inf		5.62
$\hat{I}_{or}$ *(Note 3)*	dBm	-78.03		-78.07	-79.03		-78.88	-Inf		-75.57	-78.03		-77.38	-79.03		-78.07	-Inf		-79.38
I_{oc}	dBm/ 3.84 MHz	-85																	
CPICH_Ec/Io	dB	-13		-16	-14		-15.5	-Inf		-13.5	-13		-14	-14		-16	-Inf		-16
Propagation Condition		AWGN																	
Note 1: The DPCH level is controlled by the power control loop Note 2 :The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or} Note 3 :The nominal 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 seconds from the beginning of T4, the SS shall switch the power settings from T5 to T6 in table 8.6.1.2.5.

18) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T6 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

19) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

20) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

21) After 10 seconds from the beginning of T6, the UE is switched off.

22) Repeat steps 1-21 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

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

MEASUREMENT CONTROL message:

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

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

MEASUREMENT REPORT message for Intra frequency test cases

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

{Unchanged Sections are clipped here}

8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)

8.6.1.2A.1 Definition and applicability

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

The requirements and this test apply to the Rel-4 and later FDD UE.

8.6.1.2A.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1A.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.2.

8.6.1.2A.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.2A.4 Method of test

8.6.1.2A.4.1 Initial conditions

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

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

The initial test parameters are given in table 8.6.1.2A.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	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 8.6.1.2A.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				N/A				N/A			
OCNS_Ec/Ior	dB	-1.049				-0.941				-0.941			
$\hat{I}_{or}/I_{oc}$	dB	6.97	6.93	5.97	6.12	-Inf	9.43	6.97	7.62	5.97	6.93	-Inf	5.62
$\hat{I}_{or}$ *(Note 1)*	dBm	-78.03	-78.07	-79.03	-78.88	-Inf	-75.57	-78.03	-77.38	-79.03	-78.07	-Inf	-79.38
I_{oc}	dBm/3.84 MHz	-85											
CPICH_Ec/Io	dB	-13	-16	-14	-15.5	-Inf	-13.5	-13	-14	-14	-16	-Inf	-16
Propagation Condition		AWGN											
Note 1: The nominal 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.													

8.6.1.2A.4.2 Procedure

1) The RF parameters are set up according to T0 in table 8.6.1.2A.4.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
4) SS shall transmit a MEASUREMENT CONTROL message.
5) 5 seconds after step4 has completed, the SS shall switch the power settings for T0 to T1 in table 8.6.1.2A.5.
6) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T1 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

7) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

8) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in table 8.6.1.2A.5.

9) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

10) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

11) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

12) After 10 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3 in table 8.6.1.2A.5.

13) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1B. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

14) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

15) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4 in table 8.6.1.2A.5.

16) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

17) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

18) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

19) After 10 seconds from the beginning of T4, the UE is switched off.

20) Repeat steps 1-19 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

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

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0 Not Present
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 1.0 0 dB Not Present 0 Not Present 0 ms Not Present 0 ms (Note 2) ~~Not Present~~ Report cell within active set and/or monitored set cells on used frequency 3
-Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger	Event 1B Active set cells and monitored set cells 3 dB Not Present 1.0 0 dB Not Present Not Present Not Present 0 ms

Information Element/Group name	Value/Remark
-Amount of reporting -Reporting interval -Reporting cell status - CHOICE reported cell - Maximum number of reported cells	Not Present 0 ms (Note 2) ~~Not Present~~ Report cell within active set and/or monitored set cells on used frequency 3
-Intra-frequency event identity -Triggering condition 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 1C Active set cells and monitored set cells Not present Not Present Not present 0 dB Not Present Not present 0 0 ms Not Present 0 ms (Note 2) ~~Not Present~~ 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.

{Unchanged Sections are clipped here}

8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition (R99)

8.6.1.3.1 Definition and applicability

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

The requirements and this test apply to the Release 99 FDD UE.

8.6.1.3.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.3.

8.6.1.3.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.3.4 Method of test

8.6.1.3.4.1 Initial conditions

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

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

The initial test parameters are given in table 8.6.1.3.4.

Table 8.6.1.3.1: Cell specific initial test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	5.870	-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 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) After 10 seconds from the beginning T2, the SS shall switch the power settings from T2 to T4.
9) 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) After 10 seconds from the beginning T4, the SS shall switch the power settings from T4 to T5.
11) 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) After 10 seconds, the UE is switched off.
13) Repeat steps 1-11 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

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

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -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) ~~Not Present~~ Report cell within active set and/or monitored set cells on used frequency 3
-Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range	Event 1B Active set cells 3 dB Not Present

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

{Unchanged Sections are clipped here}

8.6.1.3A Event triggered reporting of two detectable neighbours in AWGN propagation condition (Rel-4 and later)

8.6.1.3A.1 Definition and applicability

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

The requirements and this test apply to the Rel-4 and later FDD UE.

8.6.1.3A.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.3.

8.6.1.3A.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.3A.4 Method of test

8.6.1.3A.4.1 Initial conditions

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

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

The initial test parameters are given in table 8.6.1.3A.4.

Table 8.6.1.3A.1: Cell specific initial test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	5.87	-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 8.6.1.3A2 and 8.6.1.3A.5. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used and the periodical reporting of the events is not applied. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. In the initial condition before the time T1 only Cell1 is active.

Table 8.6.1.3A.2: General test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	Ms	0	
Filter coefficient		0	
Monitored cell list size		32	NOTE: See Annex I for cell information.
T1	S	10	
T2	S	10	
T3	S	10	
T4	S	10	

Table 8.6.1.3A.3: Cell specific test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2				Cell3			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
CPICH_Ec/Ior	dB	-10				-10				-10			
PCCPCH_Ec/Ior	dB	-12				-12				-12			
SCH_Ec/Ior	dB	-12				-12				-12			
PICH_Ec/Ior	dB	-15				-15				-15			
DPCH_Ec/Ior	dB	-17				N/A				N/A			
OCNS_Ec/Ior	dB	-1.049				-0.941				-0.941			
$\hat{I}_{or}/I_{oc}$	dB	14.55	28.51	14.45	28.51	-Inf	27.51	13.95	21.51	8.05	21.51	13.95	27.51
$\hat{I}_{or}$ *(Note 1)*	dBm	-70.45	-56.49	-70.55	-56.49	-Inf	-57.49	-71.05	-63.49	-76.95	-63.49	-71.05	-57.49
I_{oc}	dBm/3.84 MHz	-85											
CPICH_Ec/Io	dB	-11	-13	-14.5	-13	-Inf	-14.0	-15	-20	-17.5	-20	-15	-14
Propagation Condition	AWGN												
Note 1: The nominal 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.													

8.6.1.3A.4.2 Procedure

1) The RF parameters are set up according to T0 in table 8.6.1.3A.4.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
4) SS shall transmit a MEASUREMENT CONTROL message.
5) After 10 seconds from the beginning T0, the SS shall switch the power settings from T0 to T1 in 8.6.1.3A.5.
6) After a total of 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
7) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.
8) After 10 seconds from the beginning T2, the SS shall switch the power settings from T2 to T3.
9) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.
10) After 10 seconds from the beginning T3, the SS shall switch the power settings from T3 to T4.
11) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1B. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.
12) After 10 seconds, the UE is switched off.
13) Repeat steps 1-11 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

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

MEASUREMENT CONTROL message:

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

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

MEASUREMENT REPORT message for Intra frequency test cases

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

{Unchanged Sections are clipped here}

8.6.1.4 Correct reporting of neighbours in fading propagation condition (R99)

8.6.1.4.1 Definition and applicability

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

The requirements and this test apply to the Release 99 FDD UE.

8.6.1.4.2 Minimum requirements

[Editor's Note: The minimum requirements defined in TS 25.133 [2] are not completed for the release 99 test case therefore this test case is not testable and should be considered "Void" until the errors are fixed in TS 25.133.]

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.4.

8.6.1.4.3 Test purpose

To verify that the UE meets the minimum requirements and also verify that the UE performs sufficient layer 1 filtering of the measurements. The test is performed in fading propagation conditions.

8.6.1.4.4 Method of test

8.6.1.4.4.1 Initial conditions

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

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

The test parameters are given in table 8.6.1.4.1 and 8.6.1.4.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and Event 1B shall be used. The test consists of two successive time periods, each with time duration of T1 and T2 respectively.

The TTI of the uplink DCCH shall be 20ms.

Table 8.6.1.4.1: General test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	0	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	120	
Filter coefficient		0	
Monitored cell list size		24	Signalled before time T1. NOTE: See Annex I for cell information.
T1	s	200	
T2	s	201	

Table 8.6.1.4.2: Cell specific test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	-17		N/A	
OCNS_Ec/Ior	dB	-1.049		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	7.29	3.29	3.29	7.29
I_{oc}	dBm/3.84 MHz	-70			
CPICH_Ec/Io	dB	-12	-16	-16	-12
Propagation Condition	Case 5 as specified in table D.2.2.1				

8.6.1.4.4.2 Procedure

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

2) The UE is switched on.

3) A call is set up in AWGN conditions, according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) 5 seconds after step4 has completed, the fading simulator is switched on, configured with the settings described in the tables above at the beginning of T1.

6) UE shall start transmitting MEASUREMENT REPORT messages triggered by event 1A.

7) SS shall count the reports. The number of received event 1A reports shall be less than 60. If the SS fails to receive less than 60 event 1A reports, then then a failure is recorded. If the SS receives number of event 1A reports within the required limit, the number of succesfull tests is increased by one.

8) After 200 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

9) UE shall start transmitting MEASUREMENT REPORT messages triggered by event 1B.

10) During the first 1s of time period T2 no event reports shall be counted.

11) After the first 1s SS shall start counting the reports. The number of received event 1B reports shall be less than 60. If the SS receives number of event 1B reports within the required limit, the number of succesfull tests is increased by one.

12) After 201 seconds from the beginning of T2, the UE is switched off.

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

Specific Message Contents

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

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0
-message authentication code -RRC message sequence number	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity (10.3.7.41)	Intra-frequency measurement Not Present 0 FDD CPICH_Ec/N0
-Reporting quantities for active set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE report criteria -Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event	Not Present Not Present Intra-frequency measurement reporting criteria 2
-Intra-frequency event identity -Triggering condition 2 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status - CHOICE reported cell - Maximum number of reported cells	Event 1A Active set cells and monitored set cells 0 dB Not Present 1.0 0 dB Not Present 0 Not Present 120 ms Not present 0 ms (Note 2) ~~Not Present~~ Report cell within active set and/or monitored set cells on used frequency 3
-Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range	Event 1B Active set cells and monitored set cells 0 dB Not Present

Information Element/Group name	Value/Remark
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	120 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	~~Not Present~~
- 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.

{Unchanged Sections are clipped here}

8.6.1.4A Correct reporting of neighbours in fading propagation condition (Rel-4 and later)

8.6.1.4A.1 Definition and applicability

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

The requirements and this test apply to the Release 4 and later FDD UE.

8.6.1.4A.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.4.

8.6.1.4A.3 Test purpose

To verify that the UE meets the minimum requirements and also verify that the UE performs sufficient layer 1 filtering of the measurements. The test is performed in fading propagation conditions.

8.6.1.4A.4 Method of test

8.6.1.4A.4.1 Initial conditions

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

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

The test parameters are given in table 8.6.1.4A.1 and 8.6.1.4A.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and Event 1B shall be used. The test consists of two successive time periods, each with time duration of T1 and T2 respectively.

The TTI of the uplink DCCH shall be 20ms.

Table 8.6.1.4A.1: General test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	0	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	120	
Filter coefficient		0	
Monitored cell list size		24	Signalled before time T1. NOTE: See Annex I for cell information.
T1	s	200	
T2	s	201	

Table 8.6.1.4A.2: Cell specific test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	-17		N/A	
OCNS_Ec/Ior	dB	-1.049		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	7.29	3.29	3.29	7.29
$\hat{I}_{or}$ *(Note 1)*	dBm	-62.71	-66.71	-66.71	-62.71
I_{oc}	dBm/3.84 MHz	-70			
CPICH_Ec/Io	dB	-12	-16	-16	-12
Propagation Condition	Case 5 as specified in table D.2.2.1				
Note 1: The nominal 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.					

8.6.1.4A.4.2 Procedure

1) The RF parameters are set up according to T1.
2) The UE is switched on.
3) A call is set up in AWGN conditions, according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
4) SS shall transmit a MEASUREMENT CONTROL message.
5) 5 seconds after step4 has completed, the fading simulator is switched on, configured with the settings in table 8.6.1.4A.3 at the beginning of T1.
6) UE shall start transmitting MEASUREMENT REPORT messages triggered by event 1A.

7) SS shall count the reports. The number of received event 1A reports shall be less than 60. If the SS fails to receive less than 60 event 1A reports, then a failure is recorded. If the SS receives number of event 1A reports within the required limit, the number of succesfull tests is increased by one.

8) After 200 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

9) UE shall start transmitting MEASUREMENT REPORT messages triggered by event 1B.

10) During the first 1s of time period T2 no event reports shall be counted.

11) After the first 1s SS shall start counting the reports. The number of received event 1B reports shall be less than 60. If the SS receives number of event 1B reports within the required limit, the number of succesfull tests is increased by one.

12) After 201 seconds from the beginning of T2, the UE is switched off.

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

Specific Message Contents

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

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0
-message authentication code -RRC message sequence number	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity (10.3.7.41)	Intra-frequency measurement Not Present 0 FDD CPICH_Ec/N0
-Reporting quantities for active set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 TRUE (Note 1) TRUE FDD TRUE TRUE FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE report criteria -Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event	Not Present Not Present Intra-frequency measurement reporting criteria 2
-Intra-frequency event identity -Triggering condition 2 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status - CHOICE reported cell - Maximum number of reported cells	Event 1A Active set cells and monitored set cells 0 dB Not Present 1.0 0 dB Not Present 0 Not Present 120 ms Not present 0 ms (Note 2) ~~Not Present~~ Report cell within active set and/or monitored set cells on used frequency 3
-Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant	Event 1B Active set cells and monitored set cells 0 dB
-Cells forbidden to affect Reporting Range	Not Present

Information Element/Group name	Value/Remark
-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	1.0 0 dB Not Present Not Present Not Present 120 ms Not Present 0 ms (Note 2) ~~Not Present~~ 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.

CR-Form-v7

CHANGE REQUEST

⌘ **34.121**	**CR** **499**	⌘**rev**	**-**	⌘ Current version:	**5.6.0** ⌘

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

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

Title:	⌘ Correction to 8.3.1		
Source:	⌘ Anritsu		
Work item code:	⌘	***Date:*** ⌘	2/1/2005
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-5 *Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘ The configuration of DCCH BLER quality target might interfer the DTCH BLER measurement.
Summary of change:	⌘ 1) RRC CONNECTION SETUP message is introduced to configure the DCCH BLER quality target to “Not present”. 2) In some parameters of MEASUREMENT CONTROL message (step 4), the font color is changed from RED to Black.
Consequences if not approved:	⌘ 1) Good UEs may fail test. 2) The specification leads to confusion.

Clauses affected:	⌘ 8.3.1				
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘ This CR applies for Rel-99 and later releases.				

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

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

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

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

8.3.1 FDD/FDD Soft Handover

8.3.1.1 Definition and applicability

The active set update delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying soft handover to the switch off of the old downlink DPCH.

The requirements and this test apply to the FDD UE.

8.3.1.2 Minimum requirement

The active set update delay is defined as the time from when the UE has received the ACTIVE SET UPDATE message from UTRAN, or at the time stated through the activation time when to perform the active set update, to the time when the UE successfully uses the set of radio links stated in that message for power control.

The active set update delay is depending on the number of known cells referred to in the ACTIVE SET UPDATE message. A cell is known if either or both of the following conditions are true:

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

And the phase reference is the primary CPICH.

The active set update delay shall be less than 50+10*KC+100*OC ms, where

KC is the number of known cells in the active set update message.

OC is the number of cells that are not known in the active set update message.

If the UE have radio links in the active set that it can not use for data detection (due to low signal level), the UE shall at least every 150 ms search for the radio link.

The normative reference for this requirement is TS 25.133 [2] clauses 5.1.2 and A.5.1.1. The active set update delay shall be less than 60 ms in CELL_DCH state when using test parameters as given in table 8.3.1.1.1.

8.3.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.1.4 Method of test

8.3.1.4.1 Initial conditions

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

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

The test parameters are given in table 8.3.1.1.1 and 8.3.1.1.2 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A shall be used, and that CPICH Ec/Io and SFN-CFN observed time difference shall be reported together with Event 1A. The test consists of six successive time periods, with a time duration of T1, T2, T3, T4, T5 and T6 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

Table 8.3.1.1.1: General test parameters for Soft handover

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps and UL Auxiliary Measurement Channel 12.2 kbps	DL Measurement Channel as specified in clause C.3.1 UL Auxiliary Measurement Channel as specified in clause C.6.3
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range		dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting deactivation threshold			0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	5	
T2		s	3	
T3		s	0.5	
T4		ms	60	This is the requirement on active set update delay, see clause 8.3.1.2, where KC=1 and OC=0.
T5		ms	10	
T6		s	2	

Table 8.3.1.1.2: Cell specific test parameters for Soft handover

Parameter	Unit	Cell 1						Cell 2					
		T1	T2	T3	T4	T5	T6	T1	T2	T3	T4	T5	T6
CPICH_Ec/Ior	dB	-10						-10					
PCCPCH_Ec/Ior	dB	-12						-12					
SCH_Ec/Ior	dB	-12						-12					
PICH_Ec/Ior	dB	-15						-15					
DPCH_Ec/Ior	dB	Note1	Note1	Note1		N/A	N/A	N/A	N/A	Note3	Note1	Note1	
OCNS_Ec/Ior	dB	Note2	Note2	Note2		-0.94	-0.94	-0.94	-0.94	Note2	Note2	Note2	
$\hat{I}_{or}/I_{oc}$	dB	0	2.91	2.91		2.91	2.91	-Inf	2.91	2.91	2.91	2.91	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-13	-14	-14		-14	-14	-Inf	-14	-14	-14	-14	
Propagation Condition		AWGN											
Relative delay of paths received from cell 2 with respect to cell 1	chips	{-148 … 148} Note 4											

Note 1: The DPCH level is controlled by the power control loop
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}
Note 3: The DPCH level is controlled by the power control loop. The initial power shall be set equal to the DPCH_Ec/Ior of Cell 1 at the end of T2.
Note 4: The relative delay of the path from cell 2 with respect to cell 1 shall always be within ±148 chip.

8.3.1.4.2 Procedure

1) The RF parameters are set up according to T1 in table 8.3.1.1.3 .

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 without Compressed mode parameters and test loop mode 2 is used. See TS 34.109 [4] for details regarding loopback test.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) 5 seconds after step4 has completed, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1A containing the CFN-SFN observed time difference between cell 1 and cell 2.

7) At the beginning of T3 the downlink DPCH of cell 2 shall be activated.

8) SS shall send an ACTIVE SET UPDATE message with activation time "now ", adding cell 2 to the active set. The ACTIVE SET UPDATE message shall be sent to the UE so that the whole message is available at the UE at the beginning of T4.

9) At the beginning of T5 the DPCH from cell 1 shall be switched off.

10) The UE downlink BLER shall be measured during time period T6.

11) 5 seconds after step10 has completed, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

12) BLER is measured during concatenated time periods T6.Repeat step 1-11 until the confidence level for BLER is achieved. This is defined in annex F.6.1.10

Specific Message Contents

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

Contents of RRC CONNECTION SETUP message: UM (step 3):

Information Element	Value/remark	Version
Added or Reconfigured DL TrCH information list	1	
- Added or Reconfigured DL TrCH information		
- Downlink transport channel type	DCH	
- DL Transport channel identity	10	
- CHOICE DL parameters	Same as UL	
- Uplink transport channel type	DCH	
- UL TrCH Identity	5	
- DCH quality target	Not Present	

MEASUREMENT CONTROL message (step 4):

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

Information Element/Group name	Value/Remark
~~number of reported cells~~	
-Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status - CHOICE reported cell ~~- CHOICE reported cell~~ - Maximum number of reported cells ~~- Maximum number of reported cells~~	Event 1B Active set cells 3 dB Not Present 1.0 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~~Report cell within active set and/or monitored set cells on used frequency~~ 3~~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	

3GPP TSG-T1 Meeting #26 **Tdoc ⌘T1-050326**
Bangalore India, 31st January – 4th February

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**500**	⌘**rev**	**-**	⌘	Current version:	**5.6.0**	⌘

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

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

Title:	⌘	Correction to MEASUREMENT REPORT message in Annex I
Source:	⌘	Anritsu
Work item code:	⌘	
Date:	⌘	3/2/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

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

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

Reason for change:	⌘	The definition of default MEASUREMENT REPORT messages are ambiguous. Also, no required “Measured Results” are defined to check for some RRM TCs.
Summary of change:	⌘	1) “Measured Results” in MEASUREMENT REPORT messages are defined to be “ if Measured Results are configured, then check the IE is present, then if Measured Results are not configured, then no check is needed. 2)Added the reference for the Primary scrambling code. 3) “check the IE is absent” is change to “This IE does not need to be checked”
Consequences if not approved:	⌘	Good UEs may fail tests.

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

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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.

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
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.~~Checked 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.~~Checked 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~~150~~
- 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~~check that this IE is absent.~~
- 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~~check that this IE is absent~~.
- Pathloss	This IE does not need to be checked.~~Checked that this IE is absent~~
Measured results on RACH	If reporting of “Measured results on RACH“ is configured then check that this IE is present.~~Checked that this IE is absent~~ 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.~~Checked that this IE is absent~~
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.~~Checked that this IE is absent~~

Contents of MEASUREMENT REPORT message for Inter frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Inter-frequency measured results list	
- UTRA Carrier RSSI	If reporting of “UTRA Carrier RSSI~~-~~“ measurement is configured then check that this IE is present. If reporting of “UTRA Carrier RSSI~~-~~“ measurement is not configured then no check is needed~~check that this IE is absent~~.
- Inter-frequency cell measurement results	
- 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.~~Checked 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. ~~Checked 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~~150~~
- 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.~~check that this IE is absent.~~
- 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~~check that this IE is absent.~~.
- Pathloss	~~Checked that this IE is~~ absent
Measured results on RACH	If reporting of “Measured results on RACH“ is configured then check that this IE is present.~~Checked that this IE is absent~~ If reporting of “Measured results on RACH “measurement is not configured then no check is needed.
Additional measured results	~~Checked that this IE is absent~~This IE does not need to be checked.
Event results	If reporting of “Event results“ is configured then check that this IE is present.~~Checked that this IE is absent~~ If reporting of “Event results“ measurement is not configured then no check is needed.

Contents of MEASUREMENT REPORT message for inter – RAT test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Inter-RAT measured results list	
- CHOICE system	GSM
- GSM	
- Measured GSM cells	Checked that this IE is present
- GSM carrier RSSI	If reporting of “GSM carrier RSSI“ measurement is configured then check that this IE is present. If reporting of “GSM carrier RSSI “ measurement is not configured then no check is needed. ~~check that this IE is absent.~~
- CHOICE *BSIC*	Non verified BSIC
- Non verified BSIC	
- BCCH ARFCN	Checked that this IE is present
- Observed time difference to GSM cell	This IE does not need to be checked.~~Checked that this IE is absent~~
Measured results on RACH	If reporting of “Measured results on RACH“ is configured then check that this IE is present.~~Checked that this IE is absent~~If reporting of “Measured results on RACH“ measurement is not configured then no check is needed.
Additional measured results	~~Checked that this IE is absent~~This IE does not need to be checked.
Event results	If reporting of “Event results“ is configured then check that this IE is present.~~Checked that this IE is absent~~ If reporting of “Event results“ measurement is not configured then no check is needed.

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan – 4th Feb 2005

Tdoc ⌘T1-050329

CR-Form-v7

CHANGE REQUEST

⌘	34.121 CR 501	⌘ rev	-	⌘	Current version:	5.6.0	⌘

*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:	⌘	Removal of Rel-5 specific reference to TS 25.101		
Source:	⌘	NEC		
Work item code:	⌘	TEI	***Date:*** ⌘	01/02/2005
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#25 an action point (AP25.14) was created to check references [1] and [23]. Since TS 34.121 is a Rel-5 version specification there is no need to refer to a specific Rel-5 version of TS 25.101. For Release 6 UEs the non-specific reference needs to be added.
Summary of change:	⌘	Removed reference [23] and replaced cross-references to [23] by [1]. Added the non-specific reference for Release 6 UEs.
Consequences if not approved:	⌘	Confusing references.

Clauses affected:	⌘	2, 5.2.2, 5.9.2, 5.11.2, 6.2.2, 6.5.2.1, 6.5.2.2, 6.5.2.3, 6.6.2, 6.7.2, Table H.1			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Appliable for terminals supporting R99 and later.			

How to create CRs using this form:

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

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

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

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

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

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document.

- For a Release 1999 UE, references to 3GPP documents are to version 3.x.y.
- For a Release 4 UE, references to 3GPP documents are to version 4.x.y.
- For a Release 5 UE, references to 3GPP documents are to version 5.x.y.
- For a Release 6 UE, references to 3GPP documents are to version 6.x.y.

[1] 3GPP TS 25.101 "UE Radio transmission and reception (FDD)".

[2] 3GPP TS 25.133 "Requirements for Support of Radio Resource Management (FDD)".

[3] 3GPP TS 34.108 "Common Test Environments for User Equipment (UE) Conformance Testing".

[4] 3GPP TS 34.109 "Terminal logical test interface; Special conformance testing functions".

[5] 3GPP TS 25.214 "Physical layer procedures (FDD)".

[6] 3GPP TR 21.905 "Vocabulary for 3GPP Specifications".

[7] 3GPP TR 25.990 "Vocabulary".

[8] 3GPP TS 25.331: "Radio Resource Control (RRC); Protocol Specification".

[9] 3GPP TS 25.433 "UTRAN Iub Interface NBAP Signalling".

[10] ITU-R Recommendation SM.329: "Spurious emissions".

[11] 3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode".

[12] 3GPP TS 25.303: "Interlayer Procedures in Connected Mode".

[13] 3GPP TS 25.321: "Medium Access Control (MAC) protocol specification".

[14] 3GPP TS 25.213: "Spreading and modulation (FDD)".

[15] 3GPP TS 25.223: "Spreading and modulation (TDD)".

[16] ETSI ETR 273-1-2: "Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".

[17] 3GPP TR 25.926: "UE Radio Access Capabilities".

[18] 3GPP TR 21.904: "UE capability requirements".

[19] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".

[20] 3GPP TS 05.08 (R99): "Technical Specification Group GSM/EDGE Radio Access Network; Radio subsystem link control".

[21] 3GPP TS 34.123-1: "User Equipment (UE) Conformance Specification; Part 1: Protocol Conformance Specification".

[22] 3GPP TS 25.215: "Physical Layer – Measurements (FDD)".

[23] ~~3GPP TS 25.101 "UE Radio transmission and reception (FDD), Release 5".~~Void

[24] 3GPP TR 34.902 " Derivation of test tolerances for multi-cell Radio Resource Management (RRM) conformance tests ".

[25] 3GPP TS 51.010-1: "Mobile Station (MS) conformance specification; Part 1: Conformance specification ".

[26] 3GPP TS 25.307 "Requirements on UEs supporting a release independent frequency band".

[27] ITU-T recommendation O.153: "Basic parameters for the measurement of error performance at bit rates below the primary rate".

[28] 3GPP TS 05.05 (R99): "Technical Specification Group GSM/EDGE Radio Access Network; Radio transmission and reception".

[29] 3GPP TS 45.005 (Rel-4 and later releases): "Technical Specification Group GSM/EDGE Radio Access Network; Radio transmission and reception".

[30] 3GPP TS 45.008 (Rel-4 and later releases): "Technical Specification Group GSM/EDGE Radio Access Network; Radio subsystem link control".

{unchanged sections are skipped}

5.2.2 Minimum Requirements

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

Table 5.2.1: Nominal Maximum Output Power

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

The normative reference for this requirement is TS 25.101 [~~23~~1] clause 6.2.1.

{unchanged sections are skipped}

5.9.2 Minimum Requirements

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

Table 5.9.1: Spectrum Emission Mask Requirement

Δf in MHz (note 1)	Minimum requirement Band I, II, III, V, VI	Additional requirements Band II and Band V	Measurement bandwidth
2,5 to 3.5	$\left\{-35-15\cdot\left(\frac{\Delta f}{MHz}-2.5\right)\right\}dBc$	-15 dBm	30 kHz (note 2)
3,5 to 7,5	$\left\{-35-1\cdot\left(\frac{\Delta f}{MHz}-3.5\right)\right\}dBc$	-13 dBm	1 MHz (note 3)
7,5 to 8,5	$\left\{-39-10\cdot\left(\frac{\Delta f}{MHz}-7.5\right)\right\}dBc$	-13 dBm	1 MHz (note 3)
8,5 to 12,5	–49 dBc	-13 dBm	1 MHz (note 3)
NOTE 1: Δf is the separation between the carrier frequency and the centre of the measuring filter. NOTE 2: The first and last measurement position with a 30 kHz filter is at Δf equals to 2,515 MHz and 3,485 MHz. NOTE 3: The first and last measurement position with a 1 MHz filter is at Δf equals to 4 MHz and 12 MHz. As a general rule, the resolution bandwidth of the measuring equipment should be equal to the measurement bandwidth. To improve measurement accuracy, sensitivity and efficiency, the resolution bandwidth can be different from the measurement bandwidth. When the resolution bandwidth is smaller than the measurement bandwidth, the result should be integrated over the measurement bandwidth in order to obtain the equivalent noise bandwidth of the measurement bandwidth.			
The lower limit shall be –50 dBm/3,84 MHz or which ever is higher.			

The normative reference for this requirement is TS 25.101 [~~23~~1] clause 6.6.2.1.1.

{unchanged sections are skipped}

5.11.2 Minimum Requirements

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

Table 5.11.1a: General spurious emissions requirements

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

Table 5.11.1b: Additional spurious emissions requirements

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

The normative reference for this requirement is TS 25.101 [~~23~~1] clause 6.6.3.1.

{unchanged sections are skipped}

6.2.2 Minimum Requirements

The BER shall not exceed 0,001 for the parameters specified in table 6.2.1.

Table 6.2.1: Test parameters for Reference Sensitivity Level

Operating Band	Unit	DPCH_Ec <REFSENS>	<REFÎ$_{or}$>
I, VI	dBm/3.84 MHz	-117	-106.7
II	dBm/3.84 MHz	-115	-104.7
III	dBm/3.84 MHz	-114	-103.7
V	dBm/3.84 MHz	-115	-104.7
1. For Power class 3 this shall be at the maximum output power 2. For Power class 4 this shall be at the maximum output power			

The normative reference for this requirement is TS 25.101 [~~23~~1] clause 7.3.1.

{unchanged sections are skipped}

6.5.2 Minimum Requirements

6.5.2.1 Minimum Requirements (In-band blocking)

The BER shall not exceed 0,001 for the parameters specified in table 6.5.1.

The normative reference for this requirement is TS 25.101 [~~23~~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 [~~23~~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<2110 MHz and 2170<f<2185 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied.			
Band II operation	For 1915<f<1930 MHz and 1990<f<2005 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied			
Band III operation	For 1790<f<1805 MHz and 1880<f<1895 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied.			
Band V operation	For 854<f<869 MHz and 894<f<909 MHz, the appropriate in-band blocking or adjacent channel selectivity in subclause 6.5.2 and subclause 6.4.2 shall be applied.			
Band VI operation	For 860<f<875 MHz and 885<f<900 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied.			

6.5.2.3 Minimum requirements (Narrow band blocking)

The BER shall not exceed 0.001 for the parameters specified in table 6.5.3. This requirement is measure of a receiver's ability to receive a W-CDMA signal at its assigned channel frequency in the presence of an unwanted narrow band interferer at a frequency, which is less than the nominal channel spacing. The requirements and this test apply to UTRA for the FDD UE supporting band II, band III or band V.

The normative reference for this requirement is TS 25.101 [~~23~~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 GMSK modulated carrier following the structure of the GSM signals, but with all modulating bits (including the midamble period) derived directly from a random or pseudo random data stream.

{unchanged sections are skipped}

6.6.2 Minimum Requirements

The BER shall not exceed 0,001 for the parameters specified in table 6.6.1.

The normative reference for this requirement is TS 25.101 [~~23~~1] clause 7.7.1.

Table 6.6.1: Test parameters for Spurious Response

Parameter	Level	Unit
DPCH_Ec	<REFSENS> +3 dB	dBm / 3,84MHz
$\hat{I}_{or}$	<REF$\hat{I}_{or}$> +3 dB	dBm / 3,84MHz
$I_{blocking}$(CW)	–44	dBm
F_{uw}	Spurious response frequencies	MHz
UE transmitted mean power	20 (for Power class 3) 18 (for Power class 4)	dBm

{unchanged sections are skipped}

6.7.2 Minimum Requirements

The BER shall not exceed 0,001 for the parameters specified in table 6.7.1 and in table 6.7.2.

The normative reference for this requirement is TS 25.101 [~~23~~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 GMSK modulated carrier following the structure of the GSM signals, but with all modulating bits (including the midamble period) derived directly from a random or pseudo random data stream.

{unchanged sections are skipped}

Annex H (normative): UE Capabilities (FDD)

H.1 Radio Access and RF Baseline Implementation Capabilities:

NOTE 1: This clause shall be aligned with TR 25.926, UE Radio Access Capabilities regarding FDD RF parameters. These RF UE Radio Access capabilities represent options in the UE, that require signalling to the network.

NOTE 2: In addition there are options in the UE that do not require any signalling. They are designated as UE baseline capabilities, according to TR 21.904, Terminal Capability Requirements.

NOTE 3: Table H.1 provides the list of UE radio access capability parameters and possible values.

Table H.1: RF UE Radio Access Capabilities

	UE radio access capability parameter	Value range
FDD RF parameters	UE power class (~~[23]~~ 25.101 [1] clause 6.2.1)	3, 4
	Tx/Rx frequency separation for frequency band I (~~[23]~~ 25.101 [1] clause 5.3) Not applicable if UE is not operating in frequency band I	190 MHz, 174.8-205.2 MHz, 134.8-245.2 MHz
	Tx/Rx frequency separation for frequency band II (~~[1]~~ 25.101 [1] clause 5.3) Not applicable if UE is not operating in frequency band II	80MHz
	Tx/Rx frequency separation for frequency band III (~~[1]~~ 25.101 [1] clause 5.3) Not applicable if UE is not operating in frequency band III	95MHz
	Tx/Rx frequency separation for frequency band VI (~~[1]~~ 25.101 [1] clause 5.3) Not applicable if UE is not operating in frequency band VI	45MHz

Table H.2 provides the UE baseline implementation capabilities.

NOTE 4: Table H.2 Radio frequency bands are described in section on frequency bands and channel arrangement in this document.Table H.2: UE RF Baseline Implementation Capabilities

UE implementation capability	Value range
Radio frequency bands	I, II, I + II I + III I + VI II + III I + II + III I + II + VI I + III + VI I + II + III + VI

- The special conformance testing functions and the logical test interface as specified in TS 34.109 [4]. This issue is currently under investigation.

- Uplink reference measurement channel 12.2 kbps (FDD), TS 25.101 [1] clause A.2.1

- Downlink reference measurement channel 12.2 kbps (FDD), TS 25.101 [1] clause A.3.1.

3GPP TSG-T1 Meeting #26 **Tdoc ⌘T1-050347**
Bangalore, India 31st January – 4th Febuary, 2005

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**503**	⌘**rev**	**-**	⌘	Current version:	**5.6.0**	⌘

*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: Changes to Annex D and Annex H to introduce UMTS 850 Band			
Source:	⌘	Motorola			
Work item code:	⌘	UMTS 850	***Date:***	⌘	31/01/2005
Category:	⌘	**B**	***Release:***	⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.			*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Introducing UMTS 850 band to Annex D and Annex H
Summary of change:	⌘	Re-structure of multi-path fading propagation conditions. In multipath propagation conditions, which are used for verifying demodulation performance and RRM test case “Correct reporting of neighbours in fading propagation conditions”, all the UE speeds of Band V are scaled to the speeds, which correspond to the same Doppler frequencies as used in Band I. Removed text in Annex H from the specification and reference core specification TS25.306.
Consequences if not approved:	⌘	The requirements for UMTS 850 Band will not be aligned with core specifications.

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

Annex D (normative): Propagation Conditions

D.1 General

D.2 Propagation Conditions

D.2.1 Static propagation condition

The propagation for the static performance measurement is an Additive White Gaussian Noise (AWGN) environment. No fading and multi-paths exist for this propagation model.

D.2.2 Multi-path fading propagation conditions

Table D.2.2.1 shows propagation conditions that are used for the performance measurements in multi-path fading environment. All taps have classical Doppler spectrum.

Table D.2.2.1: Propagation conditions for multi-path fading environments

~~Case 1, speed 3km/h~~		~~Case 2, speed 3 km/h~~		~~Case 3, speed 120 km/h~~		~~Case 4, speed 3 km/h~~		~~* Case 5, speed 50 km/h~~		~~Case 6, speed 250 km/h~~	
~~Relative Delay [ns]~~	~~Average Power [dB]~~	~~Relative Delay [ns]~~	~~Average Power [dB]~~	~~Relative Delay [ns]~~	~~Average Power [dB]~~	~~Relative Delay [ns]~~	~~Average Power [dB]~~	~~Relative Delay [ns]~~	~~Average Power [dB]~~	~~Relative Delay [ns]~~	~~Average Power [dB]~~
~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~
~~976~~	~~-10~~	~~976~~	~~0~~	~~260~~	~~-3~~	~~976~~	~~0~~	~~976~~	~~-10~~	~~260~~	~~-3~~
		~~20000~~	~~0~~	~~521~~	~~-6~~					~~521~~	~~-6~~
				~~781~~	~~-9~~					~~781~~	~~-9~~

Case 1		Case 2		Case 3		Case 4		Case 5 (Note 1)		Case 6	
Speed for Band I, II and III: 3 km/h		Speed for Band I, II and III: 3 km/h		Speed for Band I, II and III: 120 km/h		Speed for Band I, II and III: 3 km/h		Speed for Band I, II and III: 50 km/h		Speed for Band I, II and III: 250 km/h	
Speed for Band V and VI: 7 km/h		Speed for Band V and VI: 7 km/h		Speed for Band V and VI: 282 km/h (Note 2)		Speed for Band V and VI: 7 km/h		Speed for Band V and VI: 118 km/h		Speed for Band V and VI: 583 km/h (Note 2)	
Relative Delay [ns]	Relative mean Power [dB]	Relative Delay [ns]	Relative mean Power [dB]	Relative Delay [ns]	Relative mean Power [dB]	Relative Delay [ns]	Relative mean Power [dB]	Relative Delay [ns]	Relative mean Power [dB]	Relative Delay [ns]	Relative mean Power [dB]
0	0	0	0	0	0	0	0	0	0	0	0
976	-10	976	0	260	-3	976	0	976	-10	260	-3
		20000	0	521	-6					521	-6
				781	-9					781	-9

NOTE 1: Case 5 is only used in Requirements for support of RRM.

NOTE 2: Speed above 250km/h is applicable to demodulation performance requirements only.

Table D.2.2.1A shows propagation conditions that are used for HSDPA performance measurements in multi-path fading environment.

Table D.2.2.1A: Propagation Conditions for multi-path fading environments for HSDPA

~~ITU Pedestrian A Speed 3km/h (PA3)~~		~~ITU Pedestrian B Speed 3km/h (PB3)~~		~~ITU vehicular A Speed 30km/h (VA30)~~		~~ITU vehicular A Speed 120km/h (VA120)~~	
~~Relative Delay [ns]~~	~~Relative Mean Power [dB]~~	~~Relative Delay [ns]~~	~~Relative Mean Power [dB]~~	~~Relative Delay [ns]~~	~~Relative Mean Power [dB]~~	~~Relative Delay [ns]~~	~~Relative Mean Power [dB]~~
~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~
~~110~~	~~-9.7~~	~~200~~	~~-0.9~~	~~310~~	~~-1.0~~	~~310~~	~~-1.0~~
~~190~~	~~-19.2~~	~~800~~	~~-4.9~~	~~710~~	~~-9.0~~	~~710~~	~~-9.0~~
~~410~~	~~-22.8~~	~~1200~~	~~-8.0~~	~~1090~~	~~-10.0~~	~~1090~~	~~-10.0~~
		~~2300~~	~~-7.8~~	~~1730~~	~~-15.0~~	~~1730~~	~~-15.0~~
		~~3700~~	~~-23.9~~	~~2510~~	~~-20.0~~	~~2510~~	~~-20.0~~

ITU Pedestrian A Speed 3km/h (PA3)		**ITU Pedestrian B Speed 3km/h (PB3)**		**ITU vehicular A Speed 30km/h (VA30)**		**ITU vehicular A Speed 120km/h (VA120)**	
Speed for Band I, II and III 3 km/h		Speed for Band I, II and III 3 km/h		Speed for Band I, II and III 30 km/h		Speed for Band I, II and III 120 km/h	
Speed for Band V, VI 7 km/h		Speed for Band V, VI 7 km/h		Speed for Band V, VI 71 km/h		Speed for Band V, VI 282 km/h (Note 1)	
Relative Delay [ns]	**Relative Mean Power [dB]**	**Relative Delay [ns]**	**Relative Mean Power [dB]**	**Relative Delay [ns]**	**Relative Mean Power [dB]**	**Relative Delay [ns]**	**Relative Mean Power [dB]**
0	0	0	0	0	0	0	0
110	-9.7	200	-0.9	310	-1.0	310	-1.0
190	-19.2	800	-4.9	710	-9.0	710	-9.0
410	-22.8	1200	-8.0	1090	-10.0	1090	-10.0
		2300	-7.8	1730	-15.0	1730	-15.0
		3700	-23.9	2510	-20.0	2510	-20.0

NOTE 1: Speed above 120km/h is applicable to demodulation performance requirements only.

Annex H (normative): UE Capabilities (FDD)

For UE capabilities regarding FDD refer to TS 25.306.

~~H.1 Radio Access and RF Baseline Implementation Capabilities:~~

~~NOTE 1: This clause shall be aligned with TR 25.926, UE Radio Access Capabilities regarding FDD RF parameters. These RF UE Radio Access capabilities represent options in the UE, that require signalling to the network.~~

~~NOTE 2: In addition there are options in the UE that do not require any signalling. They are designated as UE baseline capabilities, according to TR 21.904, Terminal Capability Requirements.~~

~~NOTE 3: Table H.1 provides the list of UE radio access capability parameters and possible values.~~

~~Table H.1: RF UE Radio Access Capabilities~~

	~~UE radio access capability parameter~~	~~Value range~~
~~FDD RF parameters~~	~~UE power class~~ ~~([23] 25.101 clause 6.2.1)~~	~~3, 4~~
	~~Tx/Rx frequency separation for frequency band I~~ ~~([23] 25.101 clause 5.3)~~ ~~Not applicable if UE is not operating in frequency band I~~	~~190 MHz,~~ ~~174.8-205.2 MHz,~~ ~~134.8-245.2 MHz~~
	~~Tx/Rx frequency separation for frequency band II~~ ~~([1] 25.101 clause 5.3)~~ ~~Not applicable if UE is not operating in frequency band II~~	~~80MHz~~
	~~Tx/Rx frequency separation for frequency band III~~ ~~([1] 25.101 clause 5.3)~~ ~~Not applicable if UE is not operating in frequency band III~~	~~95MHz~~
	~~Tx/Rx frequency separation for frequency band V~~ ~~([1] 25.101 clause 5.3)~~ ~~Not applicable if UE is not operating in frequency band V~~	~~45 MHz~~
	~~Tx/Rx frequency separation for frequency band VI~~ ~~([1] 25.101 clause 5.3)~~ ~~Not applicable if UE is not operating in frequency band VI~~	~~45MHz~~

~~Table H.2 provides the UE baseline implementation capabilities.~~

~~NOTE 4: Table H.2 Radio frequency bands are described in section on frequency bands and channel arrangement in this document.~~

~~**Table H.2: UE RF Baseline Implementation Capabilities**~~

~~UE implementation capability~~	~~Value range~~
~~Radio frequency bands~~	~~I,~~ ~~II,~~ ~~I + II~~ ~~I + III~~ ~~I + V~~ ~~I + VI~~ ~~II + III~~ ~~I + II + III~~ ~~I + II + V~~ ~~I + III + V~~ ~~I + II + III + V~~ ~~I + II + VI~~ ~~I + III + VI~~ ~~I + II + III + VI~~

- ~~The special conformance testing functions and the logical test interface as specified in TS 34.109 [4]. This issue is currently under investigation.~~
- ~~Uplink reference measurement channel 12.2 kbps (FDD), TS 25.101 [1] clause A.2.1~~
- ~~Downlink reference measurement channel 12.2 kbps (FDD), TS 25.101 [1] clause A.3.1.~~

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan - 4th Feb 2005

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CHANGE REQUEST

⌘	34.121	CR	504	⌘ rev	-	⌘	Current version:	5.6.0	⌘

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

Title:	⌘	Correction of 34.121 Power vs. Time diagrams
Source:	⌘	Agilent Technoliges
Work item code:	⌘	TEI6 — ***Date:*** ⌘ 3/2/2005
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 the figures and text according to 25.101
Summary of change:	⌘	a) Updated figures 5.5.1 and 5.5.2 with changes in 25.101 b) Clarified text regarding the power vs. time “mask”.
Consequences if not approved:	⌘	The previous figures and text were misleading and led to a lot of incorrect assumptions about how the test should be performed. This change clarifies the requirement and ensures testing is carried out accoriding ot the core specifications and that the risk of failing a good UE is minimized.

		Y	N		
Clauses affected:	⌘			5.5.2	
Other specs Affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘			This CR will create the release 6 version of 34.121	

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.

5.5.2 Transmit ON/OFF Time mask

5.5.2.1 Definition and applicability

The time mask for transmit ON/OFF defines the ramping time allowed for the UE between transmit OFF power and transmit ON power. Possible ON/OFF scenarios are PRACH, CPCH or uplink compressed mode.

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

5.5.2.2 Minimum requirements

The ~~transmit power levels versus time shall meet the mask specified in~~ mean power of successive slots shall be calculated according to figure 5.5.1 for PRACH preambles, and ~~the mask in~~ figure 5.5.2 for all other cases. The off signal is defined as the RRC filtered mean power.

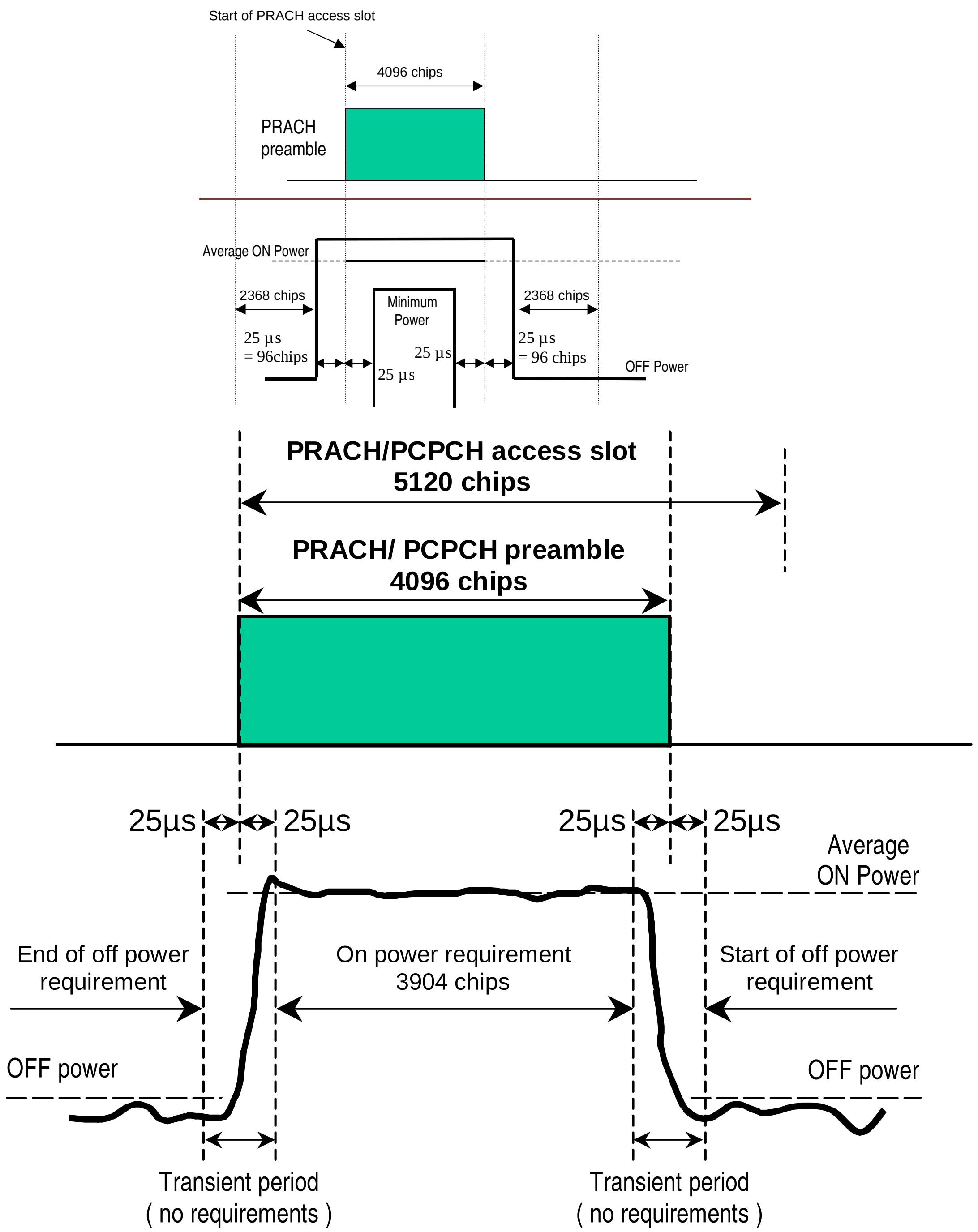

Figure 5.5.1: Transmit ON/OFF template for PRACH preambles

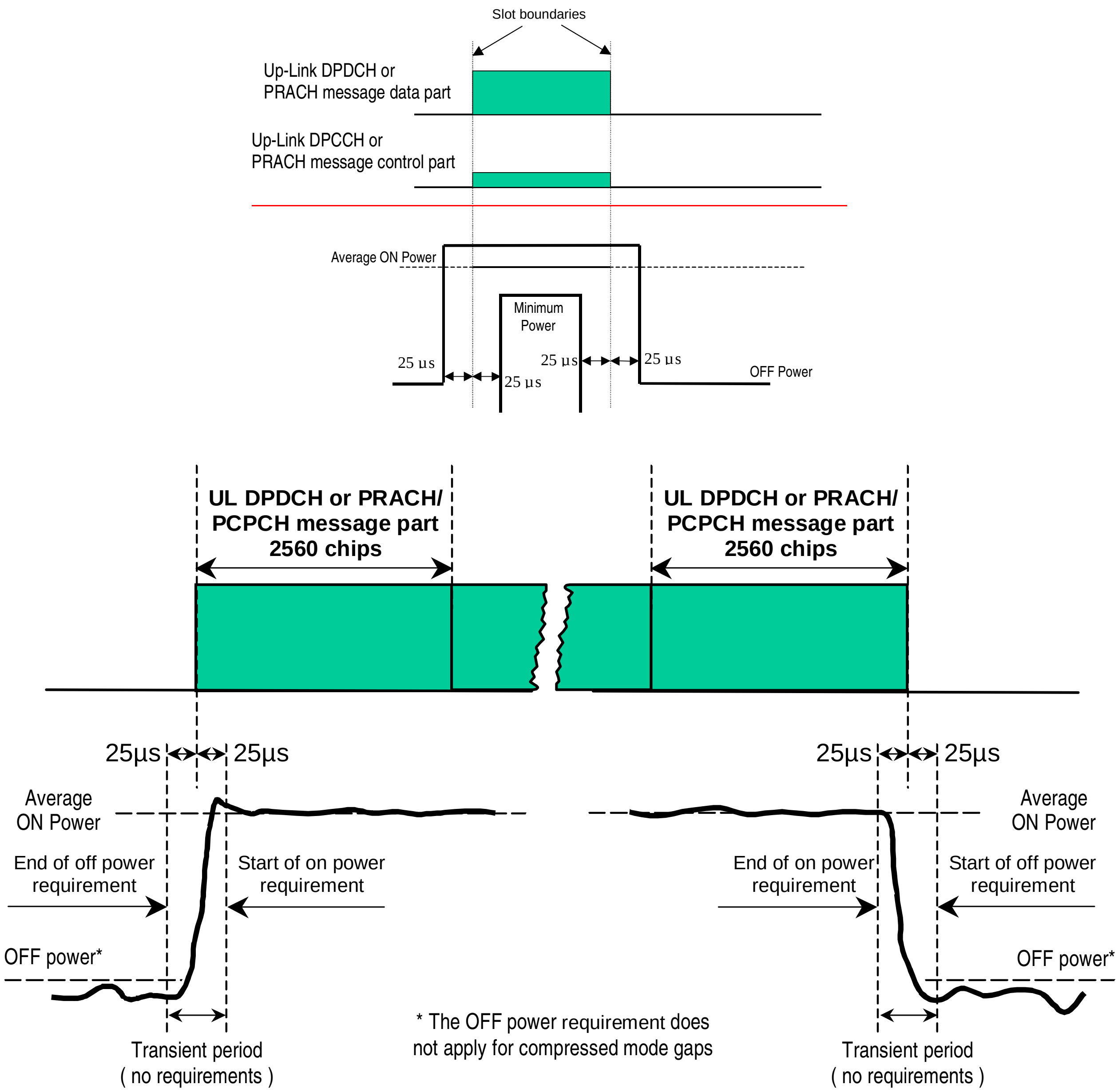

Figure 5.5.2: Transmit ON/OFF template for all other On/Off cases

OFF Power is defined in clause 5.5.1.2.

ON power is defined as the mean power. The specification depends on each possible case.

- First preamble of PRACH: Open loop accuracy (table 5.4.1.1).
- During preamble ramping of the RACH and between final RACH preamble and RACH message part: Accuracy depending on size of the required power difference (table 5.5.2.1).
- After transmission gaps in compressed mode: Accuracy as in table 5.7.1.
- Power step to Maximum Power: Maximum power accuracy (table 5.2.1).

Table 5.5.2.1: Transmitter power difference tolerance for RACH preamble ramping, and between final RACH preamble and RACH message part

Power difference size ΔP [dB]	Transmitter power difference tolerance [dB]
0	±1
1	±1
2	±1,5
3	±2
4 ≤ ΔP ≤ 10	±2,5
11 ≤ ΔP ≤ 15	±3,5
16 ≤ ΔP ≤ 20	±4,5
21 ≤ ΔP	±6,5

The reference for this requirement is TS 25.101 [1] clause 6.5.2.1.

This is tested using PRACH operation.

5.5.2.3 Test purpose

To verify that the ~~UE transmit ON/OFF power levels versus time meets the described mask~~ mean power of successive slots shown in figures 5.5.1 and figures 5.5.2 meets the requirements given in 5.5.2.2.

~~An excess error of transmit ON/OFF response~~ Transmission of the wrong power increases ~~the~~ interference to other channels, or increases transmission errors in the up link's own channel.

5.5.2.4 Method of test

5.5.2.4.1 Initial conditions

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

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

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

2) Channel conditions are initially set up with received CPICH_RSCP >-85 dBm. The relative power level of downlink physical channels to I_{or} are set up according to clause E.2.1. The parameter settings of the cell are set up according to table 5.5.2.1A.

3) Switch on the phone.

4) After the UE has performed registration and entered idle mode, $\hat{I}_{or}$ is set up according to table 5.5.2.2. The relative power level of downlink physical channels to I_{or} are set up according to clause E.2.1

5) A call is set up according to the Generic call setup procedure, in [3] clause 7.3.1 with channel conditions according the test parameters in table 5.5.2.3.

The RACH procedure within the call setup is used for the test. The number of the available subchannels should be limited to one. This ensures that the preamble sequence is known to the SS. The preamble retransmission shall be at least 3. The power ramping step size shall be 1 dB. Note that the maximum number of preamble retransmissions is limited to 5 due to the fact that the commanded uplink power exceeds the allowed uplink power of more than 6 dB. The SS shall not send either an ACK or a NACK.

Table 5.5.2.1A: Settings for the serving cell

Parameter	Unit	Cell 1
Cell type		Serving cell
UTRA RF Channel Number		Channel 1
Qqualmin	DB	-24
Qrxlevmin	DBm	-115
UE_TXPWR_MAX_RACH	DBm	21

Table 5.5.2.2: Test parameters for Transmit ON/OFF Time mask (UE)

Parameter	Level / Status	Unit
$\hat{I}_{or}$	See table 5.5.2.3	dBm / 3,84 MHz

Table 5.5.2.3: Test parameters for Transmit ON/OFF Time mask (SS)

Parameter	Power Class 1	Power Class 2	Power Class 3	Power Class 4	Unit
$\hat{I}_{or}$ (note 1)	–106,7	–106,7	–106,7	–106,7	dBm / 3,84 MHz
CPICH_RSCP (notes 1 and 2)	–110	–110	–110	–110	dBm
Primary CPICH DL TX power	+19	+19	+19	+19	dBm
Simulated path loss = Primary CPICH DL TX power – CPICH_RSCP	+129	+129	+129	+129	dB
UL interference	–86	–92	–95	–98	dBm
Constant Value	–10	–10	–10	–10	dB
Expected nominal UE TX power (note 3)	+33	+27	+24	+21	dBm
NOTE 1: The power level of S-CCPCH should be defined because S-CCPCH is transmitted during Preamble RACH transmission period. The power level of S-CCPCH is temporarily set to –10,3 dB relative to I_{or}. However, it is necessary to check whether the above S-CCPCH level is enough to establish a connection with the reference measurement channels. NOTE 2: The purpose of this parameter is to calculate the Expected nominal UE TX power. NOTE 3: The Expected nominal UE TX power is calculated by using the equation in the clause 8.5.7 Open Loop Power Control of TS 25.331 [8].					

5.5.2.4.2 Procedure

1) Set the TX output level of the SS to obtain $\hat{I}_{or}$ at the UE antenna connector and select the test parameters of table 5.5.2.3 according to the power class. $\hat{I}_{or}$ shall be according to table 5.5.2.3 (–106,7 dBm / 3,84 MHz).

2) Measure the mean power (ON power) of the UE on the first RACH preamble or two consecutive RACH preambles. The measurements shall not include the transient periods. From the occurrence of the first RACH preamble the SS shall predict the following RACH preamble timing.

3) Measure the RRC filtered mean power (OFF power) in a 2368 chip time interval before a transient period of 25 µs (96 chips) prior to a RACH preamble (ON power). Measure the RRC filtered mean power (OFF power) in a 2368 chip time interval after a transient period of 25 µs (96 chips) after a RACH preamble (ON power).

5.5.2.5 Test requirements

The deviation with respect to the Expected nominal UE TX power (table 5.5.2.3), derived in step 2), shall not exceed the prescribed upper tolerance in table 5.2.2 (clause 5.2.5) and lower tolerance in table 5.4.1.1. (clause 5.4.1.2) for the first preamble, or shall meet the tolerance in table 5.5.2.1 for two consecutive preambles.

The measured RRC filtered mean power, derived in step 3), shall be less than −55 dBm. (clause 5.5.1.5).

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan - 4th Feb 2005

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CHANGE REQUEST

⌘	**34.121**	**CR**	**505**	⌘ **rev**	**-**	⌘	Current version:	**5.6.0**	⌘

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

Title:	⌘	Clarification for Test Case 7.9
Source:	⌘	Intel
Work item code:	⌘	TEI
Date:	⌘	3/2/2005
Category:	⌘	**F**
Release:	⌘	R99

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

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

Reason for change:	⌘	1)The definition of the test needs to be clarified to explicitly state that the bler-quality target for the DCCH should be set low enough so that it does not dominate the one for the DTCH. 2) Initial Conditions are not clear.
Summary of change:	⌘	1. Added a note to section 7.9 to explicitly state that the bler-quality target for the DCCH should be set low enough so that it does not dominate the one for the DTCH. 2. Adding Reference to the table in Annex I to reflect the change in The RRC CONNECTION SETUP message to set the DCCH bler-quality target to 0 (100% BLER). 3. The steps in the Initial conditions were modified to make the test clearer.
Consequences if not approved:	⌘	DL compressed mode may be tested improperly

Clauses affected:	⌘	7.9.1, Annex I

		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

7.9 Downlink compressed mode

Downlink compressed mode is used to create gaps in the downlink transmission, to allow the UE to make measurements on other frequencies.

7.9.1 Single link performance

7.9.1.1 Definition and applicability

The receiver single link performance of the Dedicated Traffic Channel (DCH) in compressed mode is determined by the Block Error Ratio (BLER) and transmitted DPCH_Ec/Ior power ratio in the downlink.
If a BLER target has been assigned to a DCCH (See clause C.3), then it has to be such that outer loop is based on DTCH and not on DCCH.

Note: The above implies that the BLER target for the DCCH should be set low enough so that it does not dominate the one for the DTCH.

The compressed mode parameters are given in clause C.5. Tests 1 and 2 are using Set 1 compressed mode pattern parameters from table C.5.1 in clause C.5 while tests 3 and 4 are using Set 2 compressed mode patterns from the same table.

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

7.9.1.2 Minimum requirements

For the parameters specified in table 7.9.1 the downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio measured values, which are averaged over one slot, shall be below the specified value in table 7.9.2 more than 90% of the time. The measured quality on DTCH shall be as required in table 7.9.2.

Downlink power control is ON during the test. Uplink TPC commands shall be error free.

Table 7.9.1: Test parameter for downlink compressed mode

Parameter	Test 1	Test 2	Test 3	Test 4	Unit
Delta SIR1	0	3	0	3	dB
Delta SIR after1	0	3	0	3	dB
Delta SIR2	0	0	0	0	dB
Delta SIR after2	0	0	0	0	dB
$\hat{I}_{or}/I_{oc}$	9				dB
I_{oc}	–60				dBm / 3,84 MHz
Information Data Rate	12,2				kbps
Propagation condition	Case 2				
Target quality value on DTCH	0,01				BLER
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 7.9.2: Requirements in downlink compressed mode

Parameter	Test 1	Test 2	Test 3	Test 4	Unit
$\frac{DPCH\_E_c}{I_{or}}$	-14,6	No requirements	-15,2	No requirements	dB
Measured quality of compressed and recovery frames	No requirements	< 0,001	No requirements	< 0,001	BLER
Measured quality on DTCH	0,01 ± 30 %				BLER

The reference for this requirement is TS 25.101 [1] clause 8.9.1.1.

7.9.1.3 Test purpose

The purpose of this test is to verify the reception of DPCH in a UE while downlink is in a compressed mode. The UE needs to preserve the BLER using sufficient low DL power. It is also verified that UE applies the Delta SIR values, which are signaled from network, in its outer loop power control algorithm.

7.9.1.4 Method of test

7.9.1.4.1 Initial conditions

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

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

1) Connect SS, multipath fading simulator and an AWGN source to the UE antenna connector as shown in figure A.10.

2) Set up a call according to the Generic call setup procedure, specified in TS 34.108 [3] clause 7.3.2, with the exception of the information element of the RRC CONNECTION SETUP message listed in Annex I. With this exception, the outer loop is based on DTCH and not on DCCH.

3) RF parameters are set up according to table 7.9.~~1~~3.

4) Set compressed mode parameters according to table C.5.1. Tests 1 and 2 are using Set 1 compressed mode pattern parameters and while tests 3 and 4 are using Set 2 compressed mode pattern parameters.

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

6) ~~SS signals to UE target quality value on DTCH as specified in table 7.9.1~~. ~~Uplink TPC commands shall be error free~~. 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. SS response time for UE TPC commands shall be one slot. At the same time BLER is measured. This is continued until the target quality value on DTCH, specified in Table 7.9.1 is met, within the minimum accuracy requirement, specified in Table 7.9.4.

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

7.9.1.4.2 Procedure

1) Test 1: Measure quality on DTCH and $\frac{DPCH\_E_c}{I_{or}}$ power ratio values averaged over one slot.

2) Test 2: Measure quality on DTCH and quality of compressed and recovery frames.

3) Test 3: Measure quality on DTCH and $\frac{DPCH\_E_c}{I_{or}}$ power ratio values averaged over one slot.

4) Test 4: Measure quality on DTCH and quality of compressed and recovery frames.

7.9.1.5 Test requirements

The test parameters are specified in table 7.9.3.

Table 7.9.3: Test parameter for downlink compressed mode

Parameter	Test 1	Test 2	Test 3	Test 4	Unit
Delta SIR1	0	3	0	3	dB
Delta SIR after1	0	3	0	3	dB
Delta SIR2	0	0	0	0	dB
Delta SIR after2	0	0	0	0	dB
$\hat{I}_{or}/I_{oc}$	9,6				dB
I_{oc}	–60				dBm / 3,84 MHz
Information Data Rate	12,2				kbps
Propagation condition	Case 2				
Target quality value on DTCH	0,01				BLER
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) Test 1: The downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio values averaged over one slot shall be below the values in table 7.9.4 more than 90 % of the time. The measured quality on DTCH shall be as required in table 7.9.4.

b) Test 2: Measured quality on DTCH and measured quality of compressed and recovery frames do not exceed the values in table 7.9.4.

c) Test3: The downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio values averaged over one slot shall be below the values in table 7.9.2 more than 90 % of the time. The measured quality on DTCH shall be as required in table 7.9.4.

d) Test 4: Measured quality on DTCH and measured quality of compressed and recovery frames do not exceed the values in table 7.9.4.

Table 7.9.4: Requirements in downlink compressed mode

Parameter	Test 1	Test 2	Test 3	Test 4	Unit
$\frac{DPCH\_E_c}{I_{or}}$	-14,5	No requirements	-15,1	No requirements	dB
Measured quality of compressed and recovery frames	No requirements	< 0,001	No requirements	< 0,001	BLER
Measured quality on DTCH	0,01 ± 30 %				BLER

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

<<<<<< Unchanged Sections Removed >>>>>>>>>>

Annex I (normative): Default Message Contents

This Annex contains the default values of common messages, other than those described in TS 34.108. The messages are primarily concerning the RRM test cases in clause 8 and unless indicated otherwise in specific test cases, shall be transmitted and checked by the system simulator. In this Annex, decimal values are normally used. However, sometimes, a hexadecimal value, indicated by an "H", or a binary value, indicated by a "B" is used.

Contents of MEASUREMENT REPORT message for Intra frequency test cases

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

Contents of MEASUREMENT REPORT message for Inter frequency test cases

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

Contents of MEASUREMENT REPORT message for inter – RAT test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Inter-RAT measured results list	
- CHOICE system	GSM
- GSM	
- Measured GSM cells	Checked that this IE is present
- GSM carrier RSSI	If reporting of "GSM carrier RSSI" measurement is configured then check that this IE is present. If reporting of "GSM carrier RSSI " measurement is not configured then check that this IE is absent.
- CHOICE *BSIC*	Non verified BSIC
- Non verified BSIC	
- BCCH ARFCN	Checked that this IE is present
- Observed time difference to GSM cell	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

Contents of RRC CONNECTION SETUP message: UM (Transition to CELL_DCH)

The following information element is exception of TS34.108 for test cases 7.8.1, 7.8.2, ~~and~~ 7.8.3 and 7.9.1.

Information Element	Value/remark
Added or Reconfigured DL TrCH information	
- DCH quality target	
- BLER Quality value	0.0

Contents of Master Information Block PLMN type is the case of GSM-MAP

The following information element is exception of TS34.108 based on 8.2.2, 8.3.5, 8.4.1,8.3.6, 8.3.7 test cases.

Information Element	Value/Remark
- SIB_REP	128
- SIB_POS	44
- SIB and SB type	System Information Type 1
- SIB_REP	128
- SIB_POS	44
- SIB and SB type	System Information Type 2
- SIB_REP	128
- SIB_POS	40
- SIB and SB type	System Information Type 3
- SIB_REP	128
- SIB_POS	104
- SIB and SB type	System Information Type 4
- SIB_REP	128
- SIB_POS	76
- SIB and SB type	System Information Type 5

Contents of Scheduling Block 1 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.2.2, 8.3.5, 8.4.1, 8.3.6, 8.3.7 test cases.

Information Element	Value/Remark
- SIB_REP	128
- SIB_POS	12
- SIB type SIBs only	System Information Type 6
- SIB_REP	128
- SIB_POS	116
- SIB type SIBs only	System Information Type 11
- SIB_REP	128
- SIB_POS	52
- SIB type SIBs only	System Information Type 12
- SIB_REP	128
- SIB_POS	72
- SIB type SIBs only	System Information Type 18

Contents of Master Information Block PLMN type is the case of GSM-MAP

The following information element is exception of TS34.108 based on monitorlist size for 8.3.4, 8.3.5.3, 8.4.1.1, 8.4.1.2, 8.6.1.1,8.6.1.1A, 8.6.1.2, 8.6.1.2A, 8.6.1.3, 8.6.1.4, 8.6.2.1,8.6.2.2, 8.6.4.1 test cases.

Information Element	Value/Remark
- SIB_POS	2
- SIB_POS offset info	Not Present
- SIB and SB type	Scheduling Block 1
- SIB_REP	128
- SIB_POS	22
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 1
- SIB_REP	128
- SIB_POS	22
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 2
- SIB_REP	128
- SIB_POS	20
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 3
- SIB_REP	128
- SIB_POS	52
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 4
- SIB_REP	128
- SIB_POS	38
- SIB_POS offset info	3
- SIB and SB type	System Information Type 5

Contents of Scheduling Block 1 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.4.1.1,8.4.1.2,8.6.1.1,8.6.1.1A,8.6.1.4,8.6.2.2 test cases.

Information Element	Value/Remark
- References to other system information blocks	
- SIB_REP	128
- SIB_POS	6
- SIB_POS offset info	3
- SIB type SIBs only	System Information Type 6
- SIB_POS	4
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	4
- SIB_REP	128
- SIB_POS	54
- SIB_POS offset info	3
- SIB_OFF	4
- SIB_OFF	2
- SIB_OFF	2
- SIB type SIBs only	System Information Type 11
- SIB_REP	128
- SIB_POS	26
- SIB_POS offset info	2
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SIB_REP	128
- SIB_POS	36
- SIB type SIBs only	System Information Type 18

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.4.1.1,8.4.1.2,8.6.1.1,8.6.1.1A,8.6.1.4.

Information Element	Value/Remark
- Intra-frequency measurement system information	
- New intra-frequency cells	24
- Intra-frequency cell id	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	Not Present

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.2.2.

Information Element	Value/Remark
- New intra-frequency cells	16
- Intra-frequency cell id	12+n (n=0 to 3)
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-frequency measurement system information	
- New inter-frequency cells	8
- Inter frequency cell id	7+n (n =0 to 4)
- Frequency info	Not Present Absence of this IE is equivalent to value of the previous "frequency info" in the list.
- Cell info	Same content as specified for Inter-frequency cell id=4 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-RAT measurement system information	Not Present

Contents of Scheduling Block 1 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.3.4, 8.3.5.3, 8.6.1.2,8.6.1.2A, 8.6.1.3, 8.6.4.1.

Information Element	Value/Remark
- References to other system information blocks	
- SIB_REP	128
- SIB_POS	6
- SIB_POS offset info	3
- SIB type SIBs only	System Information Type 6
- SIB_POS	4
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	5
- SIB_REP	128
- SIB_POS	54
- SIB_POS offset info	4
- SIB_OFF	4
- SIB_OFF	2
- SIB_OFF	2
- SIB_OFF	8
- SIB type SIBs only	System Information Type 11
- SIB_REP	128
- SIB_POS	26
- SIB_POS offset info	2
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- SIB_REP	128
- SIB_POS	36
- SIB type SIBs only	System Information Type 18

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.3.4, 8.3.5.3, 8.6.4.1

Information Element	Value/Remark
- Intra-frequency measurement system information	
- New intra-frequency cells	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)	Note:Any values depend on UEs.
- Band indicator	According to PICS/PIXIT
- BCCH ARFCN	Note:Any values that depend on UEs.

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.1.2,8.6.1.2A, 8.6.1.3.

Information Element	Value/Remark
- Intra-frequency measurement system information	
- New intra-frequency cells	32
- Intra-frequency cell id	n(n=0, 4, 5, 6, 9, 10 and 12 to 31)
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present

Contents of Scheduling Block 1 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.2.1 test case.

Information Element	Value/Remark
- References to other system information blocks	
- SIB_REP	128
- SIB_POS	6
- SIB_POS offset info	3
- SIB type SIBs only	System Information Type 6
- SIB_POS	4
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	6
- SIB_REP	128
- SIB_POS	54
- SIB_POS offset info	5
- SIB_OFF	4
- SIB_OFF	2
- SIB_OFF	2
- SIB_OFF	8
- SIB_OFF	4
- SIB type SIBs only	System Information Type 11
- SIB_REP	128
- SIB_POS	26
- SIB_POS offset info	2
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	1
- SIB_REP	128
- SIB_POS	36
- SIB type SIBs only	System Information Type 18

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.2.1.

Information Element	Value/Remark
- New intra-frequency cells	24
- Intra-frequency cell id	12+n(n=0 to17)
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-frequency measurement system information	
- New inter-frequency cells	16
- Inter frequency cell id	7+n (n =0 to 12)
- Frequency info	Not Present Absence of this IE is equivalent to value of the previous "frequency info" in the list.
- Cell info	Same content as specified for Inter-frequency cell id=4 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-RAT measurement system information	Not Present

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**506**	⌘**rev**	**-**	⌘ Current version: **5.6.0** ⌘

*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 OCNS value in 8.7.2.2		
Source:	⌘ Anritsu		
Work item code:	⌘	***Date:*** ⌘	3/2/2005
Category:	⌘ **F**	***Release:*** ⌘	Rel-5
	Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*	

Reason for change:	⌘ OCNS values of Test 1, Test 2, and Test3 are not aligned with TS25.133
Summary of change:	⌘ OCNS values of Test 1, Test 2, and Test3 are corrected in table 8.7.2.2.2.4
Consequences if not approved:	⌘ No alignment with the core specification.

Clauses affected:	⌘ 8.7.2.2				
		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.

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.

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

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

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

Table 8.7.2.2.2.1: 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	dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	-94.46	-94.46
	Band II				-85.27	-85.27	-92.46	-92.46
	Band III				-84.27	-84.27	-91.46	-91.46
Îor/Ioc		dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/Io, Note 1		dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
Io, Note 1	Band I	dBm/3.84 MHz	-50	-50	-86	-86	-94	-94
	Band II				-84	-84	-92	-92
	Band III				-83	-83	-91	-91
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

8.7.2.2.2.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.2.2.4.

2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

4) SS shall transmit a MEASUREMENT CONTROL message for intra frequency measurement and transmit another MEASUREMENT CONTROL message for inter frequency measurement.

5) UE shall transmit periodically MEASUREMENT REPORT messages.

6) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio measured from Cell 1 is compared to CPICH_Ec/Io power value measured from Cell 2 for each MEASUREMENT REPORT message.

7) The result of step 6) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.

8) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6) and 7) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6) and 7) above are repeated.

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

10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 1):

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

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

First MEASUREMENT CONTROL message for Intra frequency measurement (Step 3):

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -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 and III respectively) shall be added into the required accuracy defined in clause 8.7.2.2.2.2 as shown in table 8.7.2.2.2.3.

Table 8.7.2.2.2.3: CPICH_Ec/Io Inter frequency relative accuracy, test requirements

Parameter	Unit	Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I	Band II	Band III
CPICH_Ec/Io	dB	±3.5 for -14 ≤ CPICH Ec/Io ±4 for -16 ≤ CPICH Ec/Io < -14 ±5 for -20 ≤ CPICH Ec/Io < -16	± 5	-94...-87	-92...-85	-91...-84
		±2.3 for -14 ≤ CPICH Ec/Io ± 2.8 for -16 ≤ CPICH Ec/Io < -14 ± 3.8 for -20 ≤ CPICH Ec/Io < -16	± 3.8	-87...-50	-85...-50	-84...-50

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

Table 8.7.2.2.2.4: CPICH Ec/Io Inter frequency tests parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
DPCH_Ec/Ior		dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior		dB	-1.~~12~~11	-0.~~95~~94	-2.~~55~~56	-0.94	-2.~~55~~56	-0.94
Ioc	Band I	dBm/ 3.84 MHz	-53.5	-53.5	-86.27	-86.27	-93.46	-93.46
	Band II				-84.27	-84.27	-91.46	-91.46
	Band III				-83.27	-83.27	-90.46	-90.46
Îor/Ioc		dB	-1.45	-1.45	-4.4	-4.4	-9.24	-9.24
CPICH Ec/Io, Note 1		dBm	-13.8	-13.8	-15.7	-15.7	-19.7	-19.7
Io, Note 1	Band I	dBm /3.84 MHz	-51.15	-51.15	-84.9	-84.9	-93	-93
	Band II				-82.9	-82.9	-91	-91
	Band III				-81.9	-81.9	-90	-90
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

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

The reported values for the relative inter frequency CPICH Ec/Io measurement shall meet the requirements in table 8.7.2.2.2.5.

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CHANGE REQUEST

⌘	**34.121**	**CR**	**511**	⌘ **rev**	**-**	⌘	Current version:	**5.6.0**	⌘

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 8.4.2			
Source:	⌘	Intel			
Work item code:	⌘	TEI	***Date:***	⌘	3/2/2005
Category:	⌘	**D**	***Release:***	⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.			*Use one of the following releases:* *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 test accuracy requirements shall be according to open loop power control requirements (2) The test procedure in section 8.4.2.4 refers to table 8.4.2.1.2 instead of table 8.4.2.4.1. (3) Table F.4.4 in Annex F.4 doesn't contain the correct values
Summary of change:	⌘	(1) Adding explanation to the Minimum requirements, to allign this section with the open loop power control minimum requirements (2) Adding clarification to the Test purpose (3) Changing the table in the Test requirements to include open loop power control test tolerance (4) Changing the reference table to table 8.4.2.4.1. (5) Changing table F.4.4 in Annex F.4 with the correct values (6) Adding references to the core specifications
Consequences if not approved:	⌘	Different test parameters will be configured, leading to improper testing.

Clauses affected:	⌘	8.4.2.4, Annex F.4				
		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.				

8.4.2.4 Correct behaviour when reaching maximum transmit power

8.4.2.4.1 Definition and applicability

The random access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The random access shall provide a fast access but without disturbing ongoing connections. The random access is specified in clause 6 of TS 25.214 [5] and the control of the RACH transmission is specified in clause 11.2 of TS 25.321[13]. A random access transmit sequence is described in clause 6.7.2 of TS 25.303 [12].

8.4.2.4.2 Minimum Requirements

The UE shall not exceed the maximum allowed UL TX power, which is specified in Table 8.4.2.4.1 and configured by the SS, with more than the accuracy tolerances as defined in section 6.5 of TS 25.133 [2].

Section 6.5 of TS25.133 [2] states that for UE output powers that are outside the range covered by the UE transmitted power measurement the UE output power shall not exceed the Maximum allowed UL TX Power with more than the tolerances specified for the Open loop power control in TS 25.101 [1] section 6.4.1.

No ACK/NACK shall be sent by SS during this test.

~~The absolute power of any preambles belonging to the first or second preamble cycle shall not exceed 0 dBm with more than specified in section 6.5 of TS 25.133.~~

~~The normative reference for this requirements is TS 25.133 [2] clauses 6.3.2 and A.6.2.2.4.~~

8.4.2.4.3 Test purpose

The purpose of this test is to verify that the PRACH power behavior when reaching Maximum allowed UL TX power is correct. ~~settings are within specified limits.~~

8.4.2.4.4 Method of test

8.4.2.4.4.1 Initial condition

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

See TS 34.108 [3] for details regarding generic call setup procedure.

Table 8.4.2.~~1.6~~4.1: UE parameters for correct behaviour when reaching maximum transmit power

Parameter	Unit	Value
Access Service Class (ASC#0) *- Persistence value*	0..1	1
Maximum number of preamble ramping cycles (M_{max}).		2
Maximum number of preambles in one preamble ramping cycle (Preamble Retrans Max)		12
The backoff time T_{B01} N_{B01min}=N_{B01max}	ms #TTI	N/A 10
Power step when no acquisition indicator is received (Power offset P0)	dB	3
Power offset between the last transmitted preamble and the control part of the message (Power offset P p-m)	dB	0
Maximum allowed UL TX power	dBm	0

8.4.2.4.4.2 Procedure

1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.~~1.2~~4.1 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that SS shall transmit no AICH.

2) Set the TX output level of the SS to obtain $\hat{I}_{or}$ at the UE antenna connector. $\hat{I}_{or}$ shall be according to table 8.4.2.1.4.

3) Measure ~~the~~ all PRACH preamble output power of the UE according to annex B.

8.4.2.4.5 Test requirements

The UE shall not exceed the ~~maximum~~ Maximum allowed UL TX power configured by the SS with more than the tolerance specified in Table 8.4.2.4.2. ~~No ACK/NACK shall be sent by SS during this test.~~

~~The absolute power of any preambles belonging to the first or second preamble cycle shall not exceed 0 dBm with more than the tolerance specified in section 6.5 of TS 25.133.~~

Table 8.4.2.4.2:
Test requirement for maximum preamble power

	Maximum preamble power
Test requirement	0dBm ~~+2.7, -3~~±10dB

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

<<<<<< Unchanged Sections Removed >>>>>>>>>>>

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

Test	Test Parameters in TS 25.133 [2]	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH\_E_c}{I_{or}}$ = -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:
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].		

Test	Test Parameters in TS 25.133 [2]	Test Tolerance (TT)	Test Requirement in TS 34.121
	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			
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].		

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

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

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

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

Test	Test Parameters in TS 25.133 [2]	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control			
8.4.1 RRC Re-establishment delay	TBD		
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.

Test	Test Parameters in TS 25.133 [2]	Test Tolerance (TT)	Test Requirement in TS 34.121
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
8.4.3 Transport format combination selection in UE	DL Power control is ON so DPCH_Ec/Ior depends on TPC commands sent by UE	0 dB for DPCH_Ec/Ior	No test requirements for DPCH_Ec/Ior
8.5 Timing and Signalling Characteristics	TBD		
8.5.1 UE Transmit Timing	TBD		
8.6 UE Measurements Procedures			
8.6.1 FDD intra frequency measurements			
8.6.1.1 Event triggered reporting in AWGN propagation conditions (R99)	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 to T4: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1 to T4: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T1 to T4: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	During T1/T4 only : Already covered above	During T1/T4 only: Covered above	During T1/T4 only: Already covered above
	During T2/T3 only: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T2/T3 only: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T2/T3 only: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.1 A Event triggered reporting in AWGN propagation conditions (Rel-4 and later)	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 / T2 / T3: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1 / T2 / T3: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T1 / T2 / T3: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	During T1/T3 only : Already covered above	During T1/T3 only: Covered above	During T1/T3 only: Already covered above

Test	Test Parameters in TS 25.133 [2]	Test Tolerance (TT)	Test Requirement in TS 34.121
	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 neighbours in AWGN propagation condition (Rel-4 and later)	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T0 to T4: Cell 1, Cell 2 and Cell 3: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB Cell 1: DPCH_Ec/Ior = -17 dB	During T0 to T4: +0.40 dB +0.40 dB +0.40 dB +0.40 dB +0.40 dB	During T0 to T4: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
8.6.1.4 Correct reporting of neighbours in fading propagation condition (R99)	TBD		

Test	Test Parameters in TS 25.133 [2]	Test Tolerance (TT)	Test Requirement in TS 34.121
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 condition	TBD		
8.6.3 TDD measurements	TBD		
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD		
8.6.4 GSM measurements			

Test	Test Parameters in TS 25.133 [2]	Test Tolerance (TT)	Test Requirement in TS 34.121
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

Test	Test Parameters in TS 25.133 [2]	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.3A GSM Carrier RSSI	TBD		
8.7.3B Transport channel BLER	TBD		
8.7.3C UE Transmitted power	Accuracy upper limit Accuracy lower limit Depends on PUEMAX see table 8.7.3C.2.1	0.7 dB	Formula: Upper accuracy limit + TT Lower accuracy limit – 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
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

Test	Test Parameters in TS 25.133 [2]	Test Tolerance (TT)	Test Requirement in TS 34.121
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		

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**512**	⌘ **rev**	**-**	⌘ Current version: **5.6.0** ⌘

*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 the event triggered reporting test cases		
Source:	⌘ Anritsu		
Work item code:	⌘	***Date:*** ⌘	3/3/2005
Category:	⌘ **F**	***Release:*** ⌘	Rel-5
	Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*	

Reason for change:	⌘ In the end of the test procedure, the MEASUREMENT REPORT message is already recived in specified time. So, It is not necessary to wait additional time for measurement reporting delay.
Summary of change:	⌘ Test procedure is changed to receive the MEASUREMENT REPORT message in specified time.
Consequences if not approved:	⌘ Unnecessary long test time takes for the event triggered reporting test cases.

Clauses affected:	⌘ 8.6.1.1, 8.6.1.1A, 8.6.1.2, 8.6.1.2A, 8.6.1.3, 8.6.1.3A, 8.6.2, 8.6.4				
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘ This CR applies for Rel-99 and later releases.				

How to create CRs using this form:

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

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

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

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

8.6.1 FDD intra frequency measurements

8.6.1.1 Event triggered reporting in AWGN propagation conditions (R99)

8.6.1.1.1 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 Release 99 FDD UE.

8.6.1.1.2 Minimum requirements

The UE shall be able to identify and decode the SFN of a new detectable cell belonging to the monitored set within

$$\mathrm{T}_{\text{identify intra}} = Max\left\{800, \mathrm{T}_{\text{basic identify FDD, intra}} \cdot \frac{\mathrm{T}_{\text{Measurement Period, Intra}}}{\mathrm{T}_{\text{Intra}}}\right\} ms$$

A cell shall be considered detectable when CPICH Ec/Io $\geq$ -20 dB, SCH_Ec/Io $\geq$ -20 dB for at least one channel tap and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

In the CELL_DCH state the measurement period for intra frequency measurements is 200 ms. When no transmission gap pattern sequence is activated, the UE shall be capable of performing CPICH measurements for 8 identified intra-frequency cells of the monitored set and/or the active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 200 ms. When one or more transmission gap pattern sequences are activated, the UE shall be capable of performing CPICH measurements for at least $\mathrm{Y}_{\text{measurement intra}}$ cells , where $\mathrm{Y}_{\text{measurement intra}}$ is defined in the following equation. The measurement accuracy for all measured cells shall be as specified in the sub-clause 9.1.1 and 9.1.2 of TS 25.133 [2]. If the UE has identified more than $\mathrm{Y}_{\text{measurement intra}}$ cells, the UE shall perform measurements of all identified cells but the reporting rate of CPICH measurements of cells from UE physical layer to higher layers may be decreased.

$$\mathrm{Y}_{\text{measurement intra}} = Floor\left\{X_{\text{basic measurement FDD}} \cdot \frac{\mathrm{T}_{\text{Intra}}}{\mathrm{T}_{\text{Measurement Period, Intra}}}\right\} \text{ cells}$$

where

$\mathrm{X}_{\text{basic measurement FDD}}$ = 8 (cells)

$\mathrm{T}_{\text{Measurement\_Period Intra}}$ = 200 ms. The measurement period for Intra frequency CPICH measurements.

$\mathrm{T}_{\text{Intra}}$: This is the minimum time that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing.

$\mathrm{T}_{\text{basic\_identify\_FDD, intra}}$ = 800 ms. This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.

The event triggered measurement reporting delay, on cells belonging to monitored set, measured without L3 filtering, shall be less than the above defined $\mathrm{T}_{\text{identify intra}}$ defined above.

If a cell, belonging to monitored set, which the UE has identified and measured at least once over the measurement period, becomes undetectable for a period < 5 seconds and then the cell becomes detectable again and triggers an event, the measurement reporting delay shall be less than $\mathrm{T}_{\text{Measurement\_Period Intra}}$ ms provided the timing to that cell has not changed more than +/-32 chips, the UE CPICH measurement capabilities defined above are valid and L3 filtering has not been used. When L3 filtering is used an additional delay can be expected.

If a cell belonging to monitored set has been detectable at least for the time period $T_{identify\_intra}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement\_Period\ Intra}$ when the L3 filter has not been used and the UE CPICH measurement capabilities defined above are valid.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.1.

8.6.1.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.1.4 Method of test

8.6.1.1.4.1 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 tables 8.6.1.1.1 to 8.6.1.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used and that CPICH Ec/Io and SFN-CFN observed time difference shall be reported together with Event 1A.. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. During time duration T1, the UE shall not have any timing information of cell 2.

Table 8.6.1.1.1: 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		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		24	NOTE: See Annex I for cell information.
T1	s	5	
T2	s	5	
T3	s	1	
T4	s	5	

Table 8.6.1.1.2: Cell specific test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Cell 1				Cell 2			
		T1	T2	T3	T4	T1	T2	T3	T4
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		Note 1	
OCNS		Note 2				-0.941		Note 2	
$\hat{I}_{or}/I_{oc}$	dB	0	6.97	6.97	0	-Infinity	5.97	5.97	-Infinity
$\hat{I}_{or}$ *(Note 3)*	dBm	-70	-63.03	-63.03	-70	-Infinity	-64.03	-64.03	-Infinity
I_{oc}	dBm/3.84 MHz	-70							
CPICH_Ec/Io	dB	-13	-13	-13	-13	-Infinity	-14	-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 : 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.

8.6.1.1.4.2 Procedure

1. The RF parameters are set up according to T1 in table 8.6.1.1.3, with cell 1 active.
2. The UE is switched on.
3. A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
4. SS shall transmit a MEASUREMENT CONTROL message.
5. After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in table 8.6.1.1.3.
6. UE shall transmit a MEASUREMENT REPORT message triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
7. 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 the RRC procedure delay prior to the beginning of T3.
8. After 6 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T4 in table 8.6.1.1.3.
9. UE shall transmit a MEASUREMENT REPORT message triggered by event 1B. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
10. After the SS receive the MEASUREMENT REPORT message in step 9) or 5 seconds after the beginning of T4~~After 5 seconds from the beginning of T4~~, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
11. Repeat steps 1-10 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:

{Unchanged Sections are clipped here}

8.6.1.1 A Event triggered reporting in AWGN propagation conditions (Rel-4 and later)

8.6.1.1 A.1 Definition and applicability

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

The requirements and this test apply to the Rel-4 and later FDD UE.

8.6.1.1 A.2 Minimum requirements

The UE shall be able to identify and decode the SFN of a new detectable cell belonging to the monitored set within

$$\mathrm{T}_{\text{identify intra}} = Max\left\{800, \mathrm{T}_{\text{basic identify FDD, intra}} \cdot \frac{\mathrm{T}_{\text{Measurement Period, Intra}}}{\mathrm{T}_{\text{Intra}}}\right\} ms$$

A cell shall be considered detectable when CPICH Ec/Io $\geq$ -20 dB, SCH_Ec/Io $\geq$ -20 dB for at least one channel tap and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

In the CELL_DCH state the measurement period for intra frequency measurements is 200 ms. When no transmission gap pattern sequence is activated, the UE shall be capable of performing CPICH measurements for 8 identified intra-frequency cells of the monitored set and/or the active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 200 ms. When one or more transmission gap pattern sequences are activated, the UE shall be capable of performing CPICH measurements for at least $\mathrm{Y}_{\text{measurement intra}}$ cells , where $\mathrm{Y}_{\text{measurement intra}}$ is defined in the following equation. The measurement accuracy for all measured cells shall be as specified in the sub-clause 9.1.1 and 9.1.2 of TS 25.133 [2]. If the UE has identified more than $\mathrm{Y}_{\text{measurement intra}}$ cells, the UE shall perform measurements of all identified cells but the reporting rate of CPICH measurements of cells from UE physical layer to higher layers may be decreased.

$$\mathrm{Y}_{\text{measurement intra}} = Floor\left\{X_{\text{basic measurement FDD}} \cdot \frac{\mathrm{T}_{\text{Intra}}}{\mathrm{T}_{\text{Measurement Period, Intra}}}\right\} \text{ cells}$$

where

$\mathrm{X}_{\text{basic measurement FDD}}$ = 8 (cells)

$\mathrm{T}_{\text{Measurement\_Period Intra}}$ = 200 ms. The measurement period for Intra frequency CPICH measurements.

$\mathrm{T}_{\text{Intra}}$: This is the minimum time that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing.

$\mathrm{T}_{\text{basic\_identify\_FDD, intra}}$ = 800 ms. This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.

The event triggered measurement reporting delay, on cells belonging to monitored set, measured without L3 filtering, shall be less than the above defined $\mathrm{T}_{\text{identify intra}}$ defined above.

If a cell, belonging to monitored set, which the UE has identified and measured at least once over the measurement period, becomes undetectable for a period < 5 seconds and then the cell becomes detectable again and triggers an event, the measurement reporting delay shall be less than $T_{Measurement\_Period\ Intra}$ ms provided the timing to that cell has not changed more than +/-32 chips, the UE CPICH measurement capabilities defined above are valid and L3 filtering has not been used. When L3 filtering is used an additional delay can be expected.

If a cell belonging to monitored set has been detectable at least for the time period $T_{identify\_intra}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement\_Period\ Intra}$ when the L3 filter has not been used and the UE CPICH measurement capabilities defined above are valid.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.1.

8.6.1.1 A.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.1 A.4 Method of test

8.6.1.1 A.4.1 Initial conditions

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

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

The test parameters are given in tables 8.6.1.1 A.1 to 8.6.1.1 A.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. During time duration T1, the UE shall not have any timing information of cell 2.

Table 8.6.1.1 A.1: General test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24	NOTE: See Annex I for cell information
T1	s	5	
T2	s	5	
T3	s	5	

Table 8.6.1.1 A.2: Cell specific test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
CPICH_Ec/Ior	dB	-10			-10		
PCCPCH_Ec/Ior	dB	-12			-12		
SCH_Ec/Ior	dB	-12			-12		
PICH_Ec/Ior	dB	-15			-15		
DPCH_Ec/Ior	dB	-17			N/A		
OCNS_Ec/Ior	dB	-1.049			-0.941		
$\hat{I}_{or}/I_{oc}$	dB	0	6.97	0	-Infinity	5.97	-Infinity
$\hat{I}_{or}$ *(Note 1)*	dBm	-70	-63.03	-70	-Infinity	-64.03	-Infinity
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/Io	dB	-13	-13	-13	-Infinity	-14	-Infinity
Propagation Condition		AWGN					
Note 1: The nominal 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.							

8.6.1.1 A.4.2 Procedure

1. The RF parameters are set up according to T1 in table 8.6.1.1 A.3.
2. The UE is switched on.
3. A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
4. SS shall transmit a MEASUREMENT CONTROL message.
5. After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in table 8.6.1.1 A.3.
6. UE shall transmit a MEASUREMENT REPORT message triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
7. After 5 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3 in table 8.6.1.1 A.3.
8. UE shall transmit a MEASUREMENT REPORT message triggered by event 1B. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
9. After the SS receive the MEASUREMENT REPORT message in step 8) or 5 seconds after the beginning of T3~~After 5 seconds from the beginning of T3~~, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
10. Repeat steps 1-9 according to Annex F.6.2 Table 6.2.8.

Specific Message Contents

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

{Unchanged Sections are clipped here}

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	5	
T5	s	1	
T6	s	10	

Table 8.6.1.2.3: Cell specific test parameters for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit	Cell 1						Cell 2						Cell3					
		T1	T2	T3	T4	T5	T6	T1	T2	T3	T4	T5	T6	T1	T2	T3	T4	T5	T6
CPICH_Ec/Ior	dB	-10						-10						-10					
PCCPCH_Ec/Ior	dB	-12						-12						-12					
SCH_Ec/Ior	dB	-12						-12						-12					
PICH_Ec/Ior	dB	-15						-15						-15					
DPCH_Ec/Ior	dB	Note 1						N/A						N/A	Note 1			N/A	
OCNS_Ec/Ior	dB	Note 2						-0.941						-0.941	Note 2			-0.941	
$\hat{I}_{or}/I_{oc}$	dB	6.97		6.93	5.97		6.12	-Inf		9.43	6.97		7.62	5.97		6.93	-Inf		5.62
$\hat{I}_{or}$ (Note 3)	dBm	-78.03		-78.07	-79.03		-78.88	-Inf		-75.57	-78.03		-77.38	-79.03		-78.07	-Inf		-79.38
I_{oc}	dBm/ 3.84 MHz	-85																	
CPICH_Ec/Io	dB	-13		-16	-14		-15.5	-Inf		-13.5	-13		-14	-14		-16	-Inf		-16
Propagation Condition		AWGN																	
Note 1: The DPCH level is controlled by the power control loop Note 2 :The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or} Note 3 :The nominal 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 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~~After 10 seconds from the beginning of T6~~, the UE is switched off.

22) Repeat steps 1-21 until the confidence level according to annex F.6.2 is achieved.

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:

{Unchanged Sections are clipped here}

8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)

8.6.1.2A.1 Definition and applicability

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

The requirements and this test apply to the Rel-4 and later FDD UE.

8.6.1.2A.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1A.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.2.

8.6.1.2A.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.2A.4 Method of test

8.6.1.2A.4.1 Initial conditions

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

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

The initial test parameters are given in table 8.6.1.2A.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	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 8.6.1.2A.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				N/A				N/A			
OCNS_Ec/Ior	dB	-1.049				-0.941				-0.941			
$\hat{I}_{or}/I_{oc}$	dB	6.97	6.93	5.97	6.12	-Inf	9.43	6.97	7.62	5.97	6.93	-Inf	5.62
$\hat{I}_{or}$ *(Note 1)*	dBm	-78.03	-78.07	-79.03	-78.88	-Inf	-75.57	-78.03	-77.38	-79.03	-78.07	-Inf	-79.38
I_{oc}	dBm/3.84 MHz	-85											
CPICH_Ec/Io	dB	-13	-16	-14	-15.5	-Inf	-13.5	-13	-14	-14	-16	-Inf	-16
Propagation Condition	AWGN												
Note 1: The nominal 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.													

8.6.1.2A.4.2 Procedure

1) The RF parameters are set up according to T0 in table 8.6.1.2A.4.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
4) SS shall transmit a MEASUREMENT CONTROL message.
5) 5 seconds after step4 has completed, the SS shall switch the power settings for T0 to T1 in table 8.6.1.2A.5.
6) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T1 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
7) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
8) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in table 8.6.1.2A.5.
9) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
10) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
11) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
12) After 10 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3 in table 8.6.1.2A.5.

13) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1B. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

14) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

15) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4 in table 8.6.1.2A.5.

16) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

17) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

18) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

19) After the SS receive the MEASUREMENT REPORT message in step 18) or 10 seconds after the beginning of T4~~After 10 seconds from the beginning of T4~~, the UE is switched off.

20) Repeat steps 1-19 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

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

{Unchanged Sections are clipped here}

8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition (R99)

8.6.1.3.1 Definition and applicability

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

The requirements and this test apply to the Release 99 FDD UE.

8.6.1.3.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.3.

8.6.1.3.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.3.4 Method of test

8.6.1.3.4.1 Initial conditions

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

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

The initial test parameters are given in table 8.6.1.3.4.

Table 8.6.1.3.1: Cell specific initial test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	5.870	-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 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.~~

7) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

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

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

11) 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) After the SS receive the MEASUREMENT REPORT message in step 11) or 10 seconds after the beginning of T5~~After 10 seconds~~, the UE is switched off.

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

Specific Message Contents

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

{Unchanged Sections are clipped here}

8.6.1.3A Event triggered reporting of two detectable neighbours in AWGN propagation condition (Rel-4 and later)

8.6.1.3A.1 Definition and applicability

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

The requirements and this test apply to the Rel-4 and later FDD UE.

8.6.1.3A.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.3.

8.6.1.3A.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.3A.4 Method of test

8.6.1.3A.4.1 Initial conditions

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

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

The initial test parameters are given in table 8.6.1.3A.4.

Table 8.6.1.3A.1: Cell specific initial test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	5.87	-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 8.6.1.3A2 and 8.6.1.3A.5. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used and the periodical reporting of the events is not applied. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. In the initial condition before the time T1 only Cell1 is active.

Table 8.6.1.3A.2: General test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	Ms	0	
Filter coefficient		0	
Monitored cell list size		32	NOTE: See Annex I for cell information.
T1	S	10	
T2	S	10	
T3	S	10	
T4	S	10	

Table 8.6.1.3A.3: Cell specific test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2				Cell3			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
CPICH_Ec/Ior	dB	-10				-10				-10			
PCCPCH_Ec/Ior	dB	-12				-12				-12			
SCH_Ec/Ior	dB	-12				-12				-12			
PICH_Ec/Ior	dB	-15				-15				-15			
DPCH_Ec/Ior	dB	-17				N/A				N/A			
OCNS_Ec/Ior	dB	-1.049				-0.941				-0.941			
$\hat{I}_{or}/I_{oc}$	dB	14.55	28.51	14.45	28.51	-Inf	27.51	13.95	21.51	8.05	21.51	13.95	27.51
$\hat{I}_{or}$ *(Note 1)*	dBm	-70.45	-56.49	-70.55	-56.49	-Inf	-57.49	-71.05	-63.49	-76.95	-63.49	-71.05	-57.49
I_{oc}	dBm/3.84 MHz	-85											
CPICH_Ec/Io	dB	-11	-13	-14.5	-13	-Inf	-14.0	-15	-20	-17.5	-20	-15	-14
Propagation Condition		AWGN											
Note 1: The nominal 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.													

8.6.1.3A.4.2 Procedure

1) The RF parameters are set up according to T0 in table 8.6.1.3A.4.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 10 seconds from the beginning T0, the SS shall switch the power settings from T0 to T1 in 8.6.1.3A.5.

6) After a total of 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

7) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

8) After 10 seconds from the beginning T2, the SS shall switch the power settings from T2 to T3.

9) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

10) After 10 seconds from the beginning T3, the SS shall switch the power settings from T3 to T4.

11) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1B. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

12) After the SS receive the MEASUREMENT REPORT message in step 11) or 10 seconds after the beginning of T4~~After 10 seconds~~, the UE is switched off.

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

Specific Message Contents

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

{Unchanged Sections are clipped here}

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 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.

$T_{basic\_measurement\_FDD\ inter}$ = 50 ms. This is the time period used in the equation for defining the measurement period for inter frequency CPICH measurements.

N_{Freq}: Number of FDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than T $_{identify\ inter}$ defined in Clause 8.1.2.3.1 of 25.133 When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{identify\_inter}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement\_Period\ Inter}$ provided the timing to that cell has not changed more than +/-32 chips while transmission gap has not been available and the L3 filter has not been used.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.3 and A.8.2.1.

8.6.2.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.2.1.4 Method of test

8.6.2.1.4.1 Initial conditions

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

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

The initial test parameters are given in table 8.6.2.1.1

Table 8.6.2.1.1: Cell specific initial test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	0	-Inf	-Inf
$\hat{I}_{or}$ *(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~~After 5 seconds from the beginning of T2~~, the UE is switched off.

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

NOTE: The measurement reporting delay is 956.2 ms plus 80 ms delay uncertainty (twice the TTI). This gives a total of 1036.2 ms and rounded off to 1040 ms.

Specific Message Contents

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

{Unchanged Sections are clipped here}

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~~After 40 seconds from 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:

{Unchanged Sections are clipped here}

8.6.4 GSM measurements

8.6.4.1 Correct reporting of GSM neighbours in AWGN propagation condition

8.6.4.1.1 Definition and applicability

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

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

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8.6.4.1.2 Minimum requirements

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

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

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

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

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

8.6.4.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.4.1.4 Method of test

8.6.4.1.4.1 Test 1 initial conditions

Test 1 with BSIC verification required case:

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

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

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

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

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

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

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

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

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

8.6.4.1.4.2 Test 1 Procedure

1) The RF parameters are set up according to T1 in Table 8.6.4.2 and 8.6.4.7.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
4) SS shall transmit a MEASUREMENT CONTROL message.
5) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in Table 8.6.4.2 and 8.6.4.7 .
6) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C. The measurement reporting delay from the beginning of T2 shall be less than 6.32s. 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~~After 5 seconds from the beginning of T3~~, the UE is switched off.
10) Repeat steps 1-9 according to Annex F.6.2 Table F.6.2.8.

Specific Message Contents

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

{Unchanged Sections are clipped here}

8.6.4.1.4.3 Test 2 initial conditions

Test 2 without BSIC verification required case:

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

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

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

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

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

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

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

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

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

8.6.4.1.4.4 Test 2 Procedure

1) The RF parameters are set up according to T1 in Table 8.6.4.5 and 8.6.4.8.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
4) SS shall transmit a MEASUREMENT CONTROL message.
5) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in Table 8.6.4.5 and 8.6.4.8.
6) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C. The measurement reporting delay from the beginning of T2 shall be less than 1040 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~~After 5 seconds from the beginning of T3~~, the UE is switched off.
10) Repeat steps 1-9 according to Annex F.6.2 Table F.6.2.8.

3GPP TSG-T WG1 Meeting #26
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CR-Form-v7.1

CHANGE REQUEST

⌘	**34.121**	**CR 513**	⌘ **rev**		⌘ Current version:	**5.6.0** ⌘

*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 reporting of CQI			
Source:	⌘ Agilent Technologies, Nokia			
Work item code:	⌘ TEI6		***Date:*** ⌘	3/2/2005
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: ⌘	Corrections have been made to the core requirement I 25.101. There were a number of gaps in the requirements and a need to clarify the text
Summary of change: ⌘	1. Added “Single link” to clause 9.31 and 9.32 titles 2. Removed unhelpful text in 9.3.1.1 definition and applicability. 3. Clarified the applicability with regard to the UE or the releases supporting HSDPA. 4. Changed the title of subclause 9.3.1.2 to add UE categories 1-8, 11 & 12. 5. Added specific reference to the correct downlink channels in table E.5.1. 6. Fixed gap in AWGN requirement which was missing “less than or equal to” for the BLER requirement 7. Clarified name of table 9.3.1.1 8. Removed unnecessary asterix on HS-PDSCH_Ec/Ior in table 9.3.3.1 9. Clarified the signalling pattern for HS-SCCH-1 which is distinct from the transmission pattern. 10. Clarified that HS-SCCH and HS-PDSCH are transmitted continuously with constant power for any one transport format (The power offset “Γ” may make the HS-PDSCH power used in any one TF different from another TF.) 11. Added note 3 to table 9.3.1.1 previously missing from the core requirement 12. Added new note 4 from latest core requirement to table 9.3.1.1

		13. Deleted table 9.3.1.2 for UE categories 11 and 12 which are now incorporated into table 9.3.1.1. 14. Various minor edits related to deleting table 9.3.1.2. 15. Removed reference to categories 7-10 which is now covered at the start of subclause 9.3.1. 16. An equivalent set of changes to the above for subclause 9.3.2 fading.
Consequences if not approved:	⌘	The testing of CQI reporting will not be well defined and may result in failing a good UE.

Clauses affected:	⌘	9.3				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR incorporates the parts of the Nokia CR in T1-050083 applicable to subclause 9.3.				

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.

9.3 Reporting of Channel Quality Indicator

9.3.1 AWGN Propagation Conditions – Single link

9.3.1.1 Definition and applicability

The reporting accuracy of channel quality indicator (CQI) under AWGN environments is determined by the reporting variance and the BLER performance using the transport format indicated by the reported CQI median.

The UE shall be tested only according to the data rate, supported. ~~The data rate corresponding requirements shall apply to the UE.~~

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

9.3.1.2 Minimum requirements

~~For UE capability categories 1-6 and 11, 12:~~

For the parameters specified in Table 9.3.1.1 ~~and 9.3.1.2~~, and using the downlink physical channels specified in table E.5.1 the the reported CQI value shall be in the range of +/-2 of the reported median more than 90% of the time. If the HS-PDSCH BLER using the transport format indicated by median CQI is less than or equal to 0.1, the BLER using the transport format indicated by the (median CQI +2) shall be ~~larger~~ greater than 0.1. If the HS-PDSCH BLER using the transport format indicated by the median CQI is ~~larger~~ greater than 0.1, the BLER using transport format indicated by (median CQI -1) shall be less than or equal to 0.1.

Table 9.3.1.1: Test Parameters for CQI test in AWGN – single link~~: categories 1-6~~

Parameter	Unit	Test 1	Test 2	Test 3
$\hat{I}_{or}/I_{oc}$	DB	0	5	10
I_{oc}	dBm/3.84 MHz	-60		
Phase reference	-	P-CPICH		
HS-PDSCH E_c/I_{or} ~~(*)~~	DB	-3		
HS-SCCH_1 E_c/I_{or}	DB	-10		
DPCH E_c/I_{or}	DB	-10		
Maximum number of H-ARQ transmission	-	1		
Number of HS-SCCH set to be monitored	-	1		
CQI feedback cycle	Ms	2		
CQI repetition factor	-	1		
HS-~~D~~SCCH-1 ~~transmission~~ signalling pattern	-	~~"XOOXOOX" to incorporate inter-TTI=3 UEs, where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates TTI, in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.~~ To incorporate inter-TTI=3 the six sub-frame HS-SCCH-1 signalling pattern shall be "…XOOXOO…", where "X" indicates TTI in which the HS-SCCH-1 uses the identity of the UE under test, and "O" indicates TTI in which the HS-SCCH-1 uses a different UE identity.		

Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined in [8].

Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI, median CQI -1, median CQI+2 are used. Other physical channel parameters are configured according to the CQI mapping table described in TS25.214

Note 3: HS-PDSCH Ec/Ior is decreased according to reference power adjustment Δ described in TS 25.214

Note 4: For any given transport format the power of the HS-SCCH and HS-PDSCH shall be transmitted continuously with constant power.

~~Table 9.3.1.2: Test Parameter for CQI: categories 11,12~~

~~Parameter~~	~~Unit~~	~~Test 1~~	~~Test 2~~	~~Test 3~~
$\cancel{\hat{I}_{or}/I_{oc}}$	~~DB~~	~~0~~	~~5~~	~~10~~
$\cancel{I_{OC}}$	~~dBm/3.84 MHz~~	~~-60~~		
~~Phase reference~~	~~-~~	~~P-CPICH~~		
~~HS-PDSCH~~ $\cancel{E_c/I_{or}}$ ~~(*)~~	~~DB~~	~~-3~~		
~~HS-SCCH_1~~ $\cancel{E_c/I_{or}}$	~~DB~~	~~-10~~		
~~DPCH~~ $\cancel{E_c/I_{or}}$	~~DB~~	~~-10~~		
~~Maximum number of H-ARQ transmission~~	~~-~~	~~1~~		
~~Number of HS-SCCH set to be monitored~~	~~-~~	~~1~~		
~~CQI feedback cycle~~	~~Ms~~	~~2~~		
~~CQI repetition factor~~	~~-~~	~~1~~		
~~HS-DSCH transmission pattern~~	~~-~~	~~"XOOXOOX", where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates TTI, in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.~~		
~~Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined in [8].~~ ~~Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI, median CQI -1, median CQI+2 are used. Other physical channel parameters are configured according to the CQI mapping table described in TS25.214~~				

The reference for this requirement is TS 25.101 [1] clauses 9.3.1.1. ~~and 9.3.1.2.~~

~~For UE capability categories 7-10:~~

~~FFS~~

9.3.1.3 Test purpose

To verify that the variance of the CQI reports when using TF based on CQI 16 is within the limits defined and that a BLER of 10% falls between the TF based on Median CQI-1 and the TF based on Median CQI TF or between the TF based on Median CQI and the TF based on Median CQI+2.

9.3.1.4 Method of test

9.3.1.4.1 Initial conditions

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

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

1. Connect SS and an AWGN noise source to the UE antenna connector as shown in figure A.16.
2. Set Ack/Nack handling at the SS such that regardless of the response from the UE (Ack, Nack or DTX) new data is sent each time, this is because HARQ transmissions are set to one, i.e. no re-transmission of failed blocks.

9.3.1.4.2 Procedure

1) Set up an HSDPA call according to TS 34.108 [3] clause 7.3.6.3. Set test conditions according to test 1 according table 9.3.1.1 ~~(Category 1-6) or 9.3.1.2 (Category 11,12)~~.

2) Set test conditions according to test 1 according table 9.3.1.1. The configuration of the downlink channels is defined in table E.5.1.

Note: the following part of the procedure will test, if the UE reports a limited range of CQI values under the predefined channel conditions.

3) The SS shall send TF according to CQI value 16 and keep it regardless of the CQI value sent by the UE. For any HSDPA block transmitted by the SS, record the received CQI value. Continue transmission of the HS-PDSCH and CQI collection until [2000] reports have been gathered.

4) Set up a relative frequency distribution for the CQI-values, reported. Calculate the median value (Median CQI is the CQI that is at or crosses 50% distribution from the lower CQI side). This CQI-value is declared as Median CQI value,

5) If [1800] or more of the CQI values are in the range (Median CQI - 2) ≤ Median CQI ≤ (Median CQI + 2) then continue with step 6), otherwise fail the UE.

Note: the following part of the procedure will test, if BLER versus CQI has the correct sense.

6) The SS shall transmit the TF according to the median-CQI value and shall not react on the UE's CQI reports. For any HSDPA block, transmitted by the SS, record ACK, NACK and statDTX up to [1000] times

If the ratio (NACK + statDTX / ACK + NACK + statDTX) < 0.1 then goto step 7), otherwise goto step 8)

7) The SS shall transmit the TF according to the median-CQI+2 value and shall not react on the UE's CQIreports. For any HSDPA block, transmitted by the SS, record ACK, NACK or statDTX up to [1000] times

   If the ratio (NACK + statDTX /ACK + NACK + statDTX) ≥ 0.1

   then pass the UE, otherwise fail the UE

8) The SS shall transmit the TF according to the median-CQI-1 value and shall not react on the UE's CQI value. For any HSDPA block, transmitted by the SS, record ACK, NACK statDTX up to [1000] times

If the ratio (NACK + statDTX / ACK + NACK + statDTX) < 0.1

then pass the UE, otherwise fail the UE.

Note: The statistical selectivity based on [1000] samples is not sufficient to distinguish between BLER < 0.1 and > 0.1. However, it is assumed that the difference between

[true BLER on Median CQI - true BLER on (Median CQI + 2)] and
[true BLER on Median CQI - true BLER on (Median CQI - 1)]

is large enough to exceed the statistical uncertainty and hence the measurement can indicate the correct sense of BLER.

9) Repeat the same procedure (steps 3 to 8) with test conditions according to the table 9.3.1.1 ~~and table 9.3.1.2~~ for Test 2 and Test 3.

9.3.1.5 Test Requirements

The pass fail decision as specified in the test procedure in 9.3.1.4.2.

No test tolerance is applied to the test parameters.

9.3.2 Fading Propagation Conditions – Single link

9.3.2.1 Definition and applicability

The reporting accuracy of the channel quality indicator (CQI) under fading environments is determined by the BLER performance using the transport format indicated by the reported CQI median.

In calculating BLER for an HARQ process, if an odd number of consecutive statDTXs are reported, the corresponding packets and one subsequent packet shall be discarded from BLER calculation. If an even number of consecutive statDTXs are reported, only the corresponding packets shall be discarded from BLER calculation.

The requirements and th~~e~~is test ~~case~~ apply for Release 5 and later releases to all types of UTRA for the FDD UE that support~~s~~ 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.

9.3.2.2 Minimum requirements

For the parameters specified in Table 9.3.2.1, and using the downlink physical channels specified in table E.5.1, the requirements are specified in terms of maximum BLERs at particular reported CQIs when transmitting a fixed transport format given by the CQI median as shown in Table 9.3.2.2.. The BLER at a particular reported CQI is obtained by associating a particular CQI reference measurement period with the HS-PDSCH subframe overlapping with the end of this CQI reference measurement period and calculating the fraction of erroneous HS-PDSCH subframes.

Table 9.3.2.1: Test Parameters for CQI test in fading – single link~~: categories 1-6~~

Parameter	Unit	Test 1	Test 2
HS-PDSCH E_c/I_{or} ~~(*)~~	DB	-8	-4
$\hat{I}_{or}/I_{oc}$	DB	0	5
I_{oc}	dBm/3.84 MHz	-60	
Phase reference	-	P-CPICH	
HS-SCCH_1 E_c/I_{or}	DB	-8.5	
DPCH E_c/I_{or}	DB	-6	
Maximum number of H-ARQ transmission	-	1	
Number of HS-SCCH set to be monitored	-	1	
CQI feedback cycle	Ms	2	
CQI repetition factor	-	1	
HS-~~D~~SCCH-1 ~~transmission~~ signalling pattern	-	~~"….XOOXOOX…." to incorporate inter-TTI=3 UEs, where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates TTI in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.~~ To incorporate inter-TTI=3 the six sub-frame HS-SCCH-1 signalling pattern shall be "…XOOXOO…", where "X" indicates TTI in which the HS-SCCH-1 uses the identity of the UE under test, and "O" indicates TTI in which the HS-SCCH-1 uses a different UE identity.	
Propagation Channel		Case 8	
Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined in [7]			
Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI is used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214			
Note 3: HS-PDSCH Ec/Ior is decreased according to reference power adjustment Δ described in TS 25.214			
Note 4: For any given transport format the power of the HS-SCCH and HS-PDSCH shall be transmitted continuously with constant power.			

Table 9.3.2.2: Minimum requirement for CQI test in fading – single link ~~for categories 1-6~~

Reported CQI	Maximum BLER	
	Test 1	Test2
CQI median	60%	60%
CQI median + 3	15%	15%

~~For the parameters specified in Table 9.3.2.3, the requirements are specified in terms of BLERs at particular reported CQIs when a fixed transport format given by CQI median as shown in Table 9.3.2.4. The BLER at a particular reported CQI is obtained by associating a particular CQI reference measurement period with the HS-PDSCH subframe overlapping with the end of this CQI reference measurement period and calculating the fraction of erroneous HS-PDSCH subframes.~~

~~**Table 9.3.2.3: Test Parameters for CQI test in fading: categories 11-12**~~

~~Parameter~~	~~Unit~~	~~Test 1~~	~~Test 2~~
~~HS-PDSCH~~ $\cancel{E_c / I_{or}}$ ~~(*)~~	~~dB~~	~~-8~~	~~-4~~
$\cancel{\hat{I}_{or} / I_{oc}}$	~~dB~~	~~0~~	~~5~~
$\cancel{I_{OC}}$	~~DBm/3.84 MHz~~	~~-60~~	
~~Phase reference~~	~~-~~	~~P-CPICH~~	
~~HS-SCCH_1~~ $\cancel{E_c / I_{or}}$	~~dB~~	~~-8.5~~	
~~DPCH~~ $\cancel{E_c / I_{or}}$	~~dB~~	~~-6~~	
~~Maximum number of H-ARQ transmission~~	~~-~~	~~1~~	
~~Number of HS-SCCH set to be monitored~~	~~-~~	~~1~~	
~~CQI feedback cycle~~	~~ms~~	~~2~~	
~~CQI repetition factor~~	~~-~~	~~1~~	
~~HS-DSCH transmission pattern~~	~~-~~	~~"….XOOXOOX…." to incorporate inter-TTI=3 UEs, where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates TTI, in which the HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.~~	
~~Propagation Channel~~		~~Case 8~~	
~~Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined in [7]~~ ~~Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI is used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214~~			

~~**Table 9.3.2.4: Minimum requirement for CQI test in fading for categories 11-12**~~

~~Reported CQI~~	~~Maximum BLER~~	
	~~Test 1~~	~~Test 2~~
~~CQI median~~	~~60%~~	~~60%~~
~~CQI median + 3~~	~~15%~~	~~15%~~

The reference for this requirement is TS 25.101 [1] clauses 9.3.2.1~~ and 9.3.2.2~~.

9.3.2.3 Test purpose

To verify that when using the TF based on the Median CQI that the BLER for blocks associated with CQI reports of Median CQI is ≤ 60% and that the BLER for blocks associated with CQI reports of Median CQI+3 is ≤ 15%.

9.3.2.4 Method of test

9.3.2.4.1 Initial conditions

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

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

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

2) Set Ack/Nack handling at the SS such that regardless of the response from the UE (Ack, Nack or DTX) new data is sent each time, this is because HARQ transmissions are set to one, i.e. no re-transmission of failed blocks.

9.3.2.4.2 Procedure

1) Set up an HSDPA call according to TS 34.108 [3] clause 7.3.6.3. Set test conditions according to test 1 according table 9.3.2.1~~ (Category 1-6) or 9.3.2.3 (Category 11,12)~~. The configuration of the downlink channels is defined in table E.5.1.

2) For an HSDPA block, transmitted by the SS, record the equivalent CQI value. SS shall not react to the UE's reported CQI value, but only record the reported CQI value.

3) Repeat step 2 up to [2000] times.

4) Set up a relative frequency distribution for the reported CQI values. Calculate the median value (Median CQI is the CQI that is at or crosses 50% distribution from the lower CQI side). This CQI-value is declared as Median CQI value,

5) The SS shall transmit the TF according to the median-CQI value and shall not react to the UE's reported CQI value.

6) Measure BLER as described below. Continue measuring BLER until [1000] events (ACK or NACK discarded DTXs not included) has occurred for each R1 and R2.

In the test there are two BLER requirements to be tested:

R1: HSDPA block with corresponding reported CQI = Median CQI BLER ≤ 60%

R2: HSDPA block with corresponding reported CQI = Median CQI + 3 BLER ≤ 15%

For any HSDPA block, transmitted by the SS, record ACK, NACK or statDTX and the corresponding CQI report. These values are combined to obtain the BLER (Figure 9.3.2.1).

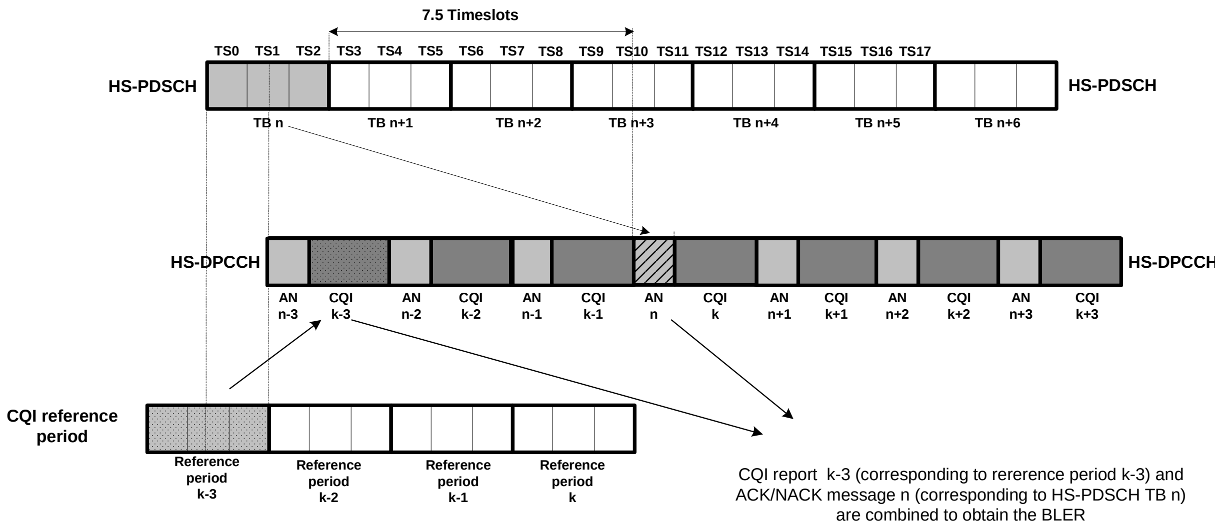

Figure 9.3.2.1 Combination of ACK/NACK message and the CQI report for BLER calculation

For each set of events R1 and R2 the BLER = (NACK + statDTX) / (ACK + NACK + statDTX)

In calculating BLER, for an HARQ process, if an odd number of consecutive DTXs are reported, the corresponding packets and one subsequent packet shall be discarded from BLER calculation. If an even number of consecutive DTXs are reported, only the corresponding packets shall be discarded from BLER calculation

Repeat the same procedure with test conditions according to the test 2 of table 9.3.2.1.~~ and table 9.3.2.3 for the other tests:~~

~~Category 1-6: Test 2 of table 9.3.2.1~~

~~Category 11,12: Test 2 of table 9.3.2.3~~

9.3.2.5 Test Requirements

The measured BLER shall not exceed values specified in tables 9.3.2.2 and 9.3.2.4.

No test tolerance is applied to the test parameters.

3GPP TSG-T WG1 Meeting #26
Bangalore, India, 31 Jan – 4 Feb 2005

Tdoc ⌘T1-050374

CR-Form-v7.1

CHANGE REQUEST

⌘	**34.121**	**CR**	**514**	⌘**rev**	**-**	⌘ Current version:	**5.6.0** ⌘

*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 H Set-4/5 pattern length		
Source:	⌘	Agilent Technologies		
Work item code:	⌘	TEI6	***Date:*** ⌘	3/2/2005
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:	⌘	The transmission pattern for H-Set 4 and 5 could be misinterpreted. Both are defined in terms of 11 sub-frames. It would be much clearer to indicate that the pattern is a six sub-frame repeat cycle and not an 11 sub-frame repeat cycle which would give the wrong throughput figures
Summary of change:	⌘	1. An extra 0 is added to the end of the transmission pattern and a note added to make it clear that the pattern is a repetition of six sub-frames 2. Distincition is made between the transmissionpattern and the signalling pattern
Consequences if not approved:	⌘	Testing using H-Set 4 and H-Set 5 might be implemented incorrectly using a repetition of an 11 sub-frame cycle

Clauses affected:	⌘	C.8.1.				
		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

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.

C.8 DL reference channel parameters for HSDPA tests

C.8.1 Fixed Reference Channel (FRC)

C.8.1.1 Fixed Reference Channel Definition H-Set 1

Table C.8.1.1: Fixed Reference Channel H-Set 1

Parameter	Unit	Value	
Nominal Avg. Inf. Bit Rate	kbps	534	777
Inter-TTI Distance	TTI's	3	3
Number of HARQ Processes	Processes	2	2
Information Bit Payload (N_{INF})	Bits	3202	4664
Number Code Blocks	Blocks	1	1
Binary Channel Bits Per TTI	Bits	4800	7680
Total Available SML's in UE	SML's	19200	19200
Number of SML's per HARQ Proc.	SML's	9600	9600
Coding Rate		0.67	0.61
Number of Physical Channel Codes	Codes	5	4
Modulation		QPSK	16QAM
Note: The HS-DSCH shall be transmitted continuously with constant power but only every third TTI shall be allocated to the UE under test			

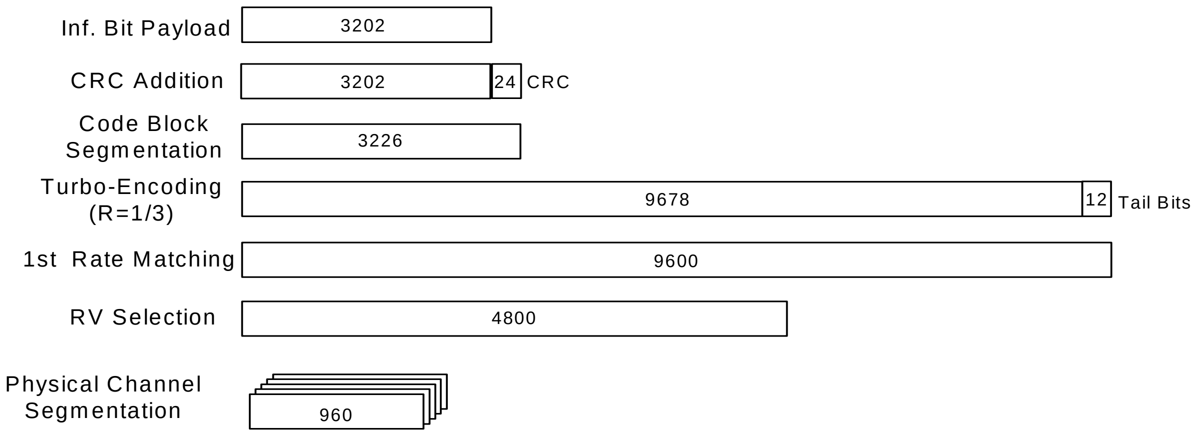

Figure C.8.1: Coding rate for Fixed reference Channel H-Set 1 (QPSK)

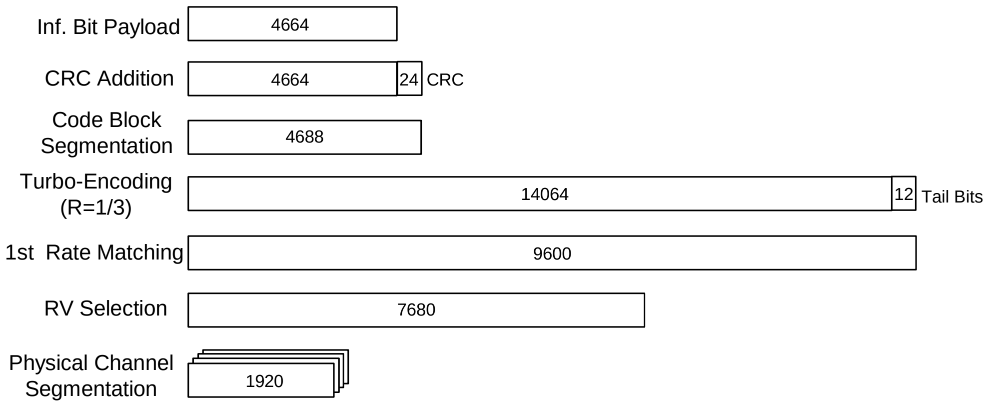

Figure C.8.2: Coding rate for Fixed reference Channel H-Set 1 (16 QAM)

C.8.1.2 Fixed Reference Channel Definition H-Set 2

Table C.8.1.2: Fixed Reference Channel H-Set 2

Parameter	Unit	Value	
Nominal Avg. Inf. Bit Rate	kbps	801	1166
Inter-TTI Distance	TTI's	2	2
Number of HARQ Processes	Processes	3	3
Information Bit Payload (N_{INF})	Bits	3202	4664
Number Code Blocks	Blocks	1	1
Binary Channel Bits Per TTI	Bits	4800	7680
Total Available SML's in UE	SML's	28800	28800
Number of SML's per HARQ Proc.	SML's	9600	9600
Coding Rate		0.67	0.61
Number of Physical Channel Codes	Codes	5	4
Modulation		QPSK	16QAM
Note: The HS-DSCH shall be transmitted continuously with constant power but only every second TTI shall be allocated to the UE under test			

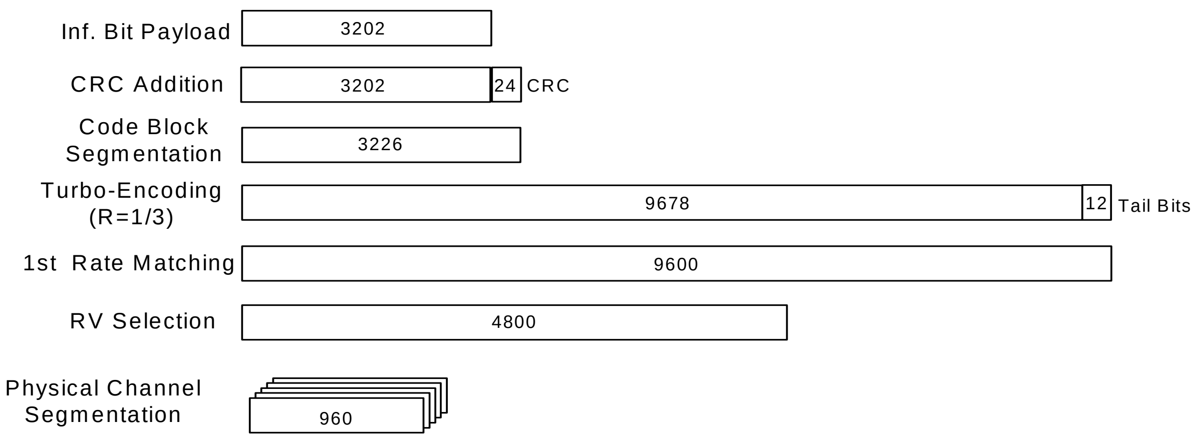

Figure C.8.3: Coding rate for Fixed Reference Channel H-Set 2 (QPSK)

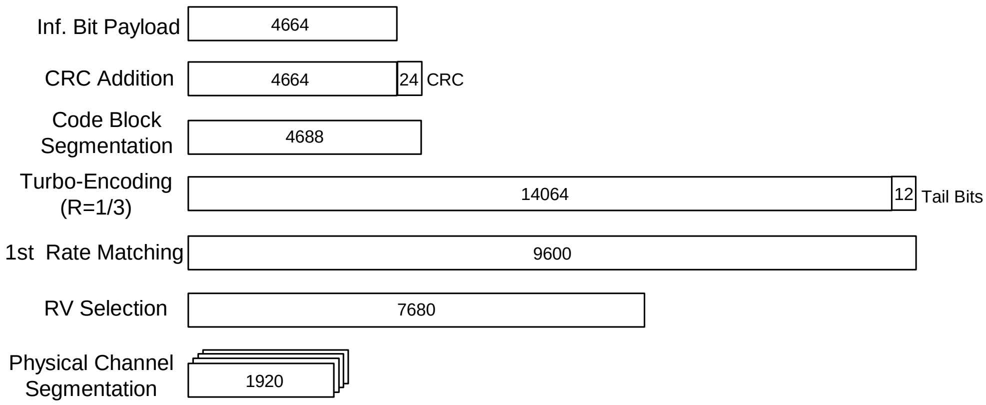

Figure C.8.4: Coding rate for Fixed Reference Channel H-Set 2 (16QAM)

C.8.1.3 Fixed Reference Channel Definition H-Set 3

Table C.8.1.3: Fixed Reference Channel H-Set 3

Parameter	Unit	Value	
Nominal Avg. Inf. Bit Rate	kbps	1601	2332
Inter-TTI Distance	TTI's	1	1
Number of HARQ Processes	Processes	6	6
Information Bit Payload (N_{INF})	Bits	3202	4664
Number Code Blocks	Blocks	1	1
Binary Channel Bits Per TTI	Bits	4800	7680
Total Available SML's,in UE	SML's	57600	57600
Number of SML's per HARQ Proc.	SML's	9600	9600
Coding Rate		0.67	0.61
Number of Physical Channel Codes	Codes	5	4
Modulation		QPSK	16QAM

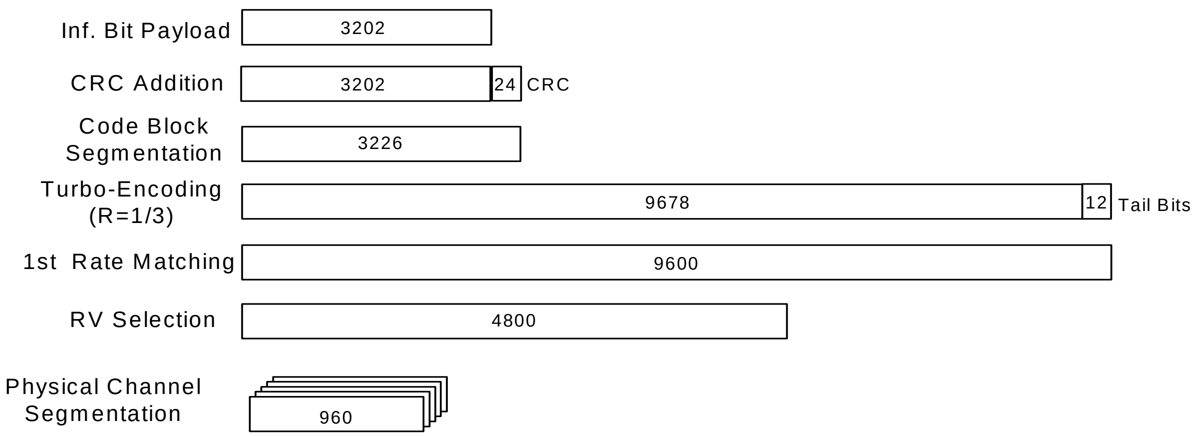

Figure C.8.5: Coding rate for Fixed reference Channel H-Set 3 (QPSK)

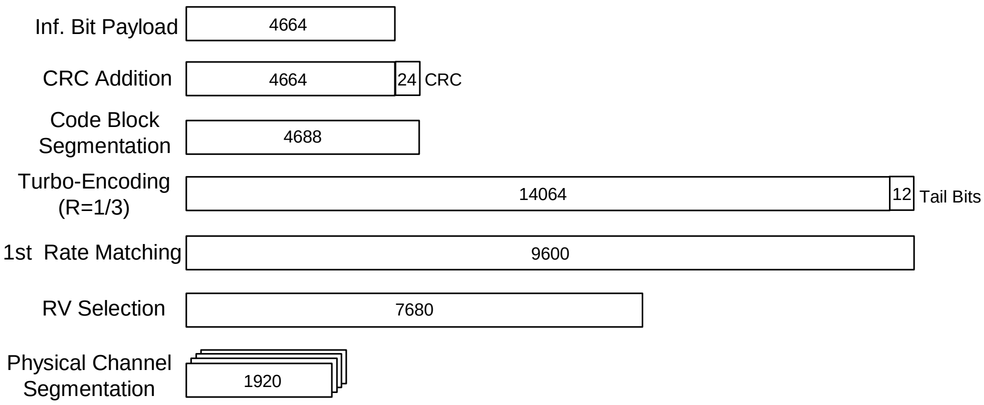

Figure C.8.6: Coding rate for Fixed reference Channel H-Set 3 (16QAM)

C.8.1.4 Fixed Reference Channel Definition H-Set 4

Table C.8.1.4: Fixed Reference Channel H-Set 4

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	534
Inter-TTI Distance	TTI's	2
Number of HARQ Processes	Processes	2
Information Bit Payload (N_{INF})	Bits	3202
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	4800
Total Available SML's in UE	SML's	14400
Number of SML's per HARQ Proc.	SML's	7200
Coding Rate		0.67
Number of Physical Channel Codes	Codes	5
Modulation		QPSK
Note: ~~This test case verifies the minimum inter-TTI distance and therefore HS-PDSCH transmission shall be as follows: …00X0X000X0X…, where 'X' marks TTI in which HS-PDSCH is transmitted to the UE and '0' marks TTI, in which the HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.~~ This FRC is used to verify the minimum inter-TTI distance for UE category 11. The HS-PDSCH shall be transmitted continuously with constant power. The six sub-frame HS-SCCH signalling pattern shall repeat as follows: …OOXOXOOOXOXO…, where 'X' marks TTI in which HS-SCCH uses the identity of the UE under test and 'O' marks TTI in which HS-SCCH uses a different identity.		

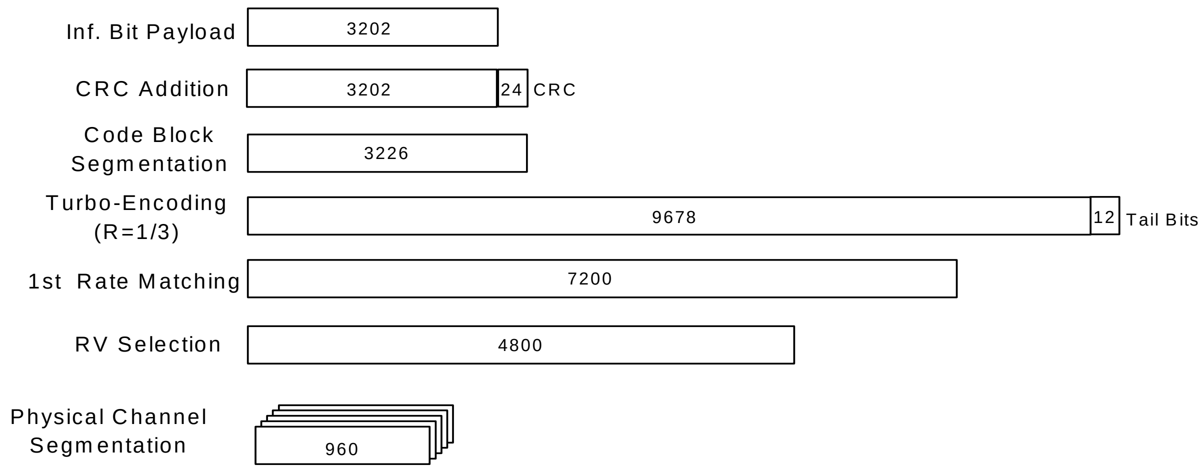

Figure C.8.7: Coding rate for Fixed Reference Channel H-Set 4

C.8.1.5 Fixed Reference Channel Definition H-Set 5

Table C.8.1.5: Fixed Reference Channel H-Set 5

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	801
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Processes	3
Information Bit Payload (N_{INF})	Bits	3202
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	4800
Total Available SML's in UE	SML's	28800
Number of SML's per HARQ Proc.	SML's	9600
Coding Rate		0.67
Number of Physical Channel Codes	Codes	5
Modulation		QPSK
Note: ~~This test case verifies the minimum inter-TTI distance and therefore HS-PDSCH transmission shall be as follows: …00XXX000XXX…, where 'X' marks TTI in which HS-PDSCH is allocated to the UE and '0' marks TTI, in which the HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.~~ This FRC is used to verify the minimum inter-TTI distance for UE category 11. The HS-PDSCH shall be transmitted continuously with constant power. The six sub-frame HS-SCCH signalling pattern shall repeat as follows: …OOXOXOOOXOXO…, where 'X' marks TTI in which HS-SCCH uses the identity of the UE under test and 'O' marks TTI in which HS-SCCH uses a different identity.		

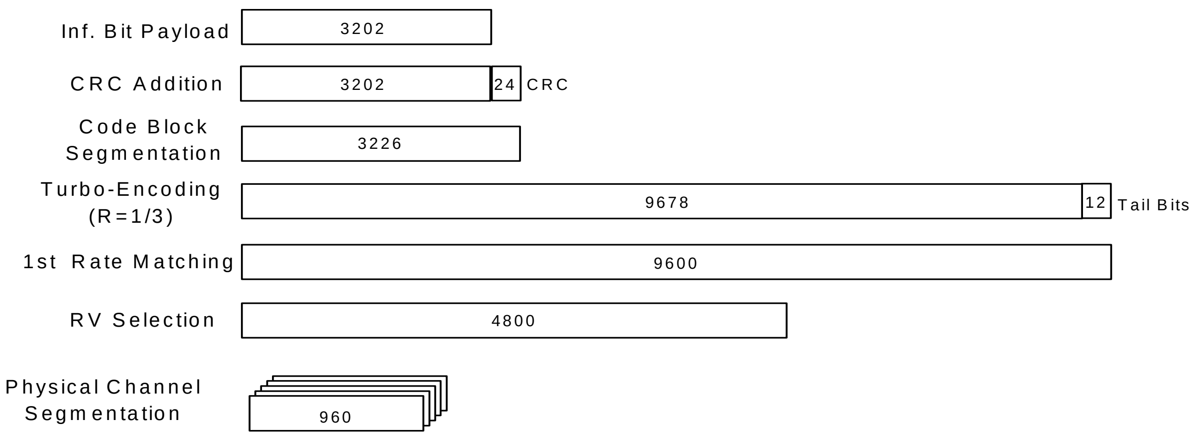

Figure C.8.8: Coding rate for Fixed Reference Channel H-Set 5

3GPP TSG-T WG1 Meeting #26
Bangalore, India, 31 Jan – 4 Feb 2005

Tdoc ⌘T1-050375

CR-Form-v7.1

CHANGE REQUEST

⌘	**34.121**	**CR**	**515**	⌘**rev**	**-**	⌘	Current version:	**5.6.0**	⌘

*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 detection of HS-SCCH			
Source:	⌘	Agilent Technologies			
Work item code:	⌘	TEI6	***Date:***	⌘	3/2/2005
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:	⌘	Corrections have been made to the core requirement I 25.101. There were a number of gaps in the requirements and a need to clarify the text
Summary of change:	⌘	1. Modified names of tables to make them unique – needed for when diversity tests are added 2. Added note that the UE identity associated HS-SCCH-1 is sent only every third TTI. (There is no specification for what identity is sent on the other TTI, this will be a choice for the test implementation.) 3. Clarified that HS-SCCH-1 and HS-PDSCH are transmitted continuously with constant power 4. Clarified the HS-SCCH-1 signalling pattern as being on a six sub-frame repeat cycle. 5. Removed unnecessary reference to test tolerances in 9.4.2.3 since none are used in this test. 6. Corrected name of HS-SCCH-X from HS-SCCH_X in tables E.5.1, E.5.2 and E.5.3. 7. Corrected usage of HS-DSCH_Ec/Ior to be HS-PDSCH_Ec/Ior in table E.5.4. 8. Fixed “DB” in table E.5.4.
Consequences if not approved:	⌘	The testing of HS-SCCH detection will not be well defined and may result in failing a good UE.

Clauses affected:	⌘	9.4, E.5				
		Y	**N**			
Other specs	⌘		**X**	Other core specifications	⌘	

affected:		X	Test specifications
		X	O&M Specifications
Other comments:	⌘		

How to create CRs using this form:

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

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

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

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

9.4 HS-SCCH Detection Performance

9.4.1 Definition and applicability

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

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

9.4.2 Minimum requirements - single link

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

Table 9.4.2: Test parameters for HS-SCCH detection – single link

Parameter	Unit	Test 1	Test 2	Test 3
I_{oc}	dBm/3.84 MHz	-60		
Phase reference	-	P-CPICH		
P-CPICH E_c/I_{or} (*)	dB	-10		
HS-SCCH UE Identity ($x_{ue,1}, x_{ue,2}, \ldots, x_{ue,16}$)		HS-SCCH-1: 1010101010101010 (every third TTI only, UE under test addressed solely via HS-SCCH-1) HS-SCCH-2: 0001001010101010 HS-SCCH-3: 0001101010101010 HS-SCCH-4: 0001111110101010		
HS-DSCH TF of UE1		TF corresponding to CQI1		
HS-SCCH-1 transmission pattern		The HS-SCCH-1 shall be transmitted continuously with constant power.		
HS-PDSCH transmission pattern		The HS-PDSCH shall be transmitted continuously with constant power.		
HS-SCCH-1 TTI ~~Transmission~~ Signalling Pattern	-	~~"…XOOXOOX…", where "X" indicates TTI in which HS-SCCH-1 signals the UE, and "O" indicates TTI, in which the HS-SCCH_1 is not allocated to the UE. All HS-SCCH's shall be transmitted continuously with constant power~~The six sub-frame HS-SCCH-1 signalling pattern shall be "…XOOXOO…", where "X" indicates TTI in which the HS-SCCH-1 uses the identity of the UE under test, and "O" indicates TTI in which the HS-SCCH-1 uses a different UE identity.		

Table 9.4.3: Test requirement for HS-SCCH detection – single link

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

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

9.4.2.1 Test purpose

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

9.4.2.2 Method of test

9.4.2.2.1 Initial conditions

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

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

1. Connect SS, multipath fading simulator and an AWGN noise source to the UE antenna connector as shown in figure A.16.
2. Set the test parameters for test 1-3 as specified in table 9.4.4 and 9.4.5. Setup fading simulators as fading condition, which are described in table D.2.2.1A. The configuration of the downlink channels is defined in table E.5.4.

9.4.2.2.2 Procedure

1. The UE is switched on.
2. An RRC connection is set-up according to the generic HSDPA set-up procedure specified in TS 34.108 [3].
3. Count the number of NACK, ACK and statDTX on the UL HS-DPCCH during the test interval and decide pass or fail according to Annex F.6.1 and table F.6.1.8. NACK and ACK are counted as a pass and statDTX is counted as a failure.

9.4.2.3 Test Requirements

The probability of event E_m denoted as $P(E_m)$ (test procedure step 3) shall not exceed the specified value in table 9.4.3.

No test tolerance is applied to the test parameters.

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

E.5 HSDPA DL Physical channels

E.5.1 Downlink Physical Channels connection set-up

Table E.5.1 is applicable for the measurements for tests in subclause 6.3A, 9.2.1 and 9.3. Table E.5.2 is applicable for the measurements for tests in subclause 9.2.2. Table E.5.3 is applicable for the measurements for tests in subclause 9.2.3. Table E.5.4 is applicable for the measurements for tests in subclause 9.4.

Table E.5.1: Downlink physical channels for HSDPA receiver testing for Single Link performance.

Physical Channel	Parameter	Value	Note
P-CPICH	P-CPICH_Ec/Ior	-10dB	
P-CCPCH	P-CCPCH_Ec/Ior	-12dB	Mean power level is shared with SCH.
SCH	SCH_Ec/Ior	-12dB	Mean power level is shared with P-CCPCH – SCH includes P- and S-SCH, with power split between both. P-SCH code is S_dl,0 as per [14] S-SCH pattern is scrambling code group 0
PICH	PICH_Ec/Ior	-15dB	
DPCH	DPCH_Ec/Ior	Test-specific	12.2 kbps DL reference measurement channel as defined in Annex C.3.1
HS-SCCH-–1	HS-SCCH_Ec/Ior	Test-specific	Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval). During TTIs, in which the HS-SCCH is not allocated to the UE the HS-SCCH shall be transmitted continuously with constant power.
HS-SCCH-–2	HS-SCCH_Ec/Ior	DTX'd	No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH-–3	HS-SCCH_Ec/Ior	DTX'd	As HS-SCCH-–2.
HS-SCCH-–4	HS-SCCH_Ec/Ior	DTX'd	As HS-SCCH-–2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	OCNS interference consists of 6 dedicated data channels as specified in table E.5.5

Table E.5.2: Downlink physical channels for HSDPA receiver testing for Open Loop Transmit Diversity performance.

Physical Channel	Parameter	Value	Note
P-CPICH (antenna 1)	P-CPICH_Ec1/Ior	-13dB	1. Total P-CPICH_Ec/Ior = -10dB
P-CPICH (antenna 2)	P-CPICH_Ec2/Ior	-13dB	
P-CCPCH (antenna 1)	P-CCPCH_Ec1/Ior	-15dB	1. STTD applied. 2. Total P-CCPCH Ec/Ior is –12dB.
P-CCPCH (antenna 2)	P-CCPCH_Ec2/Ior	-15dB	
SCH (antenna 1/2)	SCH_Ec/Ior	-12dB	1. TSTD applied. 2. Power divided equally between primary and secondary SCH.
PICH (antenna 1)	PICH_Ec1/Ior	-18dB	1. STTD applied. 2. Total PICH Ec/Ior is –15dB.
PICH (antenna 2)	PICH_Ec2/Ior	-18dB	
DPCH	DPCH_Ec/Ior	Test-specific	1. STTD applied.
HS-SCCH-–1	HS-SCCH_Ec/Ior	Test-specific	1. STTD applied. 2. Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval). During TTIs, in which the HS-SCCH_1 is not allocated to the UE, the HS-SCCH_1 shall be transmitted continuously with constant power.
HS-SCCH-–2	HS-SCCH_Ec/Ior	DTX'd	1. UE assumes STTD applied. 2. No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH-–3	HS-SCCH_Ec/Ior	DTX'd	1. As HS-SCCH-–2.
HS-SCCH-–4	HS-SCCH_Ec/Ior	DTX'd	2. As HS-SCCH-–2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	1. STTD applied.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	1. STTD applied. 2. Balance of power I_{or} of the Node-B is assigned to OCNS. 3. Power divided equally between antennas.

Table E.5.3: Downlink physical channels for HSDPA receiver testing for Closed Loop Transmit Diversity (Mode-1) performance.

Physical Channel	Parameter	Value	Note
P-CPICH (antenna 1)	P-CPICH_Ec1/Ior	-13dB	1. Total P-CPICH_Ec/Ior = -10dB
P-CPICH (antenna 2)	P-CPICH_Ec2/Ior	-13dB	
P-CCPCH (antenna 1)	P-CCPCH_Ec1/Ior	-15dB	1. STTD applied. 2. Total P-CCPCH Ec/Ior is –12dB.
P-CCPCH (antenna 2)	P-CCPCH_Ec2/Ior	-15dB	
SCH (antenna 1/2)	SCH_Ec/Ior	-12dB	1. TSTD applied. 2. Power divided equally between primary and secondary SCH.
PICH (antenna 1)	PICH_Ec1/Ior	-18dB	1. STTD applied. 2. Total PICH Ec/Ior is –15dB.
PICH (antenna 2)	PICH_Ec2/Ior	-18dB	
DPCH	DPCH_Ec/Ior	Test-specific	1. CL1 applied.
HS-SCCH-–1	HS-SCCH_Ec/Ior	Test-specific	1. [TBD] applied. 2. Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval). During TTIs, in which the HS-SCCH_1 is not allocated to the UE, the HS-SCCH_1 shall be transmitted continuously with constant power.
HS-SCCH-–2	HS-SCCH_Ec/Ior	DTX'd	1. UE assumes [TBD] applied. 2. No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH-–3	HS-SCCH_Ec/Ior	DTX'd	1. As HS-SCCH-–2.
HS-SCCH-–4	HS-SCCH_Ec/Ior	DTX'd	2. As HS-SCCH-–2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	1. CL1 applied.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	1. STTD applied. 2. Balance of power I_{or} of the Node-B is assigned to OCNS. 3. Power divided equally between antennas.

Table E.5.4: Downlink physical channels for HSDPA receiver testing for HS-SCCH detection performance

Parameter	Units	Value	Comment
CPICH E_c/I_{or}	~~D~~dB	-10	
CCPCH E_c/I_{or}	~~D~~dB	-12	Mean power level is shared with SCH.
SCH E_c/I_{or}	~~D~~dB	-12	Mean power level is shared with P-CCPCH – SCH includes P- and S-SCH, with power split between both. P-SCH code is S_dl,0 as per [14] S-SCH pattern is scrambling code group 0
PICH E_c/I_{or}	~~D~~dB	-15	
HS-PDSCH-1 E_c/I_{or}	~~D~~dB	-10	HS-PDSCH associated with HS-SCCH-1. The HS-PDSCH shall be transmitted continuously with constant power.
HS-PDSCH-2 E_c/I_{or}	~~D~~dB	DTX	HS-PDSCH associated with HS-SCCH-2
HS-PDSCH-3 E_c/I_{or}	~~D~~dB	DTX	HS-PDSCH associated with HS-SCCH-3
HS-PDSCH-4 E_c/I_{or}	~~D~~dB	DTX	HS-PDSCH associated with HS-SCCH-4
DPCH E_c/I_{or}	~~D~~dB	-8	12.2 kbps DL reference measurement channel as defined in Annex C.3.1
HS-SCCH-1 E_c/I_{or}	~~D~~dB	Test Specific	All HS-SCCH's allocated equal E_c/I_{or}. Specifies E_c/I_{or} when TTI is active. During TTIs, in which the HS-SCCH's are not allocated to the UE, the HS-SCCH's shall be transmitted continuously with constant power.
HS-SCCH-2 E_c/I_{or}	~~D~~dB		
HS-SCCH-3 E_c/I_{or}	~~D~~dB		
HS-SCCH-4 E_c/I_{or}	~~D~~dB		
OCNS E_c/I_{or}	~~D~~dB	Remaining power at Node-B (including HS-SCCH power allocation when HS-SCCH's inactive).	OCNS interference consists of 6 dedicated data channels as specified in table E.5.5

3GPP TSG-T1 Meeting #26
Bangalore, India   31st January – 4th Febuary, 2005

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CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	516	⌘rev	-	⌘	Current version:	5.6.0	⌘

*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 section 5: Introduction of test case for Adjacent Channel Leakage Power Ratio with HS-DPCCH		
Source:	⌘	Motorola, NEC		
Work item code:	⌘	HSDPA	***Date:*** ⌘	31/01/2005
Category:	⌘	**B**	***Release:*** ⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	The introduction of a new test case for adjacent channel leakage power ratio (Rel-5 and later) is added to section 5.
Summary of change:	⌘	Added a new test case 5.10A for adjacent channel leakage power ratio (Rel-5 and later) to align with core specification in 25.101 release 5.
Consequences if not approved:	⌘	There would be no test case for the Rel-5 and later releases of adjacent channel leakage power ratio which would limit coverage for HSDPA testing.

Clauses affected:	⌘	New clause 5.10A				
		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR applies to release 5 and later releases				

5.10A Adjacent Channel Leakage Power Ratio (ACLR) with HS-DPCCH

5.10A.1 Definition and applicability

ACLR is the ratio of the RRC filtered mean power centred on the assigned channel frequency to the RRC filtered mean power centred on an adjacent channel frequency.

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.

5.10A.2 Minimum Requirements

If the adjacent channel RRC filtered mean power is greater than –50dBm then the ACLR shall be higher than the value specified in table 5.10A.1. This is applicable for all values of β_c, β_d and β_{hs} as specified in [5].

Table 5.10A.1: UE ACLR

Power Class	UE channel	ACLR limit
3	+5 MHz or –5 MHz	33 dB
3	+10 MHz or –10 MHz	43 dB
4	+5 MHz or –5 MHz	33 dB
4	+10 MHz or –10 MHz	43 dB

NOTE 1: The requirement shall still be met in the presence of switching transients.

NOTE 2: The ACLR requirements reflect what can be achieved with present state of the art technology.

NOTE 3: Requirement on the UE shall be reconsidered when the state of the art technology progresses.

The normative reference for this requirement is TS 25.101 [1] clause 6.6.2.2.1.

5.10A.3 Test purpose

To verify that the UE ACLR does not exceed prescribed limit shown in table 5.10A.1. 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.

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

5.10A.4 Method of test

5.10A.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 (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].

5.10A.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 until 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 RRC filtered mean power. The measurement shall not include the transient periods. The details of the measurement method in the presence of HSDPA is FFS.

5) Measure the RRC filtered mean power of the first adjacent channels and the second adjacent channels.

6) Calculate the ratio of the power between the values measured in step 4) and step 5).

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.

5.10A.5 Test requirements

The measured ACLR, derived in step 6), shall be higher than the limit in table 5.10A.3.

Table 5.10A.3: UE ACLR

Power Class	UE channel	ACLR limit
3	+5 MHz or –5 MHz	32.2 dB
3	+10 MHz or –10 MHz	42.2 dB
4	+5 MHz or –5 MHz	32.2 dB
4	+10 MHz or –10 MHz	42.2 dB

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

F.1.2 Measurement of transmitter

Table F.1.2: Maximum Test System Uncertainty for transmitter tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
5.2 Maximum Output Power	±0,7 dB	
5.3 Frequency Error	±10 Hz	
5.4.1 Open loop power control in uplink	±1,0 dB	The uncertainty of this test is a combination of the downlink level setting error and the uplink power measurement that are uncorrelated. Formula = SQRT(source_level_error^2 + power_meas_error^2)
5.4.2 Inner loop power control in the uplink	The test system uncertainty is the function of the UE transmitter power control range for each combination of the step size and number of steps. For 0 dB and 1 dB range ±0,1 dB For a nominal 2 dB range ±0,15 dB For a nominal 3 dB range ±0,2 dB For a greater than 3 dB range ±0,3 dB	This accuracy is based on the linearity of the absolute power measurement of the test equipment.
5.4.3 Minimum Output Power	±1,0 dB	Measured on a static signal
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	±0,4 dB	0.1 dB uncertainty in DPCCH 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 DPCCH_Ec/Ior ratio. The absolute error of the AWGN Ioc is not important but is specified as 1.0 dB
5.5.1 Transmit OFF Power: (static case)	±1,0 dB	Measured on a static signal
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0,7 dB – 1,0 dB Off power (dynamic case) TBD	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 (assume UE won't go above 24 nominal). For the off power, the accuracy of a two-pass measurement needs to be analysed.
5.6 Change of TFC: power control step size (7 dB step)	±0,3 dB relative over a 9 dB range	
5.7 Power setting in uplink compressed mode:- UE output power	Will be a subset of 5.4.2.	
5.8 Occupied Bandwidth	±100 kHz	Accuracy = ±3*RBW. Assume 30 kHz bandwidth.

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
5.9 Spectrum emission mask	±1,5 dB	
5.10 ACLR	5 MHz offset: ± 0,8 dB 10 MHz offset: ± 0,8 dB	
5.10A ACLR with HS-DPCCH	5 MHz offset: ± 0,8 dB 10 MHz offset: ± 0,8 dB	
5.11 Spurious emissions	± 2,0 dB for UE and coexistence bands for results > -60 dBm ± 3,0 dB for results < -60 dBm Outside above: f≤2.2GHz: ± 1.5 dB 2.2 GHz < f ≤ 4 GHz: ± 2.0 dB f > 4 GHz: ±4.0 dB	
5.12 Transmit Intermodulation	± 2.2 dB	CW Interferer error is 0.7 dB for the UE power RSS with 0.7 dB for CW setting = 1.0 dB Measurement error of intermod product is 0.7 dB for UE power RSS with 0.7 dB for relative = 1.0 dB Interferer has an effect of 2 times on the intermod product so overall test uncertainty is 2*1.0 RSS with 1.0 = 2.2 dB. Apply half any excess test system uncertainty to increase the interferer level
5.13.1 Transmit modulation: EVM	±2.5 % (for single code)	
5.13.2 Transmit modulation: peak code domain error	±1.0dB	
5.13.4 PRACH quality (EVM)	±2.5 %	
5.13.4 PRACH quality (Frequency error)	±10 Hz	

F.2 Test Tolerances (This clause is informative)

The Test Tolerances defined in this clause have been used to relax the Minimum Requirements in the present document to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.).

F.2.1 Transmitter

Table F.2.1: Test Tolerances for transmitter tests.

Clause	Test Tolerance
5.2 Maximum Output Power	0.7 dB
5.3 Frequency error	10 Hz
5.4.1 Open loop power control in uplink	1.0 dB
5.4.2 Inner loop power control in the uplink	0.1 dB (1 dB and 0 dB range) 0.15 dB (2 dB range) 0.2 dB (3 dB range 0.3 dB (> 3 dB range))
5.4.3 Minimum Output Power	1.0 dB
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	0.4 dB
5.4.4 Out-of-synchronisation handling of output power: transmit ON/OFF time	0 ms
5.5.1 Transmit OFF power	1.0 dB
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0.7 dB / -1.0 dB Off power TT [ ] dB
5.6 Change of TFC: power control step size	0.3 dB
5.7 Power setting in uplink compressed mode:- UE output power	See subset of 5.4.2
5.8 Occupied Bandwidth	0 kHz
5.9 Spectrum emission mask	1.5 dB (0 dB for additional requirements for Band II)
5.10 ACLR	0.8 dB for ratio 0.0 dB for absolute power
5.10A ACLR with HS-DPCCH	0.8 dB for ratio 0.0 dB for absolute power
5.11 Spurious emissions	0 dB
5.12 Transmit Intermodulation	0 dB
5.13.1 Transmit modulation: EVM	0%
5.13.2 Transmit modulation: peak code domain error	1.0 dB
5.13.4 PRACH preamble quality (EVM)	0%
5.13.4 PRACH preamble quality (Frequency error)	10 Hz

F.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)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.2 Maximum Output Power	Power class 1 (33 dBm) Tolerance = +1/-3 dB Power class 2 (27 dBm) Tolerance = +1/-3 dB Power class 3 (24 dBm) Tolerance = +1/-3 dB Power class 4 (21 dBm) Tolerance = ±2 dB	0.7 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT For power classes 1-3: Upper Tolerance limit = +1.7 dB Lower Tolerance limit = -3.7 dB For power class 4: Upper Tolerance limit = +2.7 dB Lower Tolerance limit = -2.7 dB
5.3 Frequency Error	The UE modulated carrier frequency shall be accurate to within ±0.1 ppm compared to the carrier frequency received from the Node B.	10 Hz	Formula: modulated carrier frequency error + TT modulated carrier frequency error = ±(0.1 ppm + 10 Hz).
5.4.1 Open loop power control in the uplink	Open loop power control tolerance ±9 dB (Normal) Open loop power control tolerance ±12 dB (Normal)	1.0 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT For Normal conditions: Upper Tolerance limit = +10 dB Lower Tolerance limit = -10 dB For Extreme conditions: Upper Tolerance limit = +13 dB Lower Tolerance limit = -13 dB
5.4.2 Inner loop power control in uplink	See table 5.4.2.1 and 5.4.2.2	0.1dB 0.15 dB 0.2 dB 0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT
5.4.3 Minimum Output Power	UE minimum transmit power shall be less than –50 dBm	1.0 dB	Formula: UE minimum transmit power + TT UE minimum transmit power = –49 dBm

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.4.4 Out-of-synchronisation handling of output power:	$\frac{DPCCH\_E_c}{I_{or}}$ levels AB: -22 dB BD: -28 dB DE: -24 dB EF: -18 dB transmit ON/OFF time 200ms $\frac{DPDCH\_E_c}{I_{or}}$ = -16.6 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.4 dB for $\frac{DPCCH\_E}{I_{or}}$ 0 ms for timing measurement	Formulas: Ratio between A and B + TT Ratio between B and D – TT Ratio between D and E – TT Ratio between E and F + TT transmit ON/OFF time + TT timing $\frac{DPDCH\_E_c}{I_{or}}$ = -16.6 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB $\frac{DPCCH\_E_c}{I_{or}}$ levels: AB: -21.6 dB BD: -28.4 dB DE: -24.4 dB EF: -17.6 dB transmit ON/OFF time 200ms timing Uncertainty of OFF power measurement is handled by Transmit OFF power test and uncertainty of ON power measurement is handled by Minimum output power test.
5.5.1 Transmit OFF power (static case)	Transmit OFF power shall be less than -56 dBm	1.0 dB	Formula: Transmit OFF power + TT Transmit OFF power = –55dBm.
5.5.2 Transmit ON/OFF time mask (dynamic case)	Transmit ON power shall be the target value as defined in clause 5.5.2.2 Transmit OFF power shall be less than -56 dBm	On power upper TT = 0.7 dB On power lower TT = 1.0 dB Off power TT [ ] dB	Formula for transmit ON power: Transmit ON power target upper limit + On power upper TT Transmit ON power target lower limit - On power lower TT To calculate Transmit ON power target value range take the nominal TX power range from Table 5.5.2.3 then apply table 5.4.1.1 open limits then apply table 5.7.1 (only if there has been a transmission gap) then cap the upper value using table 5.2.1. Formula for transmit OFF power: Transmit OFF power + Off power TT Transmit OFF power = [ ]dBm

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in TS 34.121	
5.6 Change of TFC: power control step size	TFC step size = +5 to +9 dB		0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT Upper limit = -4.7 dB Lower limit = -9.3 dB	
5.7 Power setting in uplink compressed mode	Various		TBD (Subset of 5.4.2)	TBD	
5.8 Occupied Bandwidth	The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps.		0 kHz	Formula: occupied channel bandwidth: + TT occupied channel bandwidth = 5.0 MHz	
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.		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.	
5.10 Adjacent Channel Leakage Power Ratio (ACLR)	If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below.		0.0 dB	Formula: Absolute power threshold + TT	
	Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB		0.8 dB	Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32.2 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB	
5.10A Adjacent Channel Leakage Power Ratio (ACLR) with HS-DPCCH	If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below.		0.0 dB	Formula: Absolute power threshold + TT	
	Power Classes 3 and 4: UE channel +5 MHz or -5MHz, ACLR limit: 33 dB UE channel +10 MHz or -10MHz, ACLR limit: 43 dB		0.8 dB	Formula: ACLR limit – TT Power Classes 3 and 4: UE channel +5 MHz or -5MHz, ACLR Limit: 32.2 dB UE channel +10 MHz or -10MHz, ACLR Limit: 42.2 dB	
5.11 Spurious Emissions				Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.	
	Frequency Band	Minimum Requirement		Frequency Band	Minimum Requirement
	9 kHz ≤ f < 150 kHz	–36dBm /1kHz	0 dB	9kHz ≤ f < 1GHz	–36dBm /1kHz
	150 kHz ≤ f < 30 MHz	–36dBm /10kHz	0 dB	150 kHz ≤ f < 30 MHz	–36dBm /10kHz
	30 MHz ≤ f < 1000 MHz	–36dBm /100kHz	0 dB	30 MHz ≤ f < 1000 MHz	–36dBm /100kHz

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in TS 34.121	
	1 GHz ≤ f < 12.75 GHz	–30dBm /1MHz	0 dB	1 GHz ≤ f < 2.2 GHz	–30dBm /1MHz
			0 dB	2.2 GHz ≤ f < 4 GHz	–30dBm /1MHz
			0 dB	4 GHz ≤ f < 12.75 GHz	–30dBm /1MHz
	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz	0 dB	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz
	925 MHz ≤ f ≤ 935 MHz	–67dBm /100kHz	0 dB	925 MHz ≤ f ≤ 935 MHz	–67dBm /100kHz
	935 MHz < f ≤ 960 MHz	–79dBm /100kHz	0 dB	935 MHz < f ≤ 960 MHz	–79dBm /100kHz
	1805 MHz ≤ f ≤ 1880 MHz	–71dBm /100kHz	0 dB	1805 MHz ≤ f ≤ 1880 MHz	–71dBm /100kHz
5.12 Transmit Intermodulation	Intermodulation Product 5MHz -31 dBc 10MHz -41 dBc CW Interferer level = -40 dBc		0 dB	Formula: CW interferer level – TT/2 Intermod Products limits remain unchanged. CW interferer level = -40 dBc	
5.13.1 Transmit modulation: EVM	The measured EVM shall not exceed 17.5%.		0%	Formula: EVM limit + TT EVM limit = 17.5 %	
5.13.2 Transmit modulation: peak code domain error	The measured Peak code domain error shall not exceed -15 dB.		1.0 dB	Formula: Peak code domain error + TT Peak code domain error = -14 dB	
5.13.4 PRACH preamble quality (EVM)	The measured EVM shall not exceed 17.5%.		0%	Formula: EVM limit + TT EVM limit = 17.5 %	
5.13.4 PRACH preamble quality (Frequency error)	The UE modulated carrier frequency shall be accurate to within ±0.1 ppm compared to the carrier frequency received from the Node B.		10 Hz	Formula: modulated carrier frequency error + TT modulated carrier frequency error = ±(0.1 ppm + 10 Hz).	

F.5 Acceptable uncertainty of Test Equipment (This clause is informative)

This informative clause specifies the critical parameters of the components of an overall Test System (e.g. Signal generators, Signal Analysers etc.) which are necessary when assembling a Test System that complies with clause F.1 Acceptable Uncertainty of Test System. These Test Equipment parameters are fundamental to the accuracy of the overall Test System and are unlikely to be improved upon through System Calibration.

F.5.1 Transmitter measurements

Table F.5.1: Equipment accuracy for transmitter measurements

Test	Equipment accuracy	Test conditions
5.2 Maximum Output Power	Not critical	19 to 25 dBm
5.3 Frequency error	± 10 Hz	0 to 500 Hz.
5.4.1 Open loop power control in uplink	Not critical	-43.7 dBm to 25 dBm
5.4.2 Inner loop power control in the uplink	±0.1 dB relative over a 1.5 dB range ±0.15 dB relative over a 3.0 range ±0.2 dB relative over a 4.5 dB range ±0.3 dB relative over a 26 dB range	+25 dBm to -50 dBm
5.4.3 Minimum Output Power	Not critical	
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	±0.1 dB uncertainty in DPCCH_Ec/Ior ratio	Ratio from –16.6 dB to –28 dB
5.5.1 Transmit ON/OFF Power: UE transmit OFF power	Not critical	-56 dBm (static power)
5.5.2 Transmit ON/OFF Power: transmit ON/OFF time mask	TBD	-56 dBm (dynamic power over approx. 70 dB range)
5.6 Change of TFC: power control step size	±0.3 dB relative over a 9 dB range	+25 dBm to –50 dBm
5.7 Power setting in uplink compressed mode:- UE output power	Subset of 5.4.2	+25 dBm to –50 dBm
5.8 Occupied Bandwidth	±100 kHz	For results between 4 and 6 MHz?
5.9 Spectrum emission mask	Not critical	P_Max Accuracy applies ± 5 dB either side of UE requirements
5.10 ACLR	5 MHz offset ± 0.8 dB 10 MHz offset ± 0.8 dB	19 to 25 dBm at 5 MHz offset for results between 40 dB and 50 dB. 25 dBm at 10 MHz offset for results between 45 dB and 55 dB.
5.10A ACLR with HS-DPCCH	5 MHz offset ± 0.8 dB 10 MHz offset ± 0.8 dB	19 to 25 dBm at 5 MHz offset for results between 40 dB and 50 dB. 25 dBm at 10 MHz offset for results between 45 dB and 55 dB.
5.11 Spurious emissions	Not critical	19 to 25 dBm
5.12 Transmit Intermodulation	Not critical	19 to 25 dBm
5.13.1 Transmit modulation: EVM	±2.5 % (for single code)	25 dBm to –21 dBm
5.13.2 Transmit modulation: peak code domain error	±1.0dB	For readings between -10 dB to –20 dB.
5.13.4 PRACH preamble quality (EVM)	□2.5 %	25 dBm to –21 dBm
5.13.4 PRACH preamble quality (Frequency error)	± 10 Hz	0 to 500 Hz.

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CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	517	⌘rev	-	⌘	Current version:	5.6.0	⌘

*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 section 5: Introduction of new test case for HSDPA: UE max output power with HS-DPCCH		
Source:	⌘	Motorola, NEC		
Work item code:	⌘	HSDPA	**Date:** ⌘	31/01/2005
Category:	⌘	**B**	**Release:** ⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	The introduction of a new test case for UE max output power with HS-DPCCH is needed to align with the core specification.
Summary of change:	⌘	Added a new test case 5.2A for HSDPA to align with core specification coverage of HSDPA for release 5.
Consequences if not approved:	⌘	There would be limited coverage for HSDPA testing.

Clauses affected:	⌘	New clause 5.2A, Annex A, F.1.2, F.2.1, F.4, F.5.1			
		Y	N		
Other specs Affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This applies to release 5 and later releases			

5.2A Maximum Output Power with HS-DPCCH

5.2A.1 Definition and applicability

The maximum output power with HS-DPCCH and its tolerance are defined according to the Power Class of the UE.

The maximum output power with HS-DPCCH is a measure of the maximum power the UE can transmit when HS-DPCCH is fully or partially transmitted during a DPCCH timeslot. The measurement period shall be at least one timeslot.

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.

5.2A.2 Minimum Requirements

The UE maximum output power with HS-DPCCH shall be within the value and tolerance specified in table 5.2A.1 when HS-DPCCH is fully or partially transmitted during a DPCCH timeslot. The maximum output power where HS-DPCCH is not transmitted shall be within the values and tolerance specified in table 5.2.1.

Table 5.2A.1: Maximum Output Powers with HS-DPCCH

Ratio of β_c to β_d for all values of β_{hs}	Power Class 3		Power Class 4	
	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)
$1/15 \le \beta_c/\beta_d \le 12/15$	+24	+1/-3	+21	+2/-2
$13/15 \le \beta_c/\beta_d \le 15/8$	+23	+2/-3	+20	+3/-2
$15/7 \le \beta_c/\beta_d \le 15/0$	+22	+3/-3	+19	+4/-2

The normative reference for this requirement is TS 25.101 [1] clause 6.2.2.

5.2A.3 Test purpose

To verify that the error of the UE maximum output power with HS-DPCCH does not exceed the range prescribed by the maximum output power and tolerance in table 5.2A.1.

An excess maximum output power may interfere with other channels or other systems. A small maximum output power decreases the coverage area.

5.2A.4 Method of test

5.2A.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 (node B emulator) to the UE antenna connector as shown in figure A.20.

2) The UL Reference Measurement Channel (12.2 kbps) and the Fixed Reference Channels (FRC H-Set 1) are specified in Annex C.2.1 and C.8.1.1 with exception for the beta values set according to table 5.2A.3.

3) 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.

4) 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.

5.2A.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.

3) Start transmitting HSDPA Data.

4) Measure the mean power of the UE. The mean power shall be averaged over at least one timeslot. The details of the measurement method in the presence of HSDPA is FFS.

5) Repeat the measurement for the different combinations of beta values as given in table 5.2A.3.

Specific Message Contents

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.

5.2A.5 Test requirements

The maximum output power with HS-DPCCH, derived in step 4), shall not exceed the range prescribed by the maximum output power and tolerance in table 5.2A.2. The maximum output power where HS-DPCCH is not transmitted shall not exceed the range prescribed in table 5.2.2.

The UL reference measurement channel (12,2 kbps) for TX test will be set as defined in C.2.1 with the exception of the power ratio between HS-DPCH, DPCCH and DPDCH being set to the values defined in table 5.2A.3.

Table 5.2A.2: Maximum Output Powers with HS-DPCCH for test

Ratio of β_c to β_d for all values of β_{hs}	Power Class 3		Power Class 4	
	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)
β_c/β_d = 1/15, 12/15	+24	+1.7/-3.7	+21	+2.7/-2.7
β_c/β_d = 13/15, 15/8	+23	+2.7/-3.7	+20	+3.7/-2.7
β_c/β_d = 15/7, 15/0	+22	+3.7/-3.7	+19	+4.7/-2.7
Note: For the purpose of the test Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.				

Table 5.2A.3: β values for Maximum Output Powers with HS-DPCCH for test

Sub-test	β_c	β_d	β_c/β_d	β_{HS}
1	1/15	15/15	1/15	2/15

2	12/15	15/15	12/15	24/15
3	13/15	15/15	13/15	26/15
4	15/15	8/15	15/8	30/15
5	15/15	7/15	15/7	30/15
6	15/15	off	15/0	30/15

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}

Annex A (informative): Connection Diagrams

Definition of Terms

System Simulator or SS – A device or system, that is capable of generating simulated Node B signalling and analysing UE signalling responses on one or more RF channels, in order to create the required test environment for the UE under test. It will also include the following capabilities:

1. Measurement and control of the UE Tx output power through TPC commands
2. Measurement of Rx BLER and BER
3. Measurement of signalling timing and delays
4. Ability to simulate UTRAN and/or GERAN signalling

Test System – A combination of devices brought together into a system for the purpose of making one or more measurements on a UE in accordance with the test case requirements. A test system may include one or more System Simulators if additional signalling is required for the test case. The following diagrams are all examples of Test Systems.

Note: The above terms are logical definitions to be used to describe the test methods used in this document (TS34.121), in practice, real devices called 'System Simulators' may also include additional measurement capabilities or may only support those features required for the test cases they are designed to perform.

{ Unchanged sections are skipped here}

-- Missing figures --

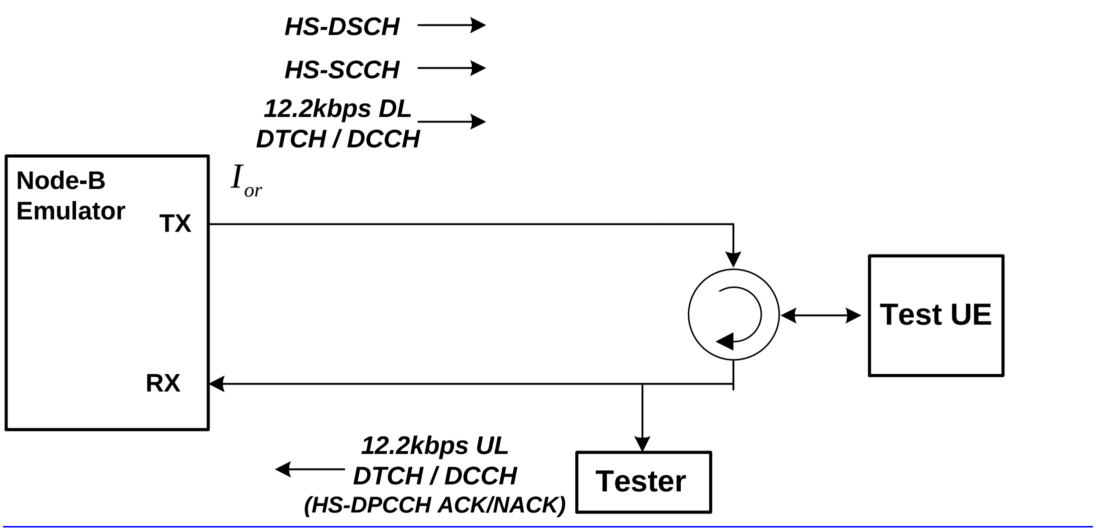

Figure A.20: Connection for Basic HSDPA TX Test

{ Unchanged sections are skipped here}

E.2 Connection Set-up for non-HSDPA test cases

{ Unchanged sections are skipped here}

E.3 During connection for non-HSDPA test cases

The following clauses describe the downlink Physical Channels that are transmitted during a connection i.e., when measurements are done. For these measurements the offset between DPCH and SCH shall be zero chips at base station meaning that SCH is overlapping with the first symbols in DPCH in the beginning of DPCH slot structure.

{ Unchanged sections are skipped here}

E.4 W-CDMA Modulated Interferer for non-HSDPA test cases

{ Unchanged sections are skipped here}

E.5 HSDPA DL Physical channels

E.5.1 Downlink Physical Channels connection set-up

Table E.5.1 is applicable for the measurements for tests in subclause 5.2A, 5.9A, 5.10A, 5.13A.1, 6.3A, 9.2.1 and 9.3. Table E.5.2 is applicable for the measurements for tests in subclause 9.2.2. Table E.5.3 is applicable for the measurements for tests in subclause 9.2.3. Table E.5.4 is applicable for the measurements for tests in subclause 9.4.

Table E.5.1: Downlink physical channels for HSDPA receiver testing for Single Link performance.

Physical Channel	Parameter	Value	Note
P-CPICH	P-CPICH_Ec/Ior	-10dB	
P-CCPCH	P-CCPCH_Ec/Ior	-12dB	Mean power level is shared with SCH.
SCH	SCH_Ec/Ior	-12dB	Mean power level is shared with P-CCPCH – SCH includes P- and S-SCH, with power split between both. P-SCH code is S_dl,0 as per [14] S-SCH pattern is scrambling code group 0
PICH	PICH_Ec/Ior	-15dB	
DPCH	DPCH_Ec/Ior	Test-specific	12.2 kbps DL reference measurement channel as defined in Annex C.3.1
HS-SCCH_1	HS-SCCH_Ec/Ior	Test-specific	Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval). During TTIs, in which the HS-SCCH is not allocated to the UE the HS-SCCH shall be transmitted continuously with constant power.
HS-SCCH_2	HS-SCCH_Ec/Ior	DTX'd	No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/Ior	DTX'd	As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/Ior	DTX'd	As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	OCNS interference consists of 6 dedicated data channels as specified in table E.5.5

{ Unchanged sections are skipped here}

E.5.4 Downlink Physical Channels for Transmitter Characteristics with HS-DPCCH

Table E.5.10 is applicable for measurements on the Transmitter Characteristics with HSDPA in clauses 5.2A, 5.9A, 5.10A and 5.13A.1.

Table E.5.10: Test specific downlink physical channels

Parameter	Unit	Test
DPCH	DPCH_Ec/Ior (dB)	-9
HS-SCCH_1	HS-SCCH_Ec/Ior (dB)	-8
HS-PDSCH	HS-PDSCH_Ec/Ior (dB)	-3
Note: The power levels are selected high enough to keep the DTX reporting ratio very small and to ensure that the radio link is maintained during the test.		

{ Unchanged sections are skipped here}

F.1.2 Measurement of transmitter

Table F.1.2: Maximum Test System Uncertainty for transmitter tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
5.2 Maximum Output Power	±0,7 dB	
5.2A Maximum Output Power with HS-DPCCH	±0,7 dB	
5.3 Frequency Error	±10 Hz	
5.4.1 Open loop power control in uplink	±1,0 dB	The uncertainty of this test is a combination of the downlink level setting error and the uplink power measurement that are uncorrelated. Formula = SQRT(source_level_error^2 + power_meas_error^2)
5.4.2 Inner loop power control in the uplink	The test system uncertainty is the function of the UE transmitter power control range for each combination of the step size and number of steps. For 0 dB and 1 dB range ±0,1 dB For a nominal 2 dB range ±0,15 dB For a nominal 3 dB range ±0,2 dB For a greater than 3 dB range ±0,3 dB	This accuracy is based on the linearity of the absolute power measurement of the test equipment.
5.4.3 Minimum Output Power	±1,0 dB	Measured on a static signal
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	±0,4 dB	0.1 dB uncertainty in DPCCH 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 DPCCH_Ec/Ior ratio. The absolute error of the AWGN Ioc is not important but is specified as 1.0 dB
5.5.1 Transmit OFF Power: (static case)	±1,0 dB	Measured on a static signal
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0,7 dB – 1,0 dB Off power (dynamic case) TBD	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 (assume UE won't go above 24 nominal). For the off power, the accuracy of a two-pass measurement needs to be analysed.
5.6 Change of TFC: power control step size (7 dB step)	±0,3 dB relative over a 9 dB range	
5.7 Power setting in uplink compressed mode:- UE output power	Will be a subset of 5.4.2.	
5.8 Occupied Bandwidth	±100 kHz	Accuracy = ±3*RBW. Assume 30 kHz bandwidth.
5.9 Spectrum emission mask	±1,5 dB	
5.10 ACLR	5 MHz offset: ± 0,8 dB 10 MHz offset: ± 0,8 dB	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
5.11 Spurious emissions	± 2,0 dB for UE and coexistence bands for results > -60 dBm ± 3,0 dB for results < -60 dBm Outside above: f≤2.2GHz: ± 1.5 dB 2.2 GHz < f ≤ 4 GHz: ± 2.0 dB f > 4 GHz: ±4.0 dB	
5.12 Transmit Intermodulation	± 2.2 dB	CW Interferer error is 0.7 dB for the UE power RSS with 0.7 dB for CW setting = 1.0 dB Measurement error of intermod product is 0.7 dB for UE power RSS with 0.7 dB for relative = 1.0 dB Interferer has an effect of 2 times on the intermod product so overall test uncertainty is 2*1.0 RSS with 1.0 = 2.2 dB. Apply half any excess test system uncertainty to increase the interferer level
5.13.1 Transmit modulation: EVM	±2.5 % (for single code)	
5.13.2 Transmit modulation: peak code domain error	±1.0dB	
5.13.4 PRACH quality (EVM)	±2.5 %	
5.13.4 PRACH quality (Frequency error)	±10 Hz	

{ Unchanged sections are skipped here}

F.2 Test Tolerances (This clause is informative)

The Test Tolerances defined in this clause have been used to relax the Minimum Requirements in the present document to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.).

F.2.1 Transmitter

Table F.2.1: Test Tolerances for transmitter tests.

Clause	Test Tolerance
5.2 Maximum Output Power	0.7 dB
5.2A Maximum Output Power with HS-DPCCH	0.7 dB
5.3 Frequency error	10 Hz
5.4.1 Open loop power control in uplink	1.0 dB
5.4.2 Inner loop power control in the uplink	0.1 dB (1 dB and 0 dB range) 0.15 dB (2 dB range) 0.2 dB (3 dB range 0.3 dB (> 3 dB range))
5.4.3 Minimum Output Power	1.0 dB
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	0.4 dB
5.4.4 Out-of-synchronisation handling of output power: transmit ON/OFF time	0 ms
5.5.1 Transmit OFF power	1.0 dB
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0.7 dB / -1.0 dB Off power TT [ ] dB
5.6 Change of TFC: power control step size	0.3 dB
5.7 Power setting in uplink compressed mode:- UE output power	See subset of 5.4.2
5.8 Occupied Bandwidth	0 kHz
5.9 Spectrum emission mask	1.5 dB (0 dB for additional requirements for Band II)
5.10 ACLR	0.8 dB for ratio 0.0 dB for absolute power
5.11 Spurious emissions	0 dB
5.12 Transmit Intermodulation	0 dB
5.13.1 Transmit modulation: EVM	0%
5.13.2 Transmit modulation: peak code domain error	1.0 dB
5.13.4 PRACH preamble quality (EVM)	0%
5.13.4 PRACH preamble quality (Frequency error)	10 Hz

{ Unchanged sections are skipped here}

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)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.2 Maximum Output Power	Power class 1 (33 dBm) Tolerance = +1/-3 dB Power class 2 (27 dBm) Tolerance = +1/-3 dB Power class 3 (24 dBm) Tolerance = +1/-3 dB Power class 4 (21 dBm) Tolerance = ±2 dB	0.7 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT For power classes 1-3: Upper Tolerance limit = +1.7 dB Lower Tolerance limit = -3.7 dB For power class 4: Upper Tolerance limit = +2.7 dB Lower Tolerance limit = -2.7 dB
5.2A Maximum Output Power with HS-DPCCH	For Power class 3: Power class 3 (24 dBm) Tolerance = +1/-3 dB Power class 3 (23 dBm) Tolerance = +2/-3 dB Power class 3 (22 dBm) Tolerance = +3/-3 dB For Power class 4: Power class 4 (21 dBm) Tolerance = ±2 dB Power class 4 (20 dBm) Tolerance = +3/-2 dB Power class 4 (19 dBm) Tolerance = +4/-2 dB	0.7 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT For power classes 3: Upper Tolerance limit = +1.7 dB (24 dBm) Upper Tolerance limit = +2.7 dB (23 dBm) Upper Tolerance limit = +1.7 dB (22 dBm) Lower Tolerance limit = -3.7 dB For power class 4: Upper Tolerance limit = +2.7 dB (24 dBm) Upper Tolerance limit = +3.7 dB (23 dBm) Upper Tolerance limit = +4.7 dB (22 dBm) Lower Tolerance limit = -2.7 dB
5.3 Frequency Error	The UE modulated carrier frequency shall be accurate to within ±0.1 ppm compared to the carrier frequency received from the Node B.	10 Hz	Formula: modulated carrier frequency error + TT modulated carrier frequency error = ±(0.1 ppm + 10 Hz).
5.4.1 Open loop power control in the uplink	Open loop power control tolerance ±9 dB (Normal) Open loop power control tolerance ±12 dB (Normal)	1.0 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT For Normal conditions: Upper Tolerance limit = +10 dB Lower Tolerance limit = -10 dB For Extreme conditions: Upper Tolerance limit = +13 dB Lower Tolerance limit = -13 dB
5.4.2 Inner loop power control in uplink	See table 5.4.2.1 and 5.4.2.2	0.1dB 0.15 dB 0.2 dB 0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT
5.4.3 Minimum Output Power	UE minimum transmit power shall be less than –50 dBm	1.0 dB	Formula: UE minimum transmit power + TT UE minimum transmit power = –49 dBm

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.4.4 Out-of-synchronisation handling of output power:	$\frac{DPCCH\_E_c}{I_{or}}$ levels AB: -22 dB BD: -28 dB DE: -24 dB EF: -18 dB transmit ON/OFF time 200ms $\frac{DPDCH\_E_c}{I_{or}}$ = -16.6 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.4 dB for $\frac{DPCCH\_E}{I_{or}}$ 0 ms for timing measurement	Formulas: Ratio between A and B + TT Ratio between B and D – TT Ratio between D and E – TT Ratio between E and F + TT transmit ON/OFF time + TT timing $\frac{DPDCH\_E_c}{I_{or}}$ = -16.6 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB $\frac{DPCCH\_E_c}{I_{or}}$ levels: AB: -21.6 dB BD: -28.4 dB DE: -24.4 dB EF: -17.6 dB transmit ON/OFF time 200ms timing Uncertainty of OFF power measurement is handled by Transmit OFF power test and uncertainty of ON power measurement is handled by Minimum output power test.
5.5.1 Transmit OFF power (static case)	Transmit OFF power shall be less than -56 dBm	1.0 dB	Formula: Transmit OFF power + TT Transmit OFF power = –55dBm.
5.5.2 Transmit ON/OFF time mask (dynamic case)	Transmit ON power shall be the target value as defined in clause 5.5.2.2 Transmit OFF power shall be less than -56 dBm	On power upper TT = 0.7 dB On power lower TT = 1.0 dB Off power TT [ ] dB	Formula for transmit ON power: Transmit ON power target upper limit + On power upper TT Transmit ON power target lower limit - On power lower TT To calculate Transmit ON power target value range take the nominal TX power range from Table 5.5.2.3 then apply table 5.4.1.1 open limits then apply table 5.7.1 (only if there has been a transmission gap) then cap the upper value using table 5.2.1. Formula for transmit OFF power: Transmit OFF power + Off power TT Transmit OFF power = [ ]dBm
5.6 Change of TFC: power control step size	TFC step size = +5 to +9 dB	0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT Upper limit = -4.7 dB Lower limit = -9.3 dB
5.7 Power setting in uplink compressed mode	Various	TBD (Subset of 5.4.2)	TBD

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in TS 34.121	
5.8 Occupied Bandwidth	The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps.		0 kHz	Formula: occupied channel bandwidth: + TT occupied channel bandwidth = 5.0 MHz	
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.		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.	
5.10 Adjacent Channel Leakage Power Ratio (ACLR)	If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below.		0.0 dB	Formula: Absolute power threshold + TT	
	Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB		0.8 dB	Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32.2 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB	
5.11 Spurious Emissions				Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.	
	Frequency Band	Minimum Requirement		Frequency Band	Minimum Requirement
	9 kHz ≤ f < 150 kHz	–36dBm /1kHz	0 dB	9kHz ≤ f < 1GHz	–36dBm /1kHz
	150 kHz ≤ f < 30 MHz	–36dBm /10kHz	0 dB	150 kHz ≤ f < 30 MHz	–36dBm /10kHz
	30 MHz ≤ f < 1000 MHz	–36dBm /100kHz	0 dB	30 MHz ≤ f < 1000 MHz	–36dBm /100kHz
	1 GHz ≤ f < 12.75 GHz	–30dBm /1MHz	0 dB	1 GHz ≤ f < 2.2 GHz	–30dBm /1MHz
			0 dB	2.2 GHz ≤ f < 4 GHz	–30dBm /1MHz
			0 dB	4 GHz ≤ f < 12.75 GHz	–30dBm /1MHz
	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz	0 dB	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz
	925 MHz ≤ f ≤ 935 MHz	–67dBm /100kHz	0 dB	925 MHz ≤ f ≤ 935 MHz	–67dBm /100kHz
	935 MHz < f ≤ 960 MHz	–79dBm /100kHz	0 dB	935 MHz < f ≤ 960 MHz	–79dBm /100kHz
	1805 MHz ≤ f ≤ 1880 MHz	–71dBm /100kHz	0 dB	1805 MHz ≤ f ≤ 1880 MHz	–71dBm /100kHz
5.12 Transmit Intermodulation	Intermodulation Product 5MHz -31 dBc 10MHz -41 dBc CW Interferer level = -40 dBc		0 dB	Formula: CW interferer level – TT/2 Intermod Products limits remain unchanged. CW interferer level = -40 dBc	
5.13.1 Transmit modulation: EVM	The measured EVM shall not exceed 17.5%.		0%	Formula: EVM limit + TT EVM limit = 17.5 %	
5.13.2 Transmit modulation: peak code domain error	The measured Peak code domain error shall not exceed -15 dB.		1.0 dB	Formula: Peak code domain error + TT Peak code domain error = -14 dB	

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.13.4 PRACH preamble quality (EVM)	The measured EVM shall not exceed 17.5%.	0%	Formula: EVM limit + TT EVM limit = 17.5 %
5.13.4 PRACH preamble quality (Frequency error)	The UE modulated carrier frequency shall be accurate to within □0.1 ppm compared to the carrier frequency received from the Node B.	10 Hz	Formula: modulated carrier frequency error + TT modulated carrier frequency error = □(0.1 ppm + 10 Hz).

{ Unchanged sections are skipped here}

F.5 Acceptable uncertainty of Test Equipment (This clause is informative)

This informative clause specifies the critical parameters of the components of an overall Test System (e.g. Signal generators, Signal Analysers etc.) which are necessary when assembling a Test System that complies with clause F.1 Acceptable Uncertainty of Test System. These Test Equipment parameters are fundamental to the accuracy of the overall Test System and are unlikely to be improved upon through System Calibration.

F.5.1 Transmitter measurements

Table F.5.1: Equipment accuracy for transmitter measurements

Test	Equipment accuracy	Test conditions
5.2 Maximum Output Power	Not critical	19 to 25 dBm
5.2A Maximum Output Power with HS-DPCCH	Not critical	19 to 25 dBm
5.3 Frequency error	± 10 Hz	0 to 500 Hz.
5.4.1 Open loop power control in uplink	Not critical	-43.7 dBm to 25 dBm
5.4.2 Inner loop power control in the uplink	±0.1 dB relative over a 1.5 dB range ±0.15 dB relative over a 3.0 range ±0.2 dB relative over a 4.5 dB range ±0.3 dB relative over a 26 dB range	+25 dBm to -50 dBm
5.4.3 Minimum Output Power	Not critical	
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	±0.1 dB uncertainty in DPCCH_Ec/Ior ratio	Ratio from –16.6 dB to –28 dB
5.5.1 Transmit ON/OFF Power: UE transmit OFF power	Not critical	-56 dBm (static power)
5.5.2 Transmit ON/OFF Power: transmit ON/OFF time mask	TBD	-56 dBm (dynamic power over approx. 70 dB range)
5.6 Change of TFC: power control step size	±0.3 dB relative over a 9 dB range	+25 dBm to –50 dBm
5.7 Power setting in uplink compressed mode:- UE output power	Subset of 5.4.2	+25 dBm to –50 dBm
5.8 Occupied Bandwidth	±100 kHz	For results between 4 and 6 MHz?
5.9 Spectrum emission mask	Not critical	P_Max Accuracy applies ± 5 dB either side of UE requirements
5.10 ACLR	5 MHz offset ± 0.8 dB 10 MHz offset ± 0.8 dB	19 to 25 dBm at 5 MHz offset for results between 40 dB and 50 dB. 25 dBm at 10 MHz offset for results between 45 dB and 55 dB.
5.11 Spurious emissions	Not critical	19 to 25 dBm
5.12 Transmit Intermodulation	Not critical	19 to 25 dBm
5.13.1 Transmit modulation: EVM	±2.5 % (for single code)	25 dBm to –21 dBm
5.13.2 Transmit modulation: peak code domain error	±1.0dB	For readings between -10 dB to –20 dB.
5.13.4 PRACH preamble quality (EVM)	□2.5 %	25 dBm to –21 dBm
5.13.4 PRACH preamble quality (Frequency error)	± 10 Hz	0 to 500 Hz.

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 here}

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.2.1.

Information Element	Value/Remark
- New intra-frequency cells	24
- Intra-frequency cell id	12+n(n=0 to17)
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-frequency measurement system information	
- New inter-frequency cells	16
- Inter frequency cell id	7+n (n =0 to 12)
- Frequency info	Not Present Absence of this IE is equivalent to value of the previous "frequency info" in the list.
- Cell info	Same content as specified for Inter-frequency cell id=4 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-RAT measurement system information	Not Present

Contents of TRANSPORT CHANNEL RECONFIGURATION message for test cases with HSDPA in clauses 5.2A, 5.9A, 5.10A and 5.13A.1.

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects an integer between 0 and 3
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
New DSCH-RNTI	Not Present
New H-RNTI	'1010 1010 1010 1010'
RRC State indicator	CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
Downlink counter synchronisation info	Not Present
UL Transport channel information for all transport channels	
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- TFC subset	Not Present
- UL DCH TFCS	
- CHOICE TFCI signalling	Normal
- TFCI Field 1 information	
- CHOICE TFCS representation	Complete reconfiguration
- TFCS complete reconfigure information	
- CHOICE CTFC Size	Same as used in the call set up.
- CTFC information	This IE is repeated for TFC numbers used in the call set up
- CTFC	Same as used in the call set up.
- Power offset information	
- CHOICE Gain Factors	Computed Gain Factors except for the reference TFC (3) when Signalled Gain Factors is used
- Gain factor βc	Value used in this test (Not Present if the CHOICE Gain Factors is set to Computed Gain Factors)
- Gain factor βd	Value used in this test (Not Present if the CHOICE Gain Factors is set to Computed Gain Factors)
- Reference TFC ID	0
- CHOICE mode	FDD
- Power offset P p-m	Not Present
Added or Reconfigured UL TrCH information list	Not Present
CHOICE mode	FDD
- CPCH set ID	Not Present
- Added or Reconfigured TrCH information for DRAC list	Not Present
DL Transport channel information common for all transport channel	Not Present
Added or Reconfigured DL TrCH information list	Not Present
Frequency info	Not Present
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	Algorithm1
- TPC step size	1dB
- Δ_{ACK}	Value used in this test (8)

Information Element	Value/remark
- Δ_{NACK}	Value used in this test (8)
- Ack-Nack repetition factor	1
- CHOICE mode	FDD
- Scrambling code type	Long
- Scrambling code number	0 (0 to 16777215)
- Number of DPDCH	Not Present (1)
- spreading factor	Reference to TS34.121 clause C.2.1 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(0)
- Puncturing Limit	1
CHOICE Mode	FDD
- Downlink PDSCH information	Not Present
Downlink HS-PDSCH Information	
- HS-SCCH Info	Not Present
- Measurement Feedback Info	
- CHOICE mode	FDD
- POhsdsch	6 dB
- CQI Feedback cycle, k	2 ms
- CQI repetition factor	1
- Δ_{CQI}	Value used in this test (8)
- CHOICE mode	FDD (no data)
Downlink information common for all radio links	Not Present
Downlink information per radio link list	
- Downlink information for each radio link	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Reference to 34.108 [3] clause 6.1 "Default settings (FDD)"
- PDSCH with SHO DCH info	Not Present
- PDSCH code mapping	Not Present
- Serving HS-DSCH radio link indicator	TRUE
- 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	256
- Code number	192
- 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	Not Present

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CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**518**	⌘**rev**	**-**	⌘	Current version:	**5.6.0** ⌘

*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 section 5: Introduction of new test case for Error Vector Magnitude with HS-DPCCH	
Source:	⌘	Motorola, NEC	
Work item code:	⌘	HSDPA	***Date:*** ⌘ 31/01/2005
Category:	⌘	**B**	***Release:*** ⌘ Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	The introduction of a new test case for Error Vector Magnitude (Rel-5 and later) is added to section 5.
Summary of change:	⌘	Added a new test case 5.13A for error vector magnitude (Rel-5 and later) to align with core specification in 25.101 release 5.
Consequences if not approved:	⌘	There would be no test case for the Rel-5 and later releases of error vector magnitude which would limit coverage for HSDPA testing.

Clauses affected:	⌘	New clause 5.13A				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR applies to release 5 and later releases				

5.13A.1 Error Vector Magnitude (EVM) with HS-DPCCH

5.13A.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 %.

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.

5.13A.1.2 Minimum Requirements

The EVM shall not exceed 17.5 % for the parameters specified in table 5.13A.1. This is applicable for all values of β_c , β_d and β_{hs} as specified in [5].

Table 5.13A.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.

5.13A.1.3 Test purpose

To verify that the EVM does not exceed 17.5 % for the specified parameters in table 5.13A.1. 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.

5.13A.1.4 Method of test

5.13A.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 (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].

5.13A.1.4.2 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.

5.13A.1.5 Test requirements

The measured EVM, derived in step 4) and 6), shall not exceed 17.5 %. for parameters specified in table 5.13A.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.

F.1.2 Measurement of transmitter

Table F.1.2: Maximum Test System Uncertainty for transmitter tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
5.2 Maximum Output Power	±0,7 dB	
5.3 Frequency Error	±10 Hz	
5.4.1 Open loop power control in uplink	±1,0 dB	The uncertainty of this test is a combination of the downlink level setting error and the uplink power measurement that are uncorrelated. Formula = SQRT(source_level_error^2 + power_meas_error^2)
5.4.2 Inner loop power control in the uplink	The test system uncertainty is the function of the UE transmitter power control range for each combination of the step size and number of steps. For 0 dB and 1 dB range ±0,1 dB For a nominal 2 dB range ±0,15 dB For a nominal 3 dB range ±0,2 dB For a greater than 3 dB range ±0,3 dB	This accuracy is based on the linearity of the absolute power measurement of the test equipment.
5.4.3 Minimum Output Power	±1,0 dB	Measured on a static signal
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	±0,4 dB	0.1 dB uncertainty in DPCCH 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 DPCCH_Ec/Ior ratio. The absolute error of the AWGN Ioc is not important but is specified as 1.0 dB
5.5.1 Transmit OFF Power: (static case)	±1,0 dB	Measured on a static signal
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0,7 dB – 1,0 dB Off power (dynamic case) TBD	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 (assume UE won't go above 24 nominal). For the off power, the accuracy of a two-pass measurement needs to be analysed.
5.6 Change of TFC: power control step size (7 dB step)	±0,3 dB relative over a 9 dB range	
5.7 Power setting in uplink compressed mode:- UE output power	Will be a subset of 5.4.2.	
5.8 Occupied Bandwidth	±100 kHz	Accuracy = ±3*RBW. Assume 30 kHz bandwidth.

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
5.9 Spectrum emission mask	±1,5 dB	
5.10 ACLR	5 MHz offset: ± 0,8 dB 10 MHz offset: ± 0,8 dB	
5.11 Spurious emissions	± 2,0 dB for UE and coexistence bands for results > -60 dBm ± 3,0 dB for results < -60 dBm Outside above: f≤2.2GHz: ± 1.5 dB 2.2 GHz < f ≤ 4 GHz: ± 2.0 dB f > 4 GHz: ±4.0 dB	
5.12 Transmit Intermodulation	± 2.2 dB	CW Interferer error is 0.7 dB for the UE power RSS with 0.7 dB for CW setting = 1.0 dB Measurement error of intermod product is 0.7 dB for UE power RSS with 0.7 dB for relative = 1.0 dB Interferer has an effect of 2 times on the intermod product so overall test uncertainty is 2*1.0 RSS with 1.0 = 2.2 dB. Apply half any excess test system uncertainty to increase the interferer level
5.13.1 Transmit modulation: EVM	±2.5 % (for single code)	
5.13A.1 Transmit modulation: EVM with HS-DPCCH	±2.5 % (for single code)	
5.13.2 Transmit modulation: peak code domain error	±1.0dB	
5.13.4 PRACH quality (EVM)	±2.5 %	
5.13.4 PRACH quality (Frequency error)	±10 Hz	

F.2 Test Tolerances (This clause is informative)

The Test Tolerances defined in this clause have been used to relax the Minimum Requirements in the present document to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.).

F.2.1 Transmitter

Table F.2.1: Test Tolerances for transmitter tests.

Clause	Test Tolerance
5.2 Maximum Output Power	0.7 dB
5.3 Frequency error	10 Hz
5.4.1 Open loop power control in uplink	1.0 dB
5.4.2 Inner loop power control in the uplink	0.1 dB (1 dB and 0 dB range) 0.15 dB (2 dB range) 0.2 dB (3 dB range 0.3 dB (> 3 dB range))
5.4.3 Minimum Output Power	1.0 dB
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	0.4 dB
5.4.4 Out-of-synchronisation handling of output power: transmit ON/OFF time	0 ms
5.5.1 Transmit OFF power	1.0 dB
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0.7 dB / -1.0 dB Off power TT [ ] dB
5.6 Change of TFC: power control step size	0.3 dB
5.7 Power setting in uplink compressed mode:- UE output power	See subset of 5.4.2
5.8 Occupied Bandwidth	0 kHz
5.9 Spectrum emission mask	1.5 dB (0 dB for additional requirements for Band II)
5.10 ACLR	0.8 dB for ratio 0.0 dB for absolute power
5.11 Spurious emissions	0 dB
5.12 Transmit Intermodulation	0 dB
5.13.1 Transmit modulation: EVM	0%
5.13A.1 Transmit modulation: EVM with HS-DPCCH	0%
5.13.2 Transmit modulation: peak code domain error	1.0 dB
5.13.4 PRACH preamble quality (EVM)	0%
5.13.4 PRACH preamble quality (Frequency error)	10 Hz

F.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)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.2 Maximum Output Power	Power class 1 (33 dBm) Tolerance = +1/-3 dB Power class 2 (27 dBm) Tolerance = +1/-3 dB Power class 3 (24 dBm) Tolerance = +1/-3 dB Power class 4 (21 dBm) Tolerance = ±2 dB	0.7 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT For power classes 1-3: Upper Tolerance limit = +1.7 dB Lower Tolerance limit = -3.7 dB For power class 4: Upper Tolerance limit = +2.7 dB Lower Tolerance limit = -2.7 dB
5.3 Frequency Error	The UE modulated carrier frequency shall be accurate to within ±0.1 ppm compared to the carrier frequency received from the Node B.	10 Hz	Formula: modulated carrier frequency error + TT modulated carrier frequency error = ±(0.1 ppm + 10 Hz).
5.4.1 Open loop power control in the uplink	Open loop power control tolerance ±9 dB (Normal) Open loop power control tolerance ±12 dB (Normal)	1.0 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT For Normal conditions: Upper Tolerance limit = +10 dB Lower Tolerance limit = -10 dB For Extreme conditions: Upper Tolerance limit = +13 dB Lower Tolerance limit = -13 dB
5.4.2 Inner loop power control in uplink	See table 5.4.2.1 and 5.4.2.2	0.1dB 0.15 dB 0.2 dB 0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT
5.4.3 Minimum Output Power	UE minimum transmit power shall be less than –50 dBm	1.0 dB	Formula: UE minimum transmit power + TT UE minimum transmit power = –49 dBm

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.4.4 Out-of-synchronisation handling of output power:	$\frac{DPCCH\_E_c}{I_{or}}$ levels AB: -22 dB BD: -28 dB DE: -24 dB EF: -18 dB transmit ON/OFF time 200ms $\frac{DPDCH\_E_c}{I_{or}}$ = -16.6 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.4 dB for $\frac{DPCCH\_E}{I_{or}}$ 0 ms for timing measurement	Formulas: Ratio between A and B + TT Ratio between B and D – TT Ratio between D and E – TT Ratio between E and F + TT transmit ON/OFF time + TT timing $\frac{DPDCH\_E_c}{I_{or}}$ = -16.6 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB $\frac{DPCCH\_E_c}{I_{or}}$ levels: AB: -21.6 dB BD: -28.4 dB DE: -24.4 dB EF: -17.6 dB transmit ON/OFF time 200ms timing Uncertainty of OFF power measurement is handled by Transmit OFF power test and uncertainty of ON power measurement is handled by Minimum output power test.
5.5.1 Transmit OFF power (static case)	Transmit OFF power shall be less than -56 dBm	1.0 dB	Formula: Transmit OFF power + TT Transmit OFF power = –55dBm.
5.5.2 Transmit ON/OFF time mask (dynamic case)	Transmit ON power shall be the target value as defined in clause 5.5.2.2 Transmit OFF power shall be less than -56 dBm	On power upper TT = 0.7 dB On power lower TT = 1.0 dB Off power TT [ ] dB	Formula for transmit ON power: Transmit ON power target upper limit + On power upper TT Transmit ON power target lower limit - On power lower TT To calculate Transmit ON power target value range take the nominal TX power range from Table 5.5.2.3 then apply table 5.4.1.1 open limits then apply table 5.7.1 (only if there has been a transmission gap) then cap the upper value using table 5.2.1. Formula for transmit OFF power: Transmit OFF power + Off power TT Transmit OFF power = [ ]dBm

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in TS 34.121	
5.6 Change of TFC: power control step size	TFC step size = +5 to +9 dB		0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT Upper limit = -4.7 dB Lower limit = -9.3 dB	
5.7 Power setting in uplink compressed mode	Various		TBD (Subset of 5.4.2)	TBD	
5.8 Occupied Bandwidth	The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps.		0 kHz	Formula: occupied channel bandwidth: + TT occupied channel bandwidth = 5.0 MHz	
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.		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.	
5.10 Adjacent Channel Leakage Power Ratio (ACLR)	If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below.		0.0 dB	Formula: Absolute power threshold + TT	
	Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB		0.8 dB	Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32.2 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB	
5.11 Spurious Emissions				Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.	
	Frequency Band	Minimum Requirement		Frequency Band	Minimum Requirement
	9 kHz ≤ f < 150 kHz	–36dBm /1kHz	0 dB	9kHz ≤ f < 1GHz	–36dBm /1kHz
	150 kHz ≤ f < 30 MHz	–36dBm /10kHz	0 dB	150 kHz ≤ f < 30 MHz	–36dBm /10kHz
	30 MHz ≤ f < 1000 MHz	–36dBm /100kHz	0 dB	30 MHz ≤ f < 1000 MHz	–36dBm /100kHz
	1 GHz ≤ f < 12.75 GHz	–30dBm /1MHz	0 dB	1 GHz ≤ f < 2.2 GHz	–30dBm /1MHz
			0 dB	2.2 GHz ≤ f < 4 GHz	–30dBm /1MHz
			0 dB	4 GHz ≤ f < 12.75 GHz	–30dBm /1MHz
	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz	0 dB	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz
	925 MHz ≤ f ≤ 935 MHz	–67dBm /100kHz	0 dB	925 MHz ≤ f ≤ 935 MHz	–67dBm /100kHz

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in TS 34.121	
	935 MHz < f ≤ 960 MHz	–79dBm /100kHz	0 dB	935 MHz < f ≤ 960 MHz	–79dBm /100kHz
	1805 MHz ≤ f ≤ 1880 MHz	–71dBm /100kHz	0 dB	1805 MHz ≤ f ≤ 1880 MHz	–71dBm /100kHz
5.12 Transmit Intermodulation	Intermodulation Product 5MHz -31 dBc 10MHz -41 dBc CW Interferer level = -40 dBc		0 dB	Formula: CW interferer level – TT/2 Intermod Products limits remain unchanged. CW interferer level = -40 dBc	
5.13.1 Transmit modulation: EVM	The measured EVM shall not exceed 17.5%.		0%	Formula: EVM limit + TT EVM limit = 17.5 %	
5.13A.1 Transmit modulation: EVM with HS-DPCCH	The measured EVM shall not exceed 17.5%.		0%	Formula: EVM limit + TT EVM limit = 17.5 %	
5.13.2 Transmit modulation: peak code domain error	The measured Peak code domain error shall not exceed -15 dB.		1.0 dB	Formula: Peak code domain error + TT Peak code domain error = -14 dB	
5.13.4 PRACH preamble quality (EVM)	The measured EVM shall not exceed 17.5%.		0%	Formula: EVM limit + TT EVM limit = 17.5 %	
5.13.4 PRACH preamble quality (Frequency error)	The UE modulated carrier frequency shall be accurate to within □0.1 ppm compared to the carrier frequency received from the Node B.		10 Hz	Formula: modulated carrier frequency error + TT modulated carrier frequency error = □(0.1 ppm + 10 Hz).	

F.5 Acceptable uncertainty of Test Equipment (This clause is informative)

This informative clause specifies the critical parameters of the components of an overall Test System (e.g. Signal generators, Signal Analysers etc.) which are necessary when assembling a Test System that complies with clause F.1 Acceptable Uncertainty of Test System. These Test Equipment parameters are fundamental to the accuracy of the overall Test System and are unlikely to be improved upon through System Calibration.

F.5.1 Transmitter measurements

Table F.5.1: Equipment accuracy for transmitter measurements

Test	Equipment accuracy	Test conditions
5.2 Maximum Output Power	Not critical	19 to 25 dBm
5.3 Frequency error	± 10 Hz	0 to 500 Hz.
5.4.1 Open loop power control in uplink	Not critical	-43.7 dBm to 25 dBm
5.4.2 Inner loop power control in the uplink	±0.1 dB relative over a 1.5 dB range ±0.15 dB relative over a 3.0 range ±0.2 dB relative over a 4.5 dB range ±0.3 dB relative over a 26 dB range	+25 dBm to -50 dBm
5.4.3 Minimum Output Power	Not critical	
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	±0.1 dB uncertainty in DPCCH_Ec/Ior ratio	Ratio from –16.6 dB to –28 dB
5.5.1 Transmit ON/OFF Power: UE transmit OFF power	Not critical	-56 dBm (static power)
5.5.2 Transmit ON/OFF Power: transmit ON/OFF time mask	TBD	-56 dBm (dynamic power over approx. 70 dB range)
5.6 Change of TFC: power control step size	±0.3 dB relative over a 9 dB range	+25 dBm to –50 dBm
5.7 Power setting in uplink compressed mode:- UE output power	Subset of 5.4.2	+25 dBm to –50 dBm
5.8 Occupied Bandwidth	±100 kHz	For results between 4 and 6 MHz?
5.9 Spectrum emission mask	Not critical	P_Max Accuracy applies ± 5 dB either side of UE requirements
5.10 ACLR	5 MHz offset ± 0.8 dB 10 MHz offset ± 0.8 dB	19 to 25 dBm at 5 MHz offset for results between 40 dB and 50 dB. 25 dBm at 10 MHz offset for results between 45 dB and 55 dB.
5.11 Spurious emissions	Not critical	19 to 25 dBm
5.12 Transmit Intermodulation	Not critical	19 to 25 dBm
5.13.1 Transmit modulation: EVM	±2.5 % (for single code)	25 dBm to –21 dBm
5.13A.1 Transmit modulation: EVM with HS-DPCCH	±2.5 % (for single code)	25 dBm to –21 dBm
5.13.2 Transmit modulation: peak code domain error	±1.0dB	For readings between -10 dB to –20 dB.
5.13.4 PRACH preamble quality (EVM)	□2.5 %	25 dBm to –21 dBm
5.13.4 PRACH preamble quality (Frequency error)	± 10 Hz	0 to 500 Hz.

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CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**519**	⌘ **rev**	**-**	⌘	Current version:	**5.6.0**	⌘

*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 section 5: Introduction of a new test case for spectrum emission mask with HS-DPCCH		
Source:	⌘	Motorola, NEC		
Work item code:	⌘	HSDPA	***Date:*** ⌘	31/01/2005
Category:	⌘	**B**	***Release:*** ⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	The introduction of a new test case for specturm emission mask (rel-5 and later) is added to section 5.
Summary of change:	⌘	Added a new test case 5.9A for spectrum emission mask (Rel-5 and later) to align with core specification in 25.101 release 5.
Consequences if not approved:	⌘	There would be no test case for the Rel-5 and later releases of spectrum emission mask which would limit coverage for HSDPA testing.

Clauses affected:	⌘	New clause 5.9A				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR applies to release 5 and later releases				

5.9A Spectrum Emission Mask with HS-DPCCH

5.9A.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 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.

5.9A.2 Minimum Requirements

The power of any UE emission shall not exceed the levels specified in table 5.9A.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. This is applicable for all values of β_c, β_d and β_{hs} as specified in [5].

Table 5.9A.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 to 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 to 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 to 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 to 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.

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

5.9A.3 Test purpose

To verify that the power of UE emission does not exceed the prescribed limits shown in table 5.9A.1. 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.

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

5.9A.4 Method of test

5.9A.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 (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].

5.9A.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 until the UE output power with HS-DPCCH shall be set to maximum as defined in table 5.2A.1.
3) Start transmitting HSDPA Data.
4) Measure the power of the transmitted signal with a measurement filter of bandwidths according to table 5.9A.3. 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 5.9A.3. The measured power shall be recorded for each step. The details of the measurement method in the presence of HSDPA is FFS.
5) Measure the RRC filtered mean power centered on the assigned channel frequency.
6) Calculate the ratio of the power 4) with respect to 5) in dBc.
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.

5.9A.5 Test requirements

The result of clause 5.9A.4.2 step 6) shall fulfil the requirements of table 5.9A.3.

Table 5.9A.3: 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 to 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 to 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 to 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 to 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.

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.1.2 Measurement of transmitter

Table F.1.2: Maximum Test System Uncertainty for transmitter tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
5.2 Maximum Output Power	±0,7 dB	
5.3 Frequency Error	±10 Hz	
5.4.1 Open loop power control in uplink	±1,0 dB	The uncertainty of this test is a combination of the downlink level setting error and the uplink power measurement that are uncorrelated. Formula = SQRT(source_level_error^2 + power_meas_error^2)
5.4.2 Inner loop power control in the uplink	The test system uncertainty is the function of the UE transmitter power control range for each combination of the step size and number of steps. For 0 dB and 1 dB range ±0,1 dB For a nominal 2 dB range ±0,15 dB For a nominal 3 dB range ±0,2 dB For a greater than 3 dB range ±0,3 dB	This accuracy is based on the linearity of the absolute power measurement of the test equipment.
5.4.3 Minimum Output Power	±1,0 dB	Measured on a static signal
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	±0,4 dB	0.1 dB uncertainty in DPCCH 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 DPCCH_Ec/Ior ratio. The absolute error of the AWGN Ioc is not important but is specified as 1.0 dB
5.5.1 Transmit OFF Power: (static case)	±1,0 dB	Measured on a static signal
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0,7 dB – 1,0 dB Off power (dynamic case) TBD	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 (assume UE won't go above 24 nominal). For the off power, the accuracy of a two-pass measurement needs to be analysed.
5.6 Change of TFC: power control step size (7 dB step)	±0,3 dB relative over a 9 dB range	
5.7 Power setting in uplink compressed mode:- UE output power	Will be a subset of 5.4.2.	
5.8 Occupied Bandwidth	±100 kHz	Accuracy = ±3*RBW. Assume 30 kHz bandwidth.

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
5.9 Spectrum emission mask	±1,5 dB	
5.9A Spectrum emission mask with HS-DPCCH	±1,5 dB	
5.10 ACLR	5 MHz offset: ± 0,8 dB 10 MHz offset: ± 0,8 dB	
5.11 Spurious emissions	± 2,0 dB for UE and coexistence bands for results > -60 dBm ± 3,0 dB for results < -60 dBm Outside above: f≤2.2GHz: ± 1.5 dB 2.2 GHz < f ≤ 4 GHz: ± 2.0 dB f > 4 GHz: ±4.0 dB	
5.12 Transmit Intermodulation	± 2.2 dB	CW Interferer error is 0.7 dB for the UE power RSS with 0.7 dB for CW setting = 1.0 dB Measurement error of intermod product is 0.7 dB for UE power RSS with 0.7 dB for relative = 1.0 dB Interferer has an effect of 2 times on the intermod product so overall test uncertainty is 2*1.0 RSS with 1.0 = 2.2 dB. Apply half any excess test system uncertainty to increase the interferer level
5.13.1 Transmit modulation: EVM	±2.5 % (for single code)	
5.13.2 Transmit modulation: peak code domain error	±1.0dB	
5.13.4 PRACH quality (EVM)	±2.5 %	
5.13.4 PRACH quality (Frequency error)	±10 Hz	

F.2 Test Tolerances (This clause is informative)

The Test Tolerances defined in this clause have been used to relax the Minimum Requirements in the present document to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.).

F.2.1 Transmitter

Table F.2.1: Test Tolerances for transmitter tests.

Clause	Test Tolerance
5.2 Maximum Output Power	0.7 dB
5.3 Frequency error	10 Hz
5.4.1 Open loop power control in uplink	1.0 dB
5.4.2 Inner loop power control in the uplink	0.1 dB (1 dB and 0 dB range) 0.15 dB (2 dB range) 0.2 dB (3 dB range 0.3 dB (> 3 dB range))
5.4.3 Minimum Output Power	1.0 dB
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	0.4 dB
5.4.4 Out-of-synchronisation handling of output power: transmit ON/OFF time	0 ms
5.5.1 Transmit OFF power	1.0 dB
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0.7 dB / -1.0 dB Off power TT [ ] dB
5.6 Change of TFC: power control step size	0.3 dB
5.7 Power setting in uplink compressed mode:- UE output power	See subset of 5.4.2
5.8 Occupied Bandwidth	0 kHz
5.9 Spectrum emission mask	1.5 dB (0 dB for additional requirements for Band II)
5.9A Spectrum emission mask with HS-DPCCH	1.5 dB (0 dB for additional requirements for Band II, Band IV and Band V only)
5.10 ACLR	0.8 dB for ratio 0.0 dB for absolute power
5.11 Spurious emissions	0 dB
5.12 Transmit Intermodulation	0 dB
5.13.1 Transmit modulation: EVM	0%
5.13.2 Transmit modulation: peak code domain error	1.0 dB
5.13.4 PRACH preamble quality (EVM)	0%
5.13.4 PRACH preamble quality (Frequency error)	10 Hz

F.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)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.2 Maximum Output Power	Power class 1 (33 dBm) Tolerance = +1/-3 dB Power class 2 (27 dBm) Tolerance = +1/-3 dB Power class 3 (24 dBm) Tolerance = +1/-3 dB Power class 4 (21 dBm) Tolerance = ±2 dB	0.7 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT For power classes 1-3: Upper Tolerance limit = +1.7 dB Lower Tolerance limit = -3.7 dB For power class 4: Upper Tolerance limit = +2.7 dB Lower Tolerance limit = -2.7 dB
5.3 Frequency Error	The UE modulated carrier frequency shall be accurate to within ±0.1 ppm compared to the carrier frequency received from the Node B.	10 Hz	Formula: modulated carrier frequency error + TT modulated carrier frequency error = ±(0.1 ppm + 10 Hz).
5.4.1 Open loop power control in the uplink	Open loop power control tolerance ±9 dB (Normal) Open loop power control tolerance ±12 dB (Normal)	1.0 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT For Normal conditions: Upper Tolerance limit = +10 dB Lower Tolerance limit = -10 dB For Extreme conditions: Upper Tolerance limit = +13 dB Lower Tolerance limit = -13 dB
5.4.2 Inner loop power control in uplink	See table 5.4.2.1 and 5.4.2.2	0.1dB 0.15 dB 0.2 dB 0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT
5.4.3 Minimum Output Power	UE minimum transmit power shall be less than –50 dBm	1.0 dB	Formula: UE minimum transmit power + TT UE minimum transmit power = –49 dBm

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.4.4 Out-of-synchronisation handling of output power:	$\frac{DPCCH\_E_c}{I_{or}}$ levels AB: -22 dB BD: -28 dB DE: -24 dB EF: -18 dB transmit ON/OFF time 200ms $\frac{DPDCH\_E_c}{I_{or}}$ = -16.6 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.4 dB for $\frac{DPCCH\_E}{I_{or}}$ 0 ms for timing measurement	Formulas: Ratio between A and B + TT Ratio between B and D – TT Ratio between D and E – TT Ratio between E and F + TT transmit ON/OFF time + TT timing $\frac{DPDCH\_E_c}{I_{or}}$ = -16.6 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB $\frac{DPCCH\_E_c}{I_{or}}$ levels: AB: -21.6 dB BD: -28.4 dB DE: -24.4 dB EF: -17.6 dB transmit ON/OFF time 200ms timing Uncertainty of OFF power measurement is handled by Transmit OFF power test and uncertainty of ON power measurement is handled by Minimum output power test.
5.5.1 Transmit OFF power (static case)	Transmit OFF power shall be less than -56 dBm	1.0 dB	Formula: Transmit OFF power + TT Transmit OFF power = –55dBm.
5.5.2 Transmit ON/OFF time mask (dynamic case)	Transmit ON power shall be the target value as defined in clause 5.5.2.2 Transmit OFF power shall be less than -56 dBm	On power upper TT = 0.7 dB On power lower TT = 1.0 dB Off power TT [ ] dB	Formula for transmit ON power: Transmit ON power target upper limit + On power upper TT Transmit ON power target lower limit - On power lower TT To calculate Transmit ON power target value range take the nominal TX power range from Table 5.5.2.3 then apply table 5.4.1.1 open limits then apply table 5.7.1 (only if there has been a transmission gap) then cap the upper value using table 5.2.1. Formula for transmit OFF power: Transmit OFF power + Off power TT Transmit OFF power = [ ]dBm

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in TS 34.121	
5.6 Change of TFC: power control step size	TFC step size = +5 to +9 dB		0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT Upper limit = -4.7 dB Lower limit = -9.3 dB	
5.7 Power setting in uplink compressed mode	Various		TBD (Subset of 5.4.2)	TBD	
5.8 Occupied Bandwidth	The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps.		0 kHz	Formula: occupied channel bandwidth: + TT occupied channel bandwidth = 5.0 MHz	
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.		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.	
5.9A Spectrum emission mask with HS-DPCCH	Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher.		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, Band IV and Band V due to FCC regulatory requirements. The lower limit shall be –48.5 dBm / 3.84 MHz or which ever is higher.	
5.10 Adjacent Channel Leakage Power Ratio (ACLR)	If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below.		0.0 dB	Formula: Absolute power threshold + TT	
	Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB		0.8 dB	Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32.2 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB	
5.11 Spurious Emissions				Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.	
	Frequency Band	Minimum Requirement		Frequency Band	Minimum Requirement
	9 kHz ≤ f < 150 kHz	–36dBm /1kHz	0 dB	9kHz ≤ f < 1GHz	–36dBm /1kHz
	150 kHz ≤ f < 30 MHz	–36dBm /10kHz	0 dB	150 kHz ≤ f < 30 MHz	–36dBm /10kHz
	30 MHz ≤ f < 1000 MHz	–36dBm /100kHz	0 dB	30 MHz ≤ f < 1000 MHz	–36dBm /100kHz

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in TS 34.121	
	1 GHz ≤ f < 12.75 GHz	–30dBm /1MHz	0 dB	1 GHz ≤ f < 2.2 GHz	–30dBm /1MHz
			0 dB	2.2 GHz ≤ f < 4 GHz	–30dBm /1MHz
			0 dB	4 GHz ≤ f < 12.75 GHz	–30dBm /1MHz
	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz	0 dB	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz
	925 MHz ≤ f ≤ 935 MHz	–67dBm /100kHz	0 dB	925 MHz ≤ f ≤ 935 MHz	–67dBm /100kHz
	935 MHz < f ≤ 960 MHz	–79dBm /100kHz	0 dB	935 MHz < f ≤ 960 MHz	–79dBm /100kHz
	1805 MHz ≤ f ≤ 1880 MHz	–71dBm /100kHz	0 dB	1805 MHz ≤ f ≤ 1880 MHz	–71dBm /100kHz
5.12 Transmit Intermodulation	Intermodulation Product 5MHz -31 dBc 10MHz -41 dBc CW Interferer level = -40 dBc		0 dB	Formula: CW interferer level – TT/2 Intermod Products limits remain unchanged. CW interferer level = -40 dBc	
5.13.1 Transmit modulation: EVM	The measured EVM shall not exceed 17.5%.		0%	Formula: EVM limit + TT EVM limit = 17.5 %	
5.13.2 Transmit modulation: peak code domain error	The measured Peak code domain error shall not exceed -15 dB.		1.0 dB	Formula: Peak code domain error + TT Peak code domain error = -14 dB	
5.13.4 PRACH preamble quality (EVM)	The measured EVM shall not exceed 17.5%.		0%	Formula: EVM limit + TT EVM limit = 17.5 %	
5.13.4 PRACH preamble quality (Frequency error)	The UE modulated carrier frequency shall be accurate to within □0.1 ppm compared to the carrier frequency received from the Node B.		10 Hz	Formula: modulated carrier frequency error + TT modulated carrier frequency error = □(0.1 ppm + 10 Hz).	

F.5 Acceptable uncertainty of Test Equipment (This clause is informative)

This informative clause specifies the critical parameters of the components of an overall Test System (e.g. Signal generators, Signal Analysers etc.) which are necessary when assembling a Test System that complies with clause F.1 Acceptable Uncertainty of Test System. These Test Equipment parameters are fundamental to the accuracy of the overall Test System and are unlikely to be improved upon through System Calibration.

F.5.1 Transmitter measurements

Table F.5.1: Equipment accuracy for transmitter measurements

Test	Equipment accuracy	Test conditions
5.2 Maximum Output Power	Not critical	19 to 25 dBm
5.3 Frequency error	± 10 Hz	0 to 500 Hz.
5.4.1 Open loop power control in uplink	Not critical	-43.7 dBm to 25 dBm
5.4.2 Inner loop power control in the uplink	±0.1 dB relative over a 1.5 dB range ±0.15 dB relative over a 3.0 range ±0.2 dB relative over a 4.5 dB range ±0.3 dB relative over a 26 dB range	+25 dBm to -50 dBm
5.4.3 Minimum Output Power	Not critical	
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	±0.1 dB uncertainty in DPCCH_Ec/Ior ratio	Ratio from –16.6 dB to –28 dB
5.5.1 Transmit ON/OFF Power: UE transmit OFF power	Not critical	-56 dBm (static power)
5.5.2 Transmit ON/OFF Power: transmit ON/OFF time mask	TBD	-56 dBm (dynamic power over approx. 70 dB range)
5.6 Change of TFC: power control step size	±0.3 dB relative over a 9 dB range	+25 dBm to –50 dBm
5.7 Power setting in uplink compressed mode:- UE output power	Subset of 5.4.2	+25 dBm to –50 dBm
5.8 Occupied Bandwidth	±100 kHz	For results between 4 and 6 MHz?
5.9 Spectrum emission mask	Not critical	P_Max Accuracy applies ± 5 dB either side of UE requirements
5.9A Spectrum emission mask with HS-DPCCH	Not critical	P_Max Accuracy applies ± 5 dB either side of UE requirements
5.10 ACLR	5 MHz offset ± 0.8 dB 10 MHz offset ± 0.8 dB	19 to 25 dBm at 5 MHz offset for results between 40 dB and 50 dB. 25 dBm at 10 MHz offset for results between 45 dB and 55 dB.
5.11 Spurious emissions	Not critical	19 to 25 dBm
5.12 Transmit Intermodulation	Not critical	19 to 25 dBm
5.13.1 Transmit modulation: EVM	±2.5 % (for single code)	25 dBm to –21 dBm
5.13.2 Transmit modulation: peak code domain error	±1.0dB	For readings between -10 dB to –20 dB.
5.13.4 PRACH preamble quality (EVM)	□2.5 %	25 dBm to –21 dBm
5.13.4 PRACH preamble quality (Frequency error)	± 10 Hz	0 to 500 Hz.

3GPP TSG-T1 Meeting #26 **Tdoc ⌘T1-050122**
Bangalore, India, 31st January – 4th February 2005

CR-Form-v7.1

CHANGE REQUEST

⌘ **34.121**	**CR** 480	⌘**rev**	**-** ⌘	Current version:	**5.6.0**	⌘

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

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

Title:	⌘ Corrections to RRM test case 8.4.3.1 "Transport format combination selection in UE"		
Source:	⌘ Rohde & Schwarz		
Work item code:	⌘	***Date:*** ⌘	31/01/2005
Category:	⌘ **F**	***Release:*** ⌘	Rel-5
	Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *Ph2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)* *Rel-7 (Release 7)*	

Reason for change: ⌘	a) No generic call setup procedure is specified b) Radio conditions are not specified for the test case. c) Test procedure is not clear.
Summary of change: ⌘	a) Procedure section is modified to specify the call setup procedure. b) Defined the table "Table 8.4.3.1.6: Cell specific test parameters" for specifying the radio conditions for the test case. c) Defined Measurement control message to setup transmissions on the uplink DCCH channel.
Consequences if not approved: ⌘	Incomplete and ambiguous test case specification.

Clauses affected: ⌘	8.4.3.1				
	Y	**N**			
Other specs affected: ⌘		**X**	Other core specifications	⌘	
		X	Test specifications		
		X	O&M Specifications		
Other comments: ⌘					

8.4.3 Transport format combination selection in UE

8.4.3.1 Interactive or Background, PS, UL: 64 kbps

8.4.3.1.1 Definition and applicability

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format set, according to the functionality specified in section 11.4 in TS25.321 [13]. This in order to make it possible for the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321 [13].

The requirements and this test apply to all types of UTRA for the FDD UE for Release 99, Release 4, Release 5 and later releases.

8.4.3.1.2 Minimum requirements

The UE shall continuously evaluate based on the *Elimination*, *Recovery* and *Blocking* criteria defined below, how TFCs on an uplink DPDCH can be used for the purpose of TFC selection. The evaluation shall be performed for every TFC in the TFCS using the estimated UE transmit power of a given TFC. The UE transmit power estimation for a given TFC shall be made using the UE transmitted power measured over the measurement period, defined in 9.1.6.1 of TS 25.133 [2] as one slot, and the gain factors of the corresponding TFC.

The UE shall consider the *Elimination* criterion for a given TFC to be detected if the estimated UE transmit power needed for this TFC is greater than the Maximum UE transmitter power for at least X out of the last Y successive measurement periods immediately preceding evaluation. The MAC in the UE shall consider that the TFC is in Excess-Power state for the purpose of TFC selection.

MAC in the UE shall indicate the available bit rate for each logical channel to upper layers within T_{notify} from the moment the *Elimination* criterion was detected.

The UE shall consider the *Recovery* criterion for a given TFC to be detected if the estimated UE transmit power needed for this TFC has not been greater than the Maximum UE transmitter power for the last Z successive measurement periods immediately preceding evaluation. The MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Recovery* criterion was detected.

The evaluation of the *Elimination* criterion and the *Recovery* criterion shall be performed at least once per radio frame.

The definitions of the parameters X,Y and Z which shall be used when evaluating the *Elimination* and the *Recovery* criteria when no compressed mode patterns are activated are given in Table 8.4.3.1.1.

Table 8.4.3.1.1: X, Y, Z parameters for TFC selection

X	Y	Z
15	30	30

The UE shall consider the *Blocking* criterion for a given TFC to be fulfilled at the latest at the start of the longest uplink TTI after the moment at which the TFC will have been in Excess-Power state for a duration of:

$$(T_{notify} + T_{modify} + T_{L1\_proc})$$

where:

T_{notify} equals 15 ms

T_{modify} equals $MAX(T_{adapt\_max}, T_{TTI})$

$T_{L1\ proc}$ equals 15 ms

T_{adapt_max} equals MAX(T_{adapt_1}, T_{adapt_2}, ..., T_{adapt_N})

N equals the number of logical channels that need to change rate

For Release 99 and Release 4, T_{adapt_n} equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. Table 8.4.3.1.2 defines T_{adapt} times for different services. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms.

Table 8.4.3.1.2: T_{adapt}

Service	T_{adapt} [ms]
UMTS AMR	40
UMTS AMR2	60

For Release 5 and later releases T_{adapt_n} equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms. For services where either UMTS_AMR2 or UMTS_AMR_WB is used, Tadapt shall be considered to be equal to the time required to switch from the current codec mode to a new supported codec mode. In that case Tadapt equals 20 ms + 40 ms per codec mode switch. E.g. Tadapt equals 60ms if one codec mode switch is necessary and Tadapt equals 140ms if 3 codec mode switches are necessary.

T_{TTI} equals the longest uplink TTI of the selected TFC (ms).

The Maximum UE transmitter power is defined as follows

Maximum UE transmitter power = MIN(Maximum allowed UL TX Power, UE maximum transmit power)

where

Maximum allowed UL TX Power is set by SS and defined in TS 25.331 [8], and

UE maximum transmit power is defined by the UE power class, and specified in TS 25.101 [1].

The normative reference for these requirements is TS 25.133 [2] clauses 6.4.2 and A.6.4.1.

8.4.3.1.3 Test purpose

The purpose is to verify the UE blocks (stops using) a currently used TFC when the UE output power is not sufficient to support that TFC. The test will verify the general requirement on TFC selection in section 8.4.3.1.2 for a RAB intended for packet data services, i.e. Interactive or Background, PS, UL: 64kbps as defined in TS 34.108 [3].

8.4.3.1.4 Method of test

8.4.3.1.4.1 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.

The test parameters are given in Table 8.4.3.1.3, 8.4.3.1.4, ~~and~~ Table 8.4.3.1.5 and 8.4.3.1.6 below. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively.

Details on the UL reference RAB in table 8.4.3.1.3 and 8.4.3.1.4 can be found in TS 34.108 [3] section "Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH".

Table 8.4.3.1.3: UL reference RAB, Interactive or Background

	TFI	64 kbps RAB (20ms TTI)	DCCH 3.4kbps (40ms TTI)
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Table 8.4.3.1.4: UL TFCI

TFCI	(64 kbps RAB, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF0, TF1)
UL_TFC2	(TF1, TF0)
UL_TFC3	(TF1, TF1)
UL_TFC4	(TF2, TF0)
UL_TFC5	(TF2, TF1)
UL_TFC6	(TF3, TF0)
UL_TFC7	(TF3, TF1)
UL_TFC8	(TF4, TF0)
UL_TFC9	(TF4, TF1)

Table 8.4.3.1.5: General test parameters

Parameter	Unit	Value	Comment
TFCS size		10	
TFCS		UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC8, UL_TFC9	
Power Control		On	
Active cell		Cell 1	
Maximum allowed UL TX power	dBm	21	
T0	s	10	
T1	s	30	
T2	s	10	
Propagation condition		AWGN	

Table 8.4.3.1.6: Cell specific test parameters

Parameter	Unit	Cell 1		
		T0	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		
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 Ior .				

~~The radio conditions in the test shall be sufficient, so that decoding of the TPC commands can be made without errors.~~

The amount of available user data shall be sufficient to allow uplink transmission at the highest bit rate (UL_TFC8 or UL_TFC9) during the entire test and it shall be ensured that the UE is using UL_TFC8 or UL_TFC9 at the end of T1.

8.4.3.1.4.2 Procedure

1) The SS activates cell 1 with T0 parameters defined in table 8.4.3.1.6.

2~~1~~) The UE is switched on.

3~~2~~) An RRC connection is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.2.3, using the test procedure to setup a PS call using the parameters defined in tables 8.4.3.1.3, 8.4.3.1.4 and 8.4.3.1.5~~The SS shall signal to the UE the allowed TFCS according to table 8.4.3.1.5.~~

4) SS shall transmit a MEASUREMENT CONTROL message.

5~~3~~) For T1=30 secs the SS shall command the UE output power to be between 14 and 15 dB below the UE Maximum allowed UL Tx power (table 8.4.3.1.5).

6~~4~~) The SS shall start sending continuously TPC_cmd=1 to the UE for T2=10 secs (see NOTE).

7~~5~~) The time from the beginning of T2 until the UE blocks (stops using) UL_TFC8 and UL_TFC9 shall be measured by the SS. The UE shall stop using UL_TFC8 and UL_TFC9 within 140 ms from beginning of time period T2. A success is counted, if theUE stops within 140ms. An error is counted otherwise.

8~~6~~) Repeat steps 5~~3~~-7~~5~~ until the confidence level according to annex F.6.2 is achieved.

NOTE: This will emulate that UL_TFC8 to UL_TFC9 can not be supported because the UE reaches the maximum UL Tx power and still SS is sending power-up commands~~. ~~.

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	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

8.4.3.1.5 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.

3GPP TSG-T1 Meeting #26 **Tdoc ⌘T1-050124**
Bangalore, India, 31st January – 4th February 2005

CR-Form-v7.1

CHANGE REQUEST

⌘	34.121	CR	481	⌘ rev	-	⌘	Current version:	5.6.0	⌘

*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:	⌘	Ior value correction for RRM test case, 8.6.2.1
Source:	⌘	Rohde & Schwarz
Work item code:	⌘	
Date:	⌘	31/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
__F__ (correction)
__A__ (corresponds to a correction in an earlier release)
__B__ (addition of feature),
__C__ (functional modification of feature)
__D__ (editorial modification)
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

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

Reason for change:	⌘	The currently specified value of Îor is incorrect and cannot be set.
Summary of change:	⌘	The value Îor is corrected in time period T1 in Table 8.6.2.1.5.
Consequences if not approved:	⌘	Specified Îor cannot be set.

Clauses affected:	⌘	8.6.2.1.5

Other specs affected: ⌘

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

Other comments: ⌘

How to create CRs using this form:

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

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

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

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

8.6.2.1.5 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 ~~0~~	-64.6	-Infinity	-66.10	-71.8	-71.8
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/Io *(Note 1)*	dB	-12.21	-12.20	-Infinity	-13.70	-13.20	-13.20
Propagation Condition	AWGN						
Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters..							

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

3GPP TSG-T1 Meeting #26 **_Tdoc ⌘T1-050311_**
Bangalore, India, 31st Jan to 4th Feb. 2005

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**492**	⌘**rev**	**-**	⌘	Current version:	**5.6.0**	⌘

*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:	⌘	Omission of test points in 6.5. Blocking Characteristics		
Source:	⌘	Rohde & Schwarz		
Work item code:	⌘	TEI	***Date:*** ⌘	31/01/2005
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:*** ⌘	R5 *Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Inappropriate "<" characters copied from core specs 25.101
Summary of change:	⌘	< replaced by ≤ where appropriate
Consequences if not approved:	⌘	Excludes some frequencies from being tested.

Clauses affected:	⌘	6.5				
		Y	**N**			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	Core specs changed by RAN4, CR384 and 385 for 25.101 This is a revised T1-050111				

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 [23] clause 7.6.1.

NOTE: $I_{blocking}$ (modulated) consists of the common channels needed for tests as specified in table E.4.1 and 16 dedicated data channels as specified in table E3.6.

Table 6.5.1: Test parameters for In-band blocking characteristics

Parameter	Unit	Level	
DPCH_Ec	dBm/3.84 MHz	<REFSENS>+3 dB	
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 3 dB	
$I_{blocking}$ mean power (modulated)	dBm	-56 (for F_{uw} offset ±10 MHz)	-44 (for F_{uw} offset ±15 MHz)
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)	

6.5.2.2 Minimum requirements (Out of-band blocking)

The BER shall not exceed 0.001 for the parameters specified in table 6.5.2. For table 6.5.2 up to 24 exceptions are allowed for spurious response frequencies in each assigned frequency channel when measured using a 1 MHz step size.

The normative reference for this requirement is TS 25.101 [23] clause 7.6.2.

Table 6.5.2: Test parameters for Out of band blocking characteristics

Parameter	Unit	Frequency range 1	Frequency range 2	Frequency range 3
DPCH_Ec	dBm/3.84 MHz	<REFSENS>+3 dB	<REFSENS>+3 dB	<REFSENS>+3 dB
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 3 dB	<REF$\hat{I}_{or}$> + 3 dB	<REF$\hat{I}_{or}$> + 3 dB
$I_{blocking}$ (CW)	dBm	-44	-30	-15
F_{uw} (Band I operation)	MHz	2050<f <2095 2185<f <2230	2025 <f ≤~~<~~2050 2230≤ ~~<~~f <2255	1< f ≤~~<~~2025 2255≤~~<~~f<12750
F_{uw} (Band II operation)	MHz	1870<f <1915 2005<f <2050	1845 <f ~~<~~≤1870 2050 ≤~~<~~f <2075	1< f ≤~~<~~1845 2075≤~~<~~f<12750
F_{uw} (Band III operation)	MHz	1745 <f <1790 1895<f <1940	1720 <f ≤~~<~~ 1745 1940≤~~<~~f < 1965	1< f ≤~~<~~1720 1965≤~~<~~f<12750
F_{uw} (Band V operation)	MHz	809< f <854 909< f <954	784< f ≤~~<~~809 954≤~~<~~ f < 979	1< f ≤~~<~~784 979≤~~<~~f<12750
F_{uw} (Band VI operation)	MHz	815 < f < 860 900 < f < 945	790 < f ≤~~<~~ 815 945 ≤~~<~~ f < 970	1 < f ≤~~<~~ 790 970 ≤~~<~~ f < 12750
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)		
Band I operation	For 2095≤~~<~~f ~~<2110 MHz and 2170<f~~≤~~<~~2185 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied.			
Band II operation	For 1915≤~~<~~f ~~<1930 MHz and 1990<f~~≤~~<~~2005 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied			
Band III operation	For 1790≤~~<~~f ~~<1805 MHz and 1880<f~~≤~~<~~1895 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied.			
Band V operation	For 854≤~~<~~f ~~<869 MHz and 894<f~~≤~~<~~909 MHz, the appropriate in-band blocking or adjacent channel selectivity in subclause 6.5.2 and subclause 6.4.2 shall be applied.			
Band VI operation	For 860≤~~<~~ f~~<875 MHz and 885<f~~≤~~<~~900 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied.			

6.5.2.3 Minimum requirements (Narrow band blocking)

The BER shall not exceed 0.001 for the parameters specified in table 6.5.3. This requirement is measure of a receiver's ability to receive a W-CDMA signal at its assigned channel frequency in the presence of an unwanted narrow band interferer at a frequency, which is less than the nominal channel spacing. The requirements and this test apply to UTRA for the FDD UE supporting band II or band III.

The normative reference for this requirement is TS 25.101 [23] clause 7.6.3

Table 6.5.3: Test parameters for narrow band blocking

Parameter	Unit	Band II and Band V	Band III
DPCH_Ec	dBm/3.84 MHz	<REFSENS> + 10 dB	<REFSENS> + 10 dB
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 10 dB	<REF$\hat{I}_{or}$> + 10 dB
$I_{blocking}$ (GMSK)	dBm	-57	-56
F_{uw} (offset)	MHz	2.7	2.8
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)	

NOTE: $I_{blocking}$ (GMSK) is an interfering signal as defined in TS 45.004. It is a GMSK modulated carrier following the structure of the GSM signals, but with all modulating bits (including the midamble period) derived directly from a random or pseudo random data stream.

6.5.3 Test purpose

To verify that the UE BER does not exceed 0,001 for the parameters specified in table 6.5.1, table 6.5.2 and table 6.5.3. For table 6.5.2 up to (24) exceptions are allowed for spurious response frequencies in each assigned frequency channel when measured using a 1 MHz step size.

The lack of the blocking ability decreases the coverage area when other transmitter exists (except in the adjacent channels and spurious response).

6.5.4 Method of test

6.5.4.1 Initial conditions

For in-band case:

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

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

For out-of-band case:

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

Frequency to be tested: 1 arbitrary frequency chosen from the low, mid or high range; see clause G.2.4.

For narrow-band case:

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

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

1) Connect the SS to the UE antenna connector as shown in figure A.5.
2) RF parameters are set up according to table 6.5.4, table 6.5.5 and table 6.5.6.
3) A call is set up according to the Generic call setup procedure specified in TS34.108[3] sub clause 7.3.2, with the following exception for information elements in RADIO BEARER SETUP message. With this exception, the Power Control Algorithm for the Uplink is set to algorithm 2.
4) Enter the UE into loopback test mode and start the loopback test.

Table 6.5.3A Contents of RADIO BEARER SETUP message: AM or UM

Information Element	Value/Remark
CHOICE channel requirement - Power Control Algorithm	Uplink DPCH info Algorithm2

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

6.5.4.2 Procedure

1) Set the parameters of the CW generator or the interference signal generator as shown in table 6.5.4, 6.5.5 and table 6.5.6. For table 6.5.5, the frequency step size is 1 MHz.
2) Set the power level of UE according to the table 6.5.4, table 6.5.5, and table 6.5.6, or send the power control commands (1dB step size should be used.) to the UE until UE output power measured by Test System shall be kept at the specified power level with ±1dB tolerance.
3) Measure the BER of DCH received from the UE at the SS.
4) For table 6.5.5, record the frequencies for which BER exceed the test requirements.

6.5.5 Test requirements

For table 6.5.4, the measured BER, derived in step 2), shall not exceed 0.001. For table 6.5.5, the measured BER, derived in step 2) shall not exceed 0,001 except for the spurious response frequencies, recorded in step 3). The number of spurious response frequencies, recorded in step 3) shall not exceed 24. For table 6.5.6, the measured BER, derived in step 2), shall not exceed 0.001.

Table 6.5.4: Test parameters for In-band blocking characteristics

Parameter	Unit	Level	
DPCH_Ec	dBm/3.84 MHz	<REFSENS>+3 dB	
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 3 dB	
$I_{blocking}$ mean power (modulated)	dBm	-56 (for F_{uw} offset ±10 MHz)	-44 (for F_{uw} offset ±15 MHz)
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)	

Table 6.5.5: Test parameters for Out of band blocking characteristics

Parameter	Unit	Frequency range 1	Frequency range 2	Frequency range 3
DPCH_Ec	dBm/3.84 MHz	<REFSENS>+3 dB	<REFSENS>+3 dB	<REFSENS>+3 dB
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 3 dB	<REF$\hat{I}_{or}$> + 3 dB	<REF$\hat{I}_{or}$> + 3 dB
$I_{blocking}$ (CW)	dBm	-44	-30	-15
F_{uw} (Band I operation)	MHz	2050<f <2095 2185<f <2230	2025 <f ≤~~<~~2050 2230 ≤~~<~~f <2255	1< f ≤~~<~~2025 2255≤~~<~~f<12750
F_{uw} (Band II operation)	MHz	1870<f <1915 2005<f <2050	1845 <f ≤~~<~~1870 2050 ≤~~<~~f <2075	1< f ≤~~<~~1845 2075≤~~<~~f<12750
F_{uw} (Band III operation)	MHz	1745 <f <1790 1895<f <1940	1720 <f ≤~~<~~ 1745 1940≤~~<~~f < 1965	1< f ≤~~<~~1720 1965≤~~<~~f<12750
F_{uw} (Band V operation)	MHz	809< f <854 909< f <954	784< f ≤~~<~~809 954≤~~<~~ f < 979	1< f ≤~~<~~784 979≤~~<~~f<12750
F_{uw} (Band VI operation)	MHz	815 < f < 860 900 < f < 945	790 < f ≤~~<~~ 815 945 ≤~~<~~ f < 970	1 < f ≤~~<~~ 790 970 ≤~~<~~ f < 12750
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)		
Band I operation	For 2095≤~~<~~f ~~<2110 MHz and 2170<f~~≤~~<~~2185 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied.			
Band II operation	For 1915≤~~<~~f ~~<1930 MHz and 1990<f~~≤~~<~~2005 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied			
Band III operation	For 1790≤~~<~~f ~~<1805 MHz and 1880<f~~≤~~<~~1895 MHz, the appropriate in-band blocking or adjacent channel selectivity in clause 6.5.2 and clause 6.4.2 shall be applied.			
Band V operation	For 854≤~~<~~f ~~<869 MHz and 894<f~~≤~~<~~909 MHz, the appropriate in-band blocking or adjacent channel selectivity in subclause 6.5.2 and subclause 6.4.2 shall be applied.			
Band VI operation	For 860≤~~<~~f ~~<875 MHz and 885<f~~≤~~<~~900 MHz, the appropriate in-band blocking or adjacent channel selectivity in subclause 6.5.2 and subclause 6.4.2 shall be applied			

Table 6.5.6: Test parameters for narrow band blocking

Parameter	Unit	Band II and Band V	Band III
DPCH_Ec	dBm/3.84 MHz	<REFSENS> + 10 dB	<REFSENS> + 10 dB
$\hat{I}_{or}$	dBm/3.84 MHz	<REF$\hat{I}_{or}$> + 10 dB	<REF$\hat{I}_{or}$> + 10 dB
$I_{blocking}$ (GMSK)	dBm	-57	-56
F_{uw} (offset)	MHz	2.7	2.8
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)	

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

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan to 4th Feb, 2005

Tdoc ⌘T1-050316

CR-Form-v7

CHANGE REQUEST

⌘ **34.121**	**CR 495**	⌘ **rev** **-** ⌘	Current version:	**5.6.0**	⌘

*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:	⌘ Deletion of Target quality value on DTCH: BLER=0.01 in Clause 8.7.3C UE transmitted power		
Source:	⌘ Rohde & Schwarz		
Work item code:	⌘	***Date:*** ⌘	2005-01-31
Category:	⌘ **F**	***Release:*** ⌘	Rel-5
	Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *Ph2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)* *Rel-7 (Release 7)*

Reason for change:	⌘ Change subsequent upon a change in the core specification 25.133
Summary of change:	⌘ DL power is not any more controlled, it is constant
Consequences if not approved:	⌘ BLER target = 0.01 minimizes the downlink power at the expense of a moderate BLER at the UE receiver. Hence the SS's power up commands may be misunderstood by the UE. This is a stress for the test, not covered by the test purpose.

Clauses affected:	⌘ 8.7.3C				
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘ See: R4-040723 and 724				

8.7.3C UE transmitted power

8.7.3C.1 Definition and applicability

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

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

8.7.3C.2 Minimum requirements

The measurement period in CELL_DCH state is 1 slot.

Table 8.7.3C.2.1 UE transmitted power absolute accuracy

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

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

NOTE 2: UE transmitted power is the reported value.

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

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

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

8.7.3C.3 Test purpose

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

8.7.3C.4 Method of test

8.7.3C.4.1 Initial conditions

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

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

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

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

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

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

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

Parameter	Unit	Cell 1
CPICH_Ec/Ior	dB	-10
PCCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DPCH_Ec/Ior	dB	-3~~Note1~~
OCNS_Ec/Ior	dB	-5.2~~Note 2~~
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN
~~Note 1: The DPCH level is controlled by the power control loop~~ ~~Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.~~		

8.7.3C.4.2 Procedure

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

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

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

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

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

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

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

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

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

Specific Message Contents

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

MEASUREMENT CONTROL message:

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

MEASUREMENT REPORT message:

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

PHYSICAL CHANNEL RECONFIGURATION message:

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

8.7.3C.5 Test requirements

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

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.

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

3GPP TSG-T1 Meeting #26
Bangalore, India, 31. January – 4. February 2005

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CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**522**	⌘**rev**	**-**	⌘	Current version:	**5.6.0**	⌘

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

Title:	⌘	Corrections to TC 8.5.1 UE transmit timing			
Source:	⌘	Nokia, Rohde & Schwarz, Anritsu			
Work item code:	⌘	TEI	***Date:***	⌘	21/02/2005
Category:	⌘	F	***Release:***	⌘	R5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*		

Reason for change:	⌘	Starting point for the UE transmit time adjustment is not clearly specified. In 8.5.1.4.2 procedure step 13, UE established with only Cell 2, and Cell 1 is introduced. In this situation, the power of Cell 2(-99 dBm) is lower than the power of Cell1(-96 dBm), and the downlink power of cell1 is considered as very severe interference to UE. So, UEs may not establish the call. Test system uncertainty of ±0.5 chips for Rx-Tx measurement is missing from TC 8.5.1 in maximum test system uncertainties table in Annex F.1.5. Test tolerances and derivation of test requirements have not been defined for TC 8.5.1 in Annex F.2.4 and F.4.4 Test Tolerances have not been taken into account in Section 8.5.1
Summary of change:	⌘	Exact starting point for measurement of UE Transmission Time Adjustment rate and step size is specified in the procedure section. In table 8.5.1.1, the power of DPCH_Ec/Ior is changed from –17dB to –13.5dB, and the power level of OCNS_Ec/ Ior is changed from –1.05 to –1.2. Test system uncertainty of of ±0.5 chips for Rx-Tx measurement have been added into Table F.1.5 Test tolerances have been added into table F.2.4 Derivation of test requirements have been added into table F.4.4 Test tolerances have been added into Test parameters and Test Requirements in Section 8.5.1 Editorial corrections

Consequences if not approved:	⌘	- Starting point for UE Transmit Time Adjustment remains ambiguous. - The test tolerances are not taken into account so a good UE may fail the test case 8.5.1. - The purpose of the test can not be completed, and good UEs fail the test case

Clauses affected:	⌘	8.5.1, Annex F.1.5, Annex F.2.4, Annex F.4.4				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR is applicable to R99 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.

8.5 Timing and Signalling Characteristics

8.5.1 UE Transmit Timing

8.5.1.1 Definition and applicability

The UE transmit timing is defined as the timing of the uplink DPCCH/DPDCH frame relative to the first detected path (in time) of the corresponding downlink DPCCH/DPDCH frame from the reference cell. The reference point is the antenna connector of the UE.

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

8.5.1.2 Minimum requirements

The UE transmission timing error shall be less than or equal to ±1.5 chips. The reference point for the UE initial transmit timing control requirement shall be the time when the first detected path (in time) of the corresponding downlink DPCCH/DPDCH frame is received from the reference cell plus T_0 chips. T_0 is defined in TS25.211 [19].

When the UE is not in soft handover, the reference cell shall be the one the UE has in the active set. The cell, which is selected as a reference cell, shall remain as a reference cell even if other cells are added to the active set. In case that the reference cell is removed from the active set the UE shall start adjusting its transmit timing no later than the time when the whole active set update message is available at the UE taking the RRC procedure delay into account.

The UE shall be capable of changing the transmission timing according the received downlink DPCCH/DPDCH frame. The maximum amount of the timing change in one adjustment shall be ¼ chip.

The minimum adjustment rate shall be 233ns per second. The maximum adjustment rate shall be ¼ chip per 200 ms. In particular, within any given 800*d ms period, the UE transmit timing shall not change in excess of ±d chip from the timing at the beginning of this 800*d ms period, where $0 \leq d \leq 1/4$.

The normative reference for this requirement is TS 25.133 [2] clause 7.1.2.

8.5.1.3 Test purpose

The purpose of this test is to verify that the UE initial transmit timing accuracy, maximum amount of timing change in one adjustment, minimum and maximum adjustment rate are within the limits specified in 8.5.1.2.

8.5.1.4 Method of test

8.5.1.4.1 Initial conditions

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

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

For this test, two cells on the same frequency are used.

The reporting of event 1A and event 1B is configured with SIB 11.

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

Table 8.5.1.1: Test parameters for UE Transmit Timing requirements

Parameter	Unit	Level
DPCH_Ec/ Ior, Cell 1 and Cell 2	dB	-13.5~~7~~
CPICH_Ec/ Ior, Cell 1 and Cell 2	dB	-10
PCCPH_Ec/ Ior, Cell 1 and Cell 2	dB	-12
SCH_Ec/ Ior, Cell 1 and Cell 2	dB	-12
PICH_Ec/ Ior, Cell 1 and Cell 2	dB	-15
OCNS_Ec/ Ior, Cell 1 and Cell 2	dB	-1.2~~05~~
$\hat{I}_{or,}$ Cell 1	dBm/3.84 MHz	-96
$\hat{I}_{or,}$ Cell 2	dBm/3.84 MHz	-99
Information data rate	kbps	12.2
Relative delay of path received from cell 2 with respect to cell 1	µs	+/-2
Propagation condition	AWGN	

8.5.1.4.2 Procedure

1. A call is set up with Cell 1 according to the Generic call setup procedure. The test parameters are set up according to table 8.5.1.2~~1~~.
2. After a connection is set up with cell 1, the test system shall verify that the UE transmit timing offset is within $T_0 \pm$ 2.0~~1.5~~ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
3. Test system introduces cell 2 into the test system at delay +2 µs from cell 1. UE transmits Measurement report message triggered by event 1A.Test system transmits ACTIVESET UPDATE message (Radio link addition information).
4. Test system transmits Measurement Control message. Test system verifies that cell 2 is added to the active set.
5. Test system shall verify that the UE transmit timing offset is still within $T_0 \pm$ 2.0~~1.5~~ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
6. Test system switches Tx timing of cell 2 to a delay of -2 µs with respect to cell 1.
7. Test system verifies cell 2 remains in the active set. SS then sends a Measurement Control message (measurement release for measurement ID 2)
8. Test system shall verify that the UE transmit timing offset is still within $T_0 \pm$ 2.0~~1.5~~ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
9. Test system stops sending cell 1 signals.
10. Void
11. UE transmits Measurement report message triggered by event 1B, and Test system transmits ACTIVESET UPDATE message (Radio link removal information). Test system verifies that UE transmit timing adjustment starts no later than the RRC procedure delay after the end of the last TTI, containing the active set update message.~~time when the whole active set update message is available at the UE taking the RRC procedure delay into account.~~ The adjustment step size and the adjustment rate shall be according to the requirements in clause 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm$ 2.0~~1.5~~ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.
12. Test system shall verify that the UE transmit timing offset stays within $T_0 \pm$ 2.0~~1.5~~ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.
13. Test system starts sending cell 1 signal again with its original timing. UE transmits Measurement report message triggered by event 1A.Test system transmits ACTIVESET UPDATE message (Radio link addition information).

14. Test system transmits Measurement Control message. Test system verifies that cell 1 is added to the active set. SS then sends a Measurement Control message (~~-~~measurement release for measurement ID 2).

15. Test system verifies that the UE transmit timing is still within $T_0 \pm$ 2.0~~1.5~~ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.

16. Test system stops sending cell 2 signals.

17. Void.

18. UE transmits Measurement report message triggered by event 1B, and Test system transmits ACTIVE SET UPDATE message (Radio link removal information). Test system verifies that UE transmit timing adjustment starts no later than the RRC procedure delay after the end of the last TTI, containing the active set update message. ~~time when the whole active set update message is available at the UE taking the RRC procedure delay into account.~~ The adjustment step size and the adjustment rate shall be according to the requirements in clause 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm$ 2.0~~1.5~~ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.

19. Test system shall verify that the UE transmit timing offset stays within $T_0 \pm$ 2.0~~1.5~~ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.

MEASUREMENT CONTROL message

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	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	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	0
-Filter coefficient	FDD
-CHOICE mode	CPICH RSCP
-Measurement quantity	
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells	
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	FALSE
-CPICH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells	Not Present
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-CHOICE *report criteria*	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

ACTIVESET UPDATE message (Radio link addition information)

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.
- Activation time	"now".
- New U-RNTI	Not Present
CN information elements	
- CN Information info	Not Present
Phy CH information elements	
Uplink radio resources	
- Maximum allowed UL TX power	33 dBm
Downlink radio resources	
- Radio link addition information	1
- Radio link addition information	
- Primary CPICH info	
- Primary scrambling code	Same as adding cell
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	This should be refrlected by the IE" Cell synchronisation information" in received MEASUREMENT REPORT message
- 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
- TFCI combining indicator	FALSE
- SCCPCH Information for FACH	Not Present
- Radio link removal information	Not Present
- TX Diversity Mode	Not Present
- SSDT information	Not Present

ACTIVESET UPDATE message (Radio link removal information)

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements - RRC transaction identifier - Integrity check info -message authentication code -RRC message sequence number - Activation time - New U-RNTI	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. "now". Not Present
CN information elements - CN Information info	 Not Present
Phy CH information elements **Uplink radio resources** - Maximum allowed UL TX power	 33 dBm
Downlink radio resources - Radio link addition information - Radio link removal information - Primary CPICH info - Primary scrambling code - TX Diversity Mode	 Not Present 1 Same as removing cell Not Present
- SSDT information	Not Present

Measurement Control message (measurement release)

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements - RRC transaction identifier - Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity	 2
-Measurement Command	release

8.5.1.5 Test requirements

Table 8.5.1.2: Test parameters for UE Transmit Timing requirements

Parameter	Unit	Level
DPCH_Ec/ Ior, Cell 1 and Cell 2	dB	-13.4
CPICH_Ec/ Ior, Cell 1 and Cell 2	dB	-9.9
PCCPH_Ec/ Ior, Cell 1 and Cell 2	dB	-12
SCH_Ec/ Ior, Cell 1 and Cell 2	dB	-12
PICH_Ec/ Ior, Cell 1 and Cell 2	dB	-15
OCNS_Ec/ Ior, Cell 1 and Cell 2	dB	-1.21
$\hat{I}_{or}$, Cell 1	dBm/3.84 MHz	-95
$\hat{I}_{or}$, Cell 2	dBm/3.84 MHz	-97.7
Information data rate	kbps	12.2
Relative delay of path received from cell 2 with respect to cell 1	µs	+/-2
Propagation condition	AWGN	

1) In step 2, 5. and 8., UE transmit timing offset shall be within T_0 ±2.0~~1.5~~ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.

2) In step 11., the adjustment step size and the adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within T_0 ±2.0~~1.5~~ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.

3) In step 12. and 15., UE transmit timing offset shall be within T_0 ± 2.0~~1.5~~ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.

4) In step 18., the adjustment step size and the adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within T_0 ± 2.0~~1.5~~ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.

5) In step 19., UE transmit timing offset shall be within T_0 ± 2.0~~1.5~~ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.

NOTE 1: The above Test Requirement differs from the Test Requirement of TS 25.133 [2] clause A7.1.2, from which the requirements for the test system are subtracted to give the above Test Requirement.

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

F.1.5 Requirements for support of RRM

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

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.4.3 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)	During T1/T4 and T2/T3: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB During T1/T4 only: Already covered above During T2/T3 only: I_{or} (2) relative to I_{or} (1) ±0.3 dB	

F.2.4 Requirements for support of RRM

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

Clause	Test Tolerance
8.4.3 Transport format combination selection in UE	0 dB for DPCH_Ec/Ior
8.5 Timing and Signalling Characteristics	
8.5.1 UE Transmit Timing	~~TBD~~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	
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

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

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.4.3 Transport format combination selection in UE	DL Power control is ON so DPCH_Ec/Ior depends on TPC commands sent by UE	0 dB for DPCH_Ec/Ior	No test requirements for DPCH_Ec/Ior
8.5 Timing and Signalling Characteristics	~~TBD~~		
8.5.1 UE Transmit Timing	~~TBD~~ 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].		
	During T1 to T4: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T1 to T4: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T1 to T4: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	During T1/T4 only : Already covered above	During T1/T4 only: Covered above	During T1/T4 only: Already covered above
	During T2/T3 only: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB	During T2/T3 only: +0.70 dB +0.70 dB +0.70 dB +0.70 dB	During T2/T3 only: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan to 4th Feb, 2005

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CHANGE REQUEST

⌘	34.121	CR	502	⌘rev	-	⌘	Current version:	5.6.0	⌘

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

Title:	⌘	Test tolerances for Test 9.2.2 Open loop diversity performance and 9.2.3 Closed loop diversity performance
Source:	⌘	Rohde & Schwarz
Work item code:	⌘	***Date:*** ⌘ 31/01/2005
Category:	⌘	**F** ***Release:*** ⌘ R5

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

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

Reason for change:	⌘	Test tolerances for HSDPA open loop diversity performance and closed loop diversity performance are missing in annex F
Summary of change:	⌘	Test Tolerances are introduced into Annex F
Consequences if not approved:	⌘	Test is considered as incomplete

Clauses affected:	⌘	Annex F.1.6, F.2.5, F.4.5, F.5.5

Other specs affected: ⌘

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

Other comments: ⌘

F.1.6 Performance requirement (HSDPA)

Table F.1.6: Maximum Test System Uncertainty for Performance Requirements (HSDPA)

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
9.2.1 Single Link Performance	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in Ec/Ior ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN Ioc is not important for any tests in clause 9 but is specified as 1.0 dB.
9.2.2 Open loop diversity performance	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{E_c}{I_{or}}$ ±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
9.2.3 Closed loop diversity performance	Same as 9.2.2	Same as 9.2.2
9.3.1 AWGN propagation conditions	No test system uncertainty applied	

F.2.5 Performance requirements (HSDPA)

Table F.2.5: Test Tolerances for Performance Requirements (HSDPA).

Clause	Test Tolerance
9.2.1 Single Link Performance	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for Ec/Ior
9.2.2 Open loop diversity performance	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for Ec/Ior
9.2.3 Closed loop diversity performance	Same as 9.2.2
9.4 HS-SCCH Detection Performance	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for P-CPICH_Ec/Ior and HS-SCCH_Ec/Ior

Table F.4.5: Derivation of Test Requirements (Performance tests HSDPA)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
9.2.1 Single Link Performance	$\frac{E_c}{I_{or}}$ -6 and -3 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 0 and 10 dB	0.1 dB for $\frac{E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged
9.2.2 Open loop diversity performance	$\frac{E_c}{I_{or}}$ -6 and -3 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 0 and 10 dB	0.1 dB for $\frac{E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged
9.2.3 Closed loop diversity performance	Same as 9.2.2	Same as 9.2.2	Same as 9.2.2

F.5.5 Performance measurements (HSDPA)

Table F.5.5: Equipment accuracy for performance measurements (HSDPA)

Clause	Equipment accuracy	Test conditions
9.2.1 Single Link Performance	$\frac{E_c}{I_{or}}$ ±0.1 dB	-6 and -3 dB
9.2.2 Open loop diversity performance	Same as 9.2.1	Same as 9.2.1
9.2.3 Closed loop diversity performance	Same as 9.2.1	Same as 9.2.1

3GPP TSG-T1 Meeting #26
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CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**508**	⌘**rev**	**-**	⌘	Current version:	**5.6.0**	⌘

*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:	⌘	Level Definition HS_SCCH_1 and DPCH for Test 9.2.2 Open loop diversity performance And Test 9.2.3 Closed loop diversity performance		
Source:	⌘	Rohde & Schwarz		
Work item code:	⌘		***Date:*** ⌘	31/01/2005
Category:	⌘	**F**	***Release:*** ⌘	R5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	1)HS_SCCH_1 and DPCH levels are missing 2) Test tolerances are missing 3) Feedback error ratio is undefined
Summary of change:	⌘	1) HS_SCCH_1 and DPCH levels are introduced 2) Test Tolerances are introduced 3) Feedback error ratio is applied 4) Minor editorial corrections
Consequences if not approved:	⌘	Test will not work

Clauses affected:	⌘	9.2.2, 9.2.3			
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	See T1-050259: This is the basis for calculating HS_SCCH_1 and DPCH levels			

9.2.2 Open Loop Diversity Performance

9.2.2.1 Definition and applicability

The receiver ~~single~~ open loop transmit diversity performance of the High Speed Physical Downlink Shared Channel (HS-DSCH) in multi-path fading environments are determined by the information bit throughput R.

The UE shall be tested only according to the data rate, supported. The data-rate corresponding requirements shall apply to the UE.

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

9.2.2.2 Minimum requirements

Requirements for a particular UE belonging to certain HS-DSCH category are determined according to Table 9.2.2.1. During the Fixed Reference Channel (FRC) tests the behaviour of the Node-B emulator in response to the ACK/NACK signalling field of the HS-DPCCH is specified in Table 9.2.2.2.

Table 9.2.2.1: Mapping between HS-DSCH category and FRC

HS-DSCH category	Corresponding requirement
Category 1	H-Set 1
Category 2	H-Set 1
Category 3	H-Set 2
Category 4	H-Set 2
Category 5	H-Set 3
Category 6	H-Set 3
Category 11	H-Set 4
Category 12	H-Set 5

Table 9.2.2.2: Node-B Emulator Behaviour in response to ACK/NACK/DTX

HS-DPCCH ACK/NACK Field State	Node-B Emulator Behaviour
ACK	ACK: new transmission using 1st redundancy version (RV)
NACK	NACK: retransmission using the next RV (up to the maximum permitted number or RV's)
DTX	DTX: retransmission using the RV previously transmitted to the same H-ARQ process

For the parameters specified in Tables 9.2.2.3, 9.2.2.5, 9.2.2.7 the requirements are specified in terms of minimum information bit throughput R as shown in Table 9.2.2.4, 9.2.2.6,9.2.2.8, and 9.2.2.9 for QPSK and 16QAM and for the DL reference channels specified in Annex C.8.1.

Table 9.2.2.3: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

Table 9.2.2.4: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	77	375
		-3	180	475
2	PB3	-6	20	183
		-3	154	274
3	VA30	-6	15	187
		-3	162	284
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)			

Table 9.2.2.5: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{6,2,1,5}			
Maximum number of HARQ transmission		4			

Table 9.2.2.6: Minimum requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	295
		-3	463
2	PB3	-6	24
		-3	243
3	VA30	-6	35
		-3	251
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)		

Table 9.2.2.7: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	DBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

Table 9.2.2.8: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10 dB
1	PA3	-6	70	369
		-3	171	471
2	PB3	-6	14	180
		-3	150	276
3	VA30	-6	11	184
		-3	156	285
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.2.2.9: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10 dB
1	PA3	-6	116	563
		-3	270	713
2	PB3	-6	30	275
		-3	231	411
3	VA30	-6	23	281
		-3	243	426
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

The reference for this requirement is TS 25.101 [1] clauses 9.2.2.1, 9.2.2.2 and 9.2.2.3.

9.2.2.3 Test purpose

To verify the ability of the receiver to receive a predefined test signal, representing a multi-path fading channel with information bit throughput R not ~~exceeding~~falling below a specified value. The test stresses the multi-code reception and channel decoding with incremental redundancy.

9.2.2.4 Method of test

9.2.2.4.1 Initial conditions

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

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

1. Connect the SS (Note: This is the Node B Emulator) and fader and AWGN noise source to the UE antenna connector as shown in figure A.19.

2. Set the test parameters for test as specified in table's 9.2.2.11, 9.2.2.13 and 9.2.2.15 and levels as specified in tables 9.2.2.12, 9.2.2.14, 9.2.2.16 and 9.2.2.17. Setup fading simulators as fading condition,

which are described in table D.2.2.1A. The configuration of the downlink channels is defined in table E.5.2.

Table 9.2.2.10: Specific Message Contents for open-loop transmit diversity mode

SYSTEM INFORMATION BLOCK TYPE5

Information Element	Value/remark
PRACH system information list - AICH info - STTD Indicator	 TRUE
Secondary CCPCH system information - PICH info - STTD Indicator - Secondary CCPCH info - STTD Indicator	 TRUE TRUE
Primary CCPCH info - CHOICE mode - TX Diversity indicator	 FDD TRUE

RRC CONNECTION SETUP

Information Element	Value/remark
Downlink information common for all radio links - CHOICE mode - TX Diversity Mode	 FDD STTD
Downlink DPCH info for each RL - CHOICE mode - Downlink DPCH info for each RL - Closed loop timing adjustment mode	 FDD 1

RADIO BEARER SETUP

Information Element	Value/remark
Downlink information common for all radio links - CHOICE mode - TX Diversity Mode	 FDD STTD
Downlink DPCH info for each RL - CHOICE mode - Downlink DPCH info for each RL - Closed loop timing adjustment mode	 FDD 1

9.2.2.4.2 Procedure

1. Set up a HSDPA connection according to the generic HSDPA set-up procedure specified in TS 34.108 [3]~~.~~with levels according to table E.5.0

~~1.~~2. Once the HSDPA connection is setup, change levels according to Tables E.5.6 to E.5.9 and s~~S~~tart transmitting HSDPA Data.

3. The information bit data shall be pseudo random and not repeated before 10 different information bit payload blocks are processed. (e.g. Fixed reference Channel Definition H-set 1 (16 QAM): The information bit payload block is 4664 bits long. Hence the PRBS must be at least 4664 * 10 bits long [27]).

4. Count the number of NACK, ACK and statDTX on the UL HS-DPCCH during the test interval and decide pass or fail according to Annex F.6.3 tables F.6.3.5.3.1, F.6.3.5.3.2. F.6.3.5.3.3 and F.6.3.5.3.4. ACK is counted as a pass. NACK and statDTX are counted as a failure.

9.2.2.5 Test Requirements

Tables 9.2.2.11 to 9.2.2.17 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.

~~The parameters and requirements are specified in table's 9.2.2.11 to 9.2.2.17. 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 (open 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.5.2: column Note.

Table 9.2.2.11: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	~~D~~dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

Table 9.2.2.12: 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	-~~6~~5.9	77	375
		-~~3~~2.9	180	475
2	PB3	-~~6~~5.9	20	183
		-~~3~~2.9	154	274
3	VA30	-~~6~~5.9	15	187
		-~~3~~2.9	162	284
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)			

Table 9.2.2.13: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{6,2,1,5}			
Maximum number of HARQ transmission		4			

Table 9.2.2.14: 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	-~~6~~5.9	295
		-~~3~~2.9	463
2	PB3	-~~6~~5.9	24
		-~~3~~2.9	243
3	VA30	-~~6~~5.9	35
		-~~3~~2.9	251
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)		

Table 9.2.2.15: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	~~D~~dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

Table 9.2.2.16: 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	-~~6~~5.9	70	369
		-~~3~~2.9	171	471
2	PB3	-~~6~~5.9	14	180
		-~~3~~2.9	150	276
3	VA30	-~~6~~5.9	11	184
		-~~3~~2.9	156	285
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.2.2.17: 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	-~~6~~5.9	116	563
		-~~3~~2.9	270	713
2	PB3	-~~6~~5.9	30	275
		-~~3~~2.9	231	411
3	VA30	-~~6~~5.9	23	281
		-~~3~~2.9	243	426
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

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

9.2.3 Closed Loop Diversity Performance

9.2.3.1 Definition and applicability

The receiver ~~single~~ closed loop transmit diversity performance of the High Speed Physical Downlink Shared Channel (HS-DSCH) in multi-path fading environments are determined by the information bit throughput R.

The UE shall be tested only according to the data rate, supported. The data-rate corresponding requirements shall apply to the UE.

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

9.2.3.2 Minimum requirements

Requirements for a particular UE belonging to certain HS-DSCH category are determined according to Table 9.2.3.1. During the Fixed Reference Channel (FRC) tests the behaviour of the Node-B emulator in response to the ACK/NACK signalling field of the HS-DPCCH is specified in Table 9.2.3.2.

Table 9.2.3.1: Mapping between HS-DSCH category and FRC

HS-DSCH category	Corresponding requirement
Category 1	H-Set 1
Category 2	H-Set 1
Category 3	H-Set 2
Category 4	H-Set 2
Category 5	H-Set 3
Category 6	H-Set 3
Category 11	H-Set 4
Category 12	H-Set 5

Table 9.2.3.2: Node-B Emulator Behaviour in response to ACK/NACK/DTX

HS-DPCCH ACK/NACK Field State	Node-B Emulator Behaviour
ACK	ACK: new transmission using 1st redundancy version (RV)
NACK	NACK: retransmission using the next RV (up to the maximum permitted number or RV's)
DTX	DTX: retransmission using the RV previously transmitted to the same H-ARQ process

For the parameters specified in Tables 9.2.3.3, 9.2.3.5, 9.2.3.7 the requirements are specified in terms of minimum information bit throughput R as shown in Table 9.2.3.4, 9.2.3.6, 9.2.3.8, and 9.2.3.9 for QPSK and 16QAM and for the DL reference channels specified in Annex C.8.1.

Table 9.2.3.3: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference		P-CPICH		
I_{oc}	dBm/3.84 MHz	-60		
DPCH frame offset ($\tau_{DPCH,n}$)	Chip	0		
Redundancy and constellation version coding sequence		{0,2,5,6}		
Maximum number of HARQ transmission		4		
Feedback Error Ratioe	%	4		
Closed loop timing adjustment mode		1		

Table 9.2.3.4: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10 dB
1	PA3	-6	118	399
		-3	225	458
2	PB3	-6	50	199
		-3	173	301
3	VA30	-6	47	204
		-3	172	305
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integers) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)			

Table 9.2.3.5: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference		P-CPICH		
I_{oc}	dBm/3.84 MHz	-60		
DPCH frame offset ($\tau_{DPCH,n}$)	Chip	0		
Redundancy and constellation version coding sequence		{6,2,1,5}		
Maximum number of HARQ transmission		4		
Feedback Error Ratioe	%	4		
Closed loop timing adjustment mode		1		

Table 9.2.3.6 Minimum requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c / I_{or} **(dB)**	**T-put** R **(kbps) *** $\hat{I}_{or} / I_{oc}$ **= 10 dB**
1	PA3	-6	361
		-3	500
2	PB3	-6	74
		-3	255
3	VA30	-6	84
		-3	254
* Notes:	1)The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)		

Table 9.2.3.7: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference		P-CPICH		
I_{oc}	dBm/3.84 MHz	-60		
DPCH frame offset ($\tau_{DPCH,n}$)	Chip	0		
Redundancy and constellation version coding sequence		{0,2,5,6}		
Maximum number of HARQ transmission		4		
Feedback Error Ratio~~e~~	%	4		
Closed loop timing adjustment mode		1		

Table 9.2.3.8: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} **(dB)**	**T-put** R **(kbps) *** $\hat{I}_{or} / I_{oc}$ **= 0 dB**	**T-put** R **(kbps) *** $\hat{I}_{or} / I_{oc}$ **= 10 dB**
1	PA3	-6	114	398
		-3	223	457
2	PB3	-6	43	196
		-3	167	292
3	VA30	-6	40	199
		-3	170	305
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.2.3.9: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	177	599
		-3	338	687
2	PB3	-6	75	299
		-3	260	452
3	VA30	-6	71	306
		-3	258	458
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

The reference for this requirement is TS 25.101 [1] clauses 9.2.3.1, 9.2.3.2 and 9.2.3.3.

9.2.3.3 Test purpose

To verify the ability of the receiver to receive a predefined test signal, representing a multi-path fading channel with information bit throughput R not ~~exceeding~~falling below 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 s~~S~~tart 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 [2~~6~~7].)

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

~~4~~5. 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

~~The parameters and requirements are specified in table's 9.2.3.11 to 9.2.3.17. The pass / fail decision for throughput is done according to Annex F.6.3.~~

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~~e~~	%	4		
Closed loop timing adjustment mode		1		

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	-~~6~~5.9	118	399
		-~~3~~2.9	225	458
2	PB3	-~~6~~5.9	50	199
		-~~3~~2.9	173	301
3	VA30	-~~6~~5.9	47	204
		-~~3~~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 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference		P-CPICH		
I_{oc}	dBm/3.84 MHz	-60		
DPCH frame offset ($\tau_{DPCH,n}$)	Chip	0		
Redundancy and constellation version coding sequence		{6,2,1,5}		
Maximum number of HARQ transmission		4		
Feedback Error Ratio~~e~~	%	4		
Closed loop timing adjustment mode		1		

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	-~~6~~5.9	361
		-~~3~~2.9	500
2	PB3	-~~6~~5.9	74
		-~~3~~2.9	255
3	VA30	-~~6~~5.9	84
		-~~3~~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~~e~~	%	4		
Closed loop timing adjustment mode		1		

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	-~~6~~5.9	114	398
		-~~3~~2.9	223	457
2	PB3	-~~6~~5.9	43	196
		-~~3~~2.9	167	292
3	VA30	-~~6~~5.9	40	199
		-~~3~~2.9	170	305
* Notes: 1) 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	-~~6~~5.9	177	599
		-~~3~~2.9	338	687
2	PB3	-~~6~~5.9	75	299
		-~~3~~2.9	260	452
3	VA30	-~~6~~5.9	71	306
		-~~3~~2.9	258	458
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

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

3GPP TSG-T1 Meeting #26 **Tdoc ⌘T1-050366**
Bangalore, India, 31st January – 4th February 2004

CR-Form-v7.1

CHANGE REQUEST

⌘	**34.121**	**CR**	**509**	⌘ **rev**	**-**	⌘	Current version:	**5.6.0**	⌘

*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:	⌘	Changes to Annex I to harmonise System Information scheduling for RRM test cases.
Source:	⌘	Anritsu, Rohde & Schwarz
Work item code:	⌘	
Date:	⌘	03/02/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

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

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

Use one of the following releases:

Ph2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	SIB scheduling introduced in Annex I for test cases with scheduling based on Monitored Cell list is not harmonised with test cases with scheduling based on the maximum SIB repetition period.
Summary of change:	⌘	a) Deleted the table of the Master Information Block for test cases with scheduling based on maximum SIB repetition period and merged it with the table of the Master Information Block based on Monitored Cell list. b) Deleted existing table of the Scheduling Block 1 for these test cases and created it again based on Scheduling Block 1 description based on Monitored Cell list.
Consequences if not approved:	⌘	Un-necessary SIB scheduling definitions.

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

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

Contents of MEASUREMENT REPORT message for Inter frequency test cases

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

Contents of MEASUREMENT REPORT message for inter – RAT test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Inter-RAT measured results list	
- CHOICE system	GSM
- GSM	
- Measured GSM cells	Checked that this IE is present
- GSM carrier RSSI	If reporting of “GSM carrier RSSI“ measurement is configured then check that this IE is present. If reporting of “GSM carrier RSSI “ measurement is not configured then check that this IE is absent.
- CHOICE *BSIC*	Non verified BSIC
- Non verified BSIC	
- BCCH ARFCN	Checked that this IE is present
- Observed time difference to GSM cell	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

Contents of RRC CONNECTION SETUP message: UM (Transition to CELL_DCH)

The following information element is exception of TS34.108 for test cases 7.8.1, 7.8.2, and 7.8.3.

Information Element	Value/remark
Added or Reconfigured DL TrCH information	
- DCH quality target	
- BLER Quality value	0.0

~~Contents of Master Information Block PLMN type is the case of GSM-MAP~~

~~The following information element is exception of TS34.108 based on 8.2.2, 8.3.5, 8.4.1,8.3.6, 8.3.7 test cases.~~

~~Information Element~~	~~Value/Remark~~
~~- SIB_REP~~	~~128~~
~~- SIB_POS~~	~~44~~
~~- SIB and SB type~~	~~System Information Type 1~~
~~- SIB_REP~~	~~128~~
~~- SIB_POS~~	~~44~~
~~- SIB and SB type~~	~~System Information Type 2~~
~~- SIB_REP~~	~~128~~
~~- SIB_POS~~	~~40~~
~~- SIB and SB type~~	~~System Information Type 3~~
~~- SIB_REP~~	~~128~~
~~- SIB_POS~~	~~104~~
~~- SIB and SB type~~	~~System Information Type 4~~
~~- SIB_REP~~	~~128~~
~~- SIB_POS~~	~~76~~
~~- SIB and SB type~~	~~System Information Type 5~~

~~Contents of Scheduling Block 1 (FDD)~~

~~The following information element is exception of TS34.108 based on monitorlist size for 8.2.2, 8.3.5, 8.4.1, 8.3.6, 8.3.7 test cases.~~

~~Information Element~~	~~Value/Remark~~
~~- SIB_REP~~	~~128~~
~~- SIB_POS~~	~~12~~
~~- SIB type SIBs only~~	~~System Information Type 6~~
~~- SIB_REP~~	~~128~~
~~- SIB_POS~~	~~116~~
~~- SIB type SIBs only~~	~~System Information Type 11~~
~~- SIB_REP~~	~~128~~
~~- SIB_POS~~	~~52~~
~~- SIB type SIBs only~~	~~System Information Type 12~~
~~- SIB_REP~~	~~128~~
~~- SIB_POS~~	~~72~~
~~- SIB type SIBs only~~	~~System Information Type 18~~

Contents of Master Information Block PLMN type is the case of GSM-MAP

The following information element is exception of TS34.108 based on monitorlist size for 8.3.4, 8.3.5.3, 8.4.1.1, 8.4.1.2, 8.6.1.1,8.6.1.1A, 8.6.1.2, 8.6.1.2A, 8.6.1.3, 8.6.1.4, 8.6.2.1,8.6.2.2, 8.6.4.1 test cases and based on the maximum SIB repetition period for 8.2.2.1, 8.2.2.2, 8.3.5.1, 8.3.5.2, 8.3.6.1, 8.3.6.2, 8.3.7.1 and 8.3.7.2 test cases.

Information Element	Value/Remark
- SIB_POS	2
- SIB_POS offset info	Not Present
- SIB and SB type	Scheduling Block 1
- SIB_REP	128
- SIB_POS	22
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 1
- SIB_REP	128
- SIB_POS	22
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 2
- SIB_REP	128
- SIB_POS	20
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 3
- SIB_REP	128
- SIB_POS	52
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 4
- SIB_REP	128
- SIB_POS	38
- SIB_POS offset info	3
- SIB and SB type	System Information Type 5

Contents of Scheduling Block 1 (FDD)

The following information element is exception of TS34.108 based on SIB repetition period for 8.2.2.1, 8.2.2.2, 8.3.5.1, 8.3.5.2, 8.3.6.1, 8.3.6.2, 8.3.7.1 and 8.3.7.2 test cases.

Information Element	Value/Remark
- References to other system information blocks	
- SIB_REP	128
- SIB_POS	6
- SIB_POS offset info	3
- SIB type SIBs only	System Information Type 6
- SIB_POS	4
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	3
- SIB_REP	128
- SIB_POS	58
- SIB_POS offset info	2
- SIB_OFF	2
- SIB_OFF	2
- SIB type SIBs only	System Information Type 11
- SIB_REP	128
- SIB_POS	26
- SIB_POS offset info	2
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SIB_REP	128
- SIB_POS	36
- SIB type SIBs only	System Information Type 18

Contents of Scheduling Block 1 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.4.1.1,8.4.1.2,8.6.1.1,8.6.1.1A,8.6.1.4,8.6.2.2 test cases.

Information Element	Value/Remark
- References to other system information blocks	
- SIB_REP	128
- SIB_POS	6
- SIB_POS offset info	3
- SIB type SIBs only	System Information Type 6
- SIB_POS	4
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	4
- SIB_REP	128
- SIB_POS	54
- SIB_POS offset info	3
- SIB_OFF	4
- SIB_OFF	2
- SIB_OFF	2
- SIB type SIBs only	System Information Type 11
- SIB_REP	128
- SIB_POS	26
- SIB_POS offset info	2
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SIB_REP	128
- SIB_POS	36
- SIB type SIBs only	System Information Type 18

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.4.1.1,8.4.1.2,8.6.1.1,8.6.1.1A,8.6.1.4.

Information Element	Value/Remark
- Intra-frequency measurement system information	
- New intra-frequency cells	24
- Intra-frequency cell id	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	Not Present

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.2.2.

Information Element	Value/Remark
- New intra-frequency cells	16
- Intra-frequency cell id	12+n (n=0 to 3)
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-frequency measurement system information	
- New inter-frequency cells	8
- Inter frequency cell id	7+n (n =0 to 4)
- Frequency info	Not Present Absence of this IE is equivalent to value of the previous "frequency info" in the list.
- Cell info	Same content as specified for Inter-frequency cell id=4 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-RAT measurement system information	Not Present

Contents of Scheduling Block 1 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.3.4, 8.3.5.3, 8.6.1.2,8.6.1.2A, 8.6.1.3, 8.6.4.1.

Information Element	Value/Remark
- References to other system information blocks	
- SIB_REP	128
- SIB_POS	6
- SIB_POS offset info	3
- SIB type SIBs only	System Information Type 6
- SIB_POS	4
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	5
- SIB_REP	128
- SIB_POS	54
- SIB_POS offset info	4
- SIB_OFF	4
- SIB_OFF	2
- SIB_OFF	2
- SIB_OFF	8
- SIB type SIBs only	System Information Type 11
- SIB_REP	128
- SIB_POS	26
- SIB_POS offset info	2
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- SIB_REP	128
- SIB_POS	36
- SIB type SIBs only	System Information Type 18

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.3.4, 8.3.5.3, 8.6.4.1

Information Element	Value/Remark
- Intra-frequency measurement system information	
- New intra-frequency cells	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)	Note:Any values depend on UEs.
- Band indicator	According to PICS/PIXIT
- BCCH ARFCN	Note:Any values that depend on UEs.

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.1.2,8.6.1.2A, 8.6.1.3.

Information Element	Value/Remark
- Intra-frequency measurement system information - New intra-frequency cells - Intra-frequency cell id - Cell info	 32 n(n=0, 4, 5, 6, 9, 10 and 12 to 31) Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present

Contents of Scheduling Block 1 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.2.1 test case.

Information Element	Value/Remark
- References to other system information blocks	
- SIB_REP	128
- SIB_POS	6
- SIB_POS offset info	3
- SIB type SIBs only	System Information Type 6
- SIB_POS	4
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	6
- SIB_REP	128
- SIB_POS	54
- SIB_POS offset info	5
- SIB_OFF	4
- SIB_OFF	2
- SIB_OFF	2
- SIB_OFF	8
- SIB_OFF	4
- SIB type SIBs only	System Information Type 11
- SIB_REP	128
- SIB_POS	26
- SIB_POS offset info	2
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	1
- SIB_REP	128
- SIB_POS	36
- SIB type SIBs only	System Information Type 18

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.2.1.

Information Element	Value/Remark
- New intra-frequency cells	24
- Intra-frequency cell id	12+n(n=0 to17)
- Cell info	Same content as specified for Intra-frequency cell id=2 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-frequency measurement system information	
- New inter-frequency cells	16
- Inter frequency cell id	7+n (n =0 to 12)
- Frequency info	Not Present Absence of this IE is equivalent to value of the previous "frequency info" in the list.
- Cell info	Same content as specified for Inter-frequency cell id=4 with the exception that value for Primary scrambling code shall not be overlapped values.
- Inter-RAT measurement system information	Not Present

3GPP TSG-T1 Meeting #26 **_Tdoc ⌘T1-050368_**
Bangalore, India, 31st Jan to 4th Feb, 2005

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	510	⌘ rev	-	⌘	Current version:	5.6.0	⌘

*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:	⌘	Level Definition HS_SCCH_1 and DPCH for Test 9.2.1 Single link performance		
Source:	⌘	Rohde & Schwarz		
Work item code:	⌘		***Date:*** ⌘	31/01/2005
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:*** ⌘	R5 *Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	HS_SCCH_1 and DPCH levels are missing
Summary of change:	⌘	1) HS_SCCH_1 and DPCH levels are introduced 2) minor editorial corrections
Consequences if not approved:	⌘	Test will not work

Clauses affected:	⌘	9.2.1, Annex E.5				
		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	See T1-050259: This is the basis for calculating HS_SCCH_1 and DPCH levels				

9.2 Demodulation of HS-DSCH (Fixed Reference Channel)

9.2.1 Single Link Performance

9.2.1.1 Definition and applicability

The receiver single link performance of the High Speed Physical Downlink Shared Channel (HS-DSCH) in different multi-path fading environments are determined by the information bit throughput R.

The UE shall be tested only according to the data rate, supported. The data-rate corresponding requirements shall apply to the UE.

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

9.2.1.2 Minimum requirements

Requirements for a particular UE belonging to certain HS-DSCH category are determined according to Table 9.2.1.1. During the Fixed Reference Channel (FRC) tests the behaviour of the Node-B emulator in response to the ACK/NACK signalling field of the HS-DPCCH is specified in Table 9.2.1.2.

Table 9.2.1.1: Mapping between HS-DSCH category and FRC

HS-DSCH category	Corresponding requirement
Category 1	H-Set 1
Category 2	H-Set 1
Category 3	H-Set 2
Category 4	H-Set 2
Category 5	H-Set 3
Category 6	H-Set 3
Category 11	H-Set 4
Category 12	H-Set 5

Table 9.2.1.2: Node-B Emulator Behaviour in response to ACK/NACK/DTX

HS-DPCCH ACK/NACK Field State	Node-B Emulator Behaviour
ACK	ACK: new transmission using 1st redundancy version (RV)
NACK	NACK: retransmission using the next RV (up to the maximum permitted number or RV's)
DTX	DTX: retransmission using the RV previously transmitted to the same H-ARQ process

For the parameters specified in Table 9.2.1.3, 9.2.1.5, 9.2.1.7 the requirements are specified in terms of minimum information bit throuhput R as shown in Table 9.2.1.4, 9.2.1.6,9.2.1.8, and 9.2.1.9 for QPSK and 16QAM and for the DL reference channels specified in Annex C.8.1.

Table 9.2.1.3: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference	dBm/3.84 MHz	P-CPICH			
I_{oc}		-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

Table 9.2.1.4: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	65	309
		-3	N/A	423
2	PB3	-6	23	181
		-3	138	287
3	VA30	-6	22	190
		-3	142	295
4	VA120	-6	13	181
		-3	140	275
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)				

Table 9.2.1.5: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference	dBm/3.84 MHz	P-CPICH			
I_{oc}		-60			
Redundancy and constellation version coding sequence		{6,2,1,5}			
Maximum number of HARQ transmission		4			

Table 9.2.1.6: Minimum requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	198
		-3	368
2	PB3	-6	34
		-3	219
3	VA30	-6	47
		-3	214
4	VA120	-6	28
		-3	167

* Notes:	1)The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)

Table 9.2.1.7: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

Table 9.2.1.8: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0 ~~Db~~dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	72	340
		-3	N/A	439
2	PB3	-6	24	186
		-3	142	299
3	VA30	-6	19	183
		-3	148	306
4	VA120	-6	11	170
		-3	144	284
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.2.1.9: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	98	464
		-3	N/A	635
2	PB3	-6	35	272
		-3	207	431
3	VA30	-6	33	285
		-3	213	443
4	VA120	-6	20	272
		-3	210	413
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

The reference for this requirement is TS 25.101 [1] clauses 9.2.1.1, 9.2.1.2 and 9.2.1.3.

9.2.1.3 Test purpose

To verify the ability of the receiver to receive a predefined test signal, representing a multi-path fading channel with information bit throughput R not falling below a specified value. The test stresses the multicode reception and channel decoding with incremental redundancy.

9.2.1.4 Method of test

9.2.1.4.1 Initial conditions

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

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

1) Connect the SS (node B emulator) and fader and AWGN noise source to the UE antenna connector as shown in figure A.17.
2) Set up an HSDPA call according to TS 34.108 [3] clause 7.3.6.3. with levels according to table E.5.0
3) Set the test parameters for tests 1-4 according to tables 9.2.1.2, 9.2.1.39.2.1.5 (Category 1-6) or 9.2.1.7 (Category 11,12)and levels according to tables 9.2.1.12 to 9.2.1.15 (Category 1-6) or 9.2.1.16 to 9.2.1.18 (Category 11,12). The configuration of the downlink channels is defined in table E.5.1.
4) The information bit data shall be pseudo random and not repeated not before 10 different information bit payload blocks are processed. (e.g. Fixed reference Channel Definition H-set 1 (16 QAM): The information bit payload block is 4664 bits long. Hence the PRBSequence must be at least 4664 * 10 bits long.) Use a PRBS from ITU-R O.153 Ref [26]
5) The SS shall not time the transmission freely. It shall time the transmission strictly according to the reference measurement channels: i.e. Process number i is continued exactly after 6 TTIs.
6) Setup fading simulators as fading conditions , which are described in table D.2.2.1.A

9.2.1.4.2 Procedure

1) Once the HSDPA connection is setup, change levels according to Tables E.5.6 to E.5.9 and s~~S~~tart transmitting HSDPA Data.
2) For all relevant propagation conditions, for all relevant Ioc levels, for all relevant Ec/Ior, for all relevant Îor/Ioc, for all relevant H-sets in tables 9.2.1.12 to 9.2.1.18 count the number of NACK, ACK and statDTX on the UL HS-DPCCH during the test interval and decide pass or fail according to Annex F.6.3 tables F.6.3.5.2.1, F.6.3.5.2.2, F.6.3.5.2.3 and F.6.3.5.2.4.

9.2.1.5 Test Requirements

Tables 9.2.1.12 to 9.2.1.18 define the primary level settings including test tolerance 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.

Table 9.2.1.12: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60 (no test tolerance applied)			

Table 9.2.1.13: Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0.3 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10.3 dB
1	PA3	-5.9	65	309
		-2.9	N/A	423
2	PB3	-5.9	23	181
		-2.9	138	287
3	VA30	-5.9	22	190
		-2.9	142	295
4	VA120	-5.9	13	181
		-2.9	140	275
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)			

Table 9.2.1.14: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60 (no test tolerance applied)			

Table 9.2.1.15: Test requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10.3 dB
1	PA3	-5.9	198
		-2.9	368
2	PB3	-5.9	34
		-2.9	219
3	VA30	-5.9	47
		-2.9	214
4	VA120	-5.9	28
		-2.9	167
* Notes:	1)The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)		

Table 9.2.1.16: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60 (no test tolerance applied)			

Table 9.2.1.17: Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0.3 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10.3 dB
1	PA3	-5.9	72	340
		-2.9	N/A	439
2	PB3	-5.9	24	186
		-2.9	142	299
3	VA30	-5.9	19	183
		-2.9	148	306
4	VA120	-5.9	11	170
		-2.9	144	284
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.2.1.18: Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0.3 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10.3 dB
1	PA3	-5.9	98	464
		-2.9	N/A	635
2	PB3	-5.9	35	272
		-2.9	207	431
3	VA30	-5.9	33	285
		-2.9	213	443
4	VA120	-5.9	20	272
		-2.9	210	413
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

E.5 HSDPA DL Physical channels

E.5.0 Downlink Physical Channels for connection set-up

Table E.5.0: Levels for HSDPA connection setup

Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH _Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

E.5.1 Downlink Physical Channels for measurement~~connection set-up~~

Table E.5.1 is applicable for the measurements for tests in subclause 6.3A, 9.2.1 and 9.3. Table E.5.2 is applicable for the measurements for tests in subclause 9.2.2. Table E.5.3 is applicable for the measurements for tests in subclause 9.2.3. Table E.5.4 is applicable for the measurements for tests in subclause 9.4.

Table E.5.1: Downlink physical channels for HSDPA receiver testing for Single Link performance.

Physical Channel	Parameter	Value	Note
P-CPICH	P-CPICH_Ec/Ior	-10dB	
P-CCPCH	P-CCPCH_Ec/Ior	-12dB	Mean power level is shared with SCH.
SCH	SCH_Ec/Ior	-12dB	Mean power level is shared with P-CCPCH – SCH includes P- and S-SCH, with power split between both. P-SCH code is S_dl,0 as per [14] S-SCH pattern is scrambling code group 0
PICH	PICH_Ec/Ior	-15dB	
DPCH	DPCH_Ec/Ior	Test-specific	12.2 kbps DL reference measurement channel as defined in Annex C.3.1
HS-SCCH_1	HS-SCCH_Ec/Ior	Test-specific	Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval). During TTIs, in which the HS-SCCH is not allocated to the UE the HS-SCCH shall be transmitted continuously with constant power.
HS-SCCH_2	HS-SCCH_Ec/Ior	DTX'd	No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/Ior	DTX'd	As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/Ior	DTX'd	As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	OCNS interference consists of 6 dedicated data channels as specified in table E.5.5

Table E.5.2: Downlink physical channels for HSDPA receiver testing for Open Loop Transmit Diversity performance.

Physical Channel	Parameter	Value	Note
P-CPICH (antenna 1)	P-CPICH_Ec1/Ior	-13dB	1. Total P-CPICH_Ec/Ior = -10dB
P-CPICH (antenna 2)	P-CPICH_Ec2/Ior	-13dB	
P-CCPCH (antenna 1)	P-CCPCH_Ec1/Ior	-15dB	1. STTD applied. 2. Total P-CCPCH Ec/Ior is –12dB.
P-CCPCH (antenna 2)	P-CCPCH_Ec2/Ior	-15dB	
SCH (antenna 1/2)	SCH_Ec/Ior	-12dB	1. TSTD applied. 2. Power divided equally between primary and secondary SCH.
PICH (antenna 1)	PICH_Ec1/Ior	-18dB	1. STTD applied. 2. Total PICH Ec/Ior is –15dB.
PICH (antenna 2)	PICH_Ec2/Ior	-18dB	
DPCH	DPCH_Ec/Ior	Test-specific	1. STTD applied.
HS-SCCH_1	HS-SCCH_Ec/Ior	Test-specific	1. STTD applied. 2. Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval). During TTIs, in which the HS-SCCH_1 is not allocated to the UE, the HS-SCCH_1 shall be transmitted continuously with constant power.
HS-SCCH_2	HS-SCCH_Ec/Ior	DTX'd	1. UE assumes STTD applied. 2. No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/Ior	DTX'd	1. As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/Ior	DTX'd	2. As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	1. STTD applied.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	1. STTD applied. 2. Balance of power I_{or} of the Node-B is assigned to OCNS. 3. Power divided equally between antennas.

Table E.5.3: Downlink physical channels for HSDPA receiver testing for Closed Loop Transmit Diversity (Mode-1) performance.

Physical Channel	Parameter	Value	Note
P-CPICH (antenna 1)	P-CPICH_Ec1/Ior	-13dB	1. Total P-CPICH_Ec/Ior = -10dB
P-CPICH (antenna 2)	P-CPICH_Ec2/Ior	-13dB	
P-CCPCH (antenna 1)	P-CCPCH_Ec1/Ior	-15dB	1. STTD applied. 2. Total P-CCPCH Ec/Ior is –12dB.
P-CCPCH (antenna 2)	P-CCPCH_Ec2/Ior	-15dB	
SCH (antenna 1/2)	SCH_Ec/Ior	-12dB	1. TSTD applied. 2. Power divided equally between primary and secondary SCH.
PICH (antenna 1)	PICH_Ec1/Ior	-18dB	1. STTD applied. 2. Total PICH Ec/Ior is –15dB.
PICH (antenna 2)	PICH_Ec2/Ior	-18dB	
DPCH	DPCH_Ec/Ior	Test-specific	1. CL1 applied.
HS-SCCH_1	HS-SCCH_Ec/Ior	Test-specific	1. [TBD] applied. 2. Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval). During TTIs, in which the HS-SCCH_1 is not allocated to the UE, the HS-SCCH_1 shall be transmitted continuously with constant power.
HS-SCCH_2	HS-SCCH_Ec/Ior	DTX'd	1. UE assumes [TBD] applied. 2. No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/Ior	DTX'd	1. As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/Ior	DTX'd	2. As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	1. CL1 applied.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	1. STTD applied. 2. Balance of power I_{or} of the Node-B is assigned to OCNS. 3. Power divided equally between antennas.

Table E.5.4: Downlink physical channels for HSDPA receiver testing for HS-SCCH detection performance

Parameter	Units	Value	Comment
CPICH E_c / I_{or}	~~D~~dB	-10	
CCPCH E_c / I_{or}	~~D~~dB	-12	Mean power level is shared with SCH.
SCH E_c / I_{or}	~~D~~dB	-12	Mean power level is shared with P-CCPCH – SCH includes P- and S-SCH, with power split between both. P-SCH code is S_dl,0 as per [14] S-SCH pattern is scrambling code group 0
PICH E_c / I_{or}	~~D~~dB	-15	
HS-DSCH-1 E_c / I_{or}	~~D~~dB	-10	HS-DSCH associated with HS-SCCH-1. The HS-DSCH shall be transmitted continuously with constant power.
HS-DSCH-2 E_c / I_{or}	~~D~~dB	DTX	HS-DSCH associated with HS-SCCH-2
HS-DSCH-3 E_c / I_{or}	~~D~~dB	DTX	HS-DSCH associated with HS-SCCH-3
HS-DSCH-4 E_c / I_{or}	~~D~~dB	DTX	HS-DSCH associated with HS-SCCH-4
DPCH E_c / I_{or}	~~D~~dB	-8	12.2 kbps DL reference measurement channel as defined in Annex C.3.1
HS-SCCH-1 E_c / I_{or}	~~D~~dB	Test Specific	All HS-SCCH's allocated equal E_c / I_{or}. Specifies E_c / I_{or} when TTI is active. During TTIs, in which the HS-SCCH's are not allocated to the UE, the HS-SCCH's shall be transmitted continuously with constant power.
HS-SCCH-2 E_c / I_{or}	~~D~~dB		
HS-SCCH-3 E_c / I_{or}	~~D~~dB		
HS-SCCH-4 E_c / I_{or}	~~D~~dB		
OCNS E_c / I_{or}	~~D~~dB	Remaining power at Node-B (including HS-SCCH power allocation when HS-SCCH's inactive).	OCNS interference consists of 6 dedicated data channels as specified in table E.5.5

E.5.2 OCNS Definition

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

Table E.5.5: OCNS definition for HSDPA receiver testing

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

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

E.5.3 Downlink Physical Channels for measurement including test tolerances

Table E.5.6 to E.5.8 are applicable for tests in subclause 9.2.1, 9.2.2, and 9.2.3. 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.

Table E.5.6: Level set 1 for HSDPA measurements including test tolerances

Parameter During Measurement	Unit	Value
P-CPICH_Ec/Ior	dB	-9.9
P-CCPCH and SCH_Ec/Ior	dB	-11.9
PICH _Ec/Ior	dB	-14.9
HS-PDSCH	dB	-5,9
HS-SCCH_1	dB	-7.4
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-13.3
Measurement conditions	PA3 HS-PDSCH = -6dB, Ior/Ioc = 0dB	

Table E.5.7: Level set 2 for HSDPA measurements including test tolerances

Parameter During Measurement	Unit	Value
P-CPICH_Ec/Ior	dB	-9.9
P-CCPCH and SCH_Ec/Ior	dB	-11.9
PICH _Ec/Ior	dB	-14.9
HS-PDSCH	dB	-5.9
HS-SCCH_1	dB	-8.4
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-10.75
Measurement conditions	HS-PDSCH = -6dB, Ior/Ioc = 10dB and 0dB	

Table E.5.8: Level set 3 for HSDPA measurements including test tolerances

Parameter During Measurement	Unit	Value
P-CPICH_Ec/Ior	dB	-9.9
P-CCPCH and SCH_Ec/Ior	dB	-11.9
PICH _Ec/Ior	dB	-14.9
HS-PDSCH	dB	-2,9
HS-SCCH_1	dB	-8.4
DPCH_Ec/Ior	dB	-8.4
OCNS_Ec/Ior	dB	off
Measurement conditions	HS-PDSCH = -3dB, Ior/Ioc = 10dB and 0 dB	

Table E.5.9: Application of level sets for measurement

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	Level-set 1	Level-set 2
		-3	Not tested	Level-set 3
2	PB3	-6	Level-set 2	Level-set 2
		-3	Level-set 3	Level-set 3
3	VA30	-6	Level-set 2	Level-set 2
		-3	Level-set 3	Level-set 3
4	VA120	-6	Level-set 2	Level-set 2
		-3	Level-set 3	Level-set 3

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CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**520**	⌘ **rev**	**-**	⌘	Current version:	**5.6.0**	⌘

*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: Changes to RRM test cases for introduction of UMTS 850 Band			
Source:	⌘	Motorola			
Work item code:	⌘	UMTS 850	***Date:***	⌘	31/01/2005
Category:	⌘	**B**	***Release:***	⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.			*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Introducing UMTS 850 band to RRM test cases
Summary of change:	⌘	Operating Band V is added to the appropriate RRM test cases.
Consequences if not approved:	⌘	The feature UMTS-850 MHz band V would not be tested.

Clauses affected:	⌘	8.7.1, 8.7.2, 8.7.3, 8.7.4, 8.7.5, 8.7.6				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR is to be treated as release independent.				

8.7 Measurements Performance Requirements

Unless explicitly stated:

- Reported measurements shall be within defined range in 90 % of the cases.
- Measurement channel is 12.2 kbps as defined in Annex C, sub-clause C.3.1. This measurement channel is used both in active cell and cells to be measured.
- Physical channels used as defined in Annex E.
- Cell 1 is the active cell.
- Single task reporting.
- Power control is active.

8.7.1 CPICH RSCP

8.7.1.1 Intra frequency measurements accuracy

8.7.1.1.1 Absolute accuracy requirement

8.7.1.1.1.1 Definition and applicability

The absolute accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the actual CPICH RSCP power from same cell.

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

8.7.1.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

$CPICH\_RSCP1|_{dBm} \geq -114$ dBm for Bands I and VI,

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

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

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

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 Io [dBm/3.84 MHz]	Band II and V Io [dBm/3.84 MHz]	Band III Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	± 6	± 9	-94...-70	-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

<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>-15</td><td>-</td><td>-15</td><td>-</td><td>-15</td><td>-</td></tr>
<tr><td colspan="2">OCNS_Ec/Ior</td><td>dB</td><td>-1.11</td><td>-0.94</td><td>-1.11</td><td>-0.94</td><td>-1.11</td><td>-0.94</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">-75.54</td><td colspan="2" rowspan="3">-59.98</td><td colspan="2">-97.47</td></tr>
<tr><td>Band II, V</td><td colspan="2">-95.47</td></tr>
<tr><td>Band III</td><td colspan="2">-94.47</td></tr>
<tr><td colspan="2">Îor/Ioc</td><td>dB</td><td>4</td><td>0</td><td>9</td><td>0</td><td>0</td><td>-6.53</td></tr>
<tr><td rowspan="3">CPICH RSCP, Note 1</td><td>Band I, VI</td><td rowspan="3">dBm</td><td rowspan="3">-81.5</td><td rowspan="3">-85.5</td><td rowspan="3">-60.98</td><td rowspan="3">-69.88</td><td>-107.47</td><td>-114.0</td></tr>
<tr><td>Band II, V</td><td>-105.47</td><td>-112.0</td></tr>
<tr><td>Band III</td><td>-104.47</td><td>-111.0</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">-69</td><td colspan="2" rowspan="3">-50</td><td colspan="2">-94</td></tr>
<tr><td>Band II, V</td><td colspan="2">-92</td></tr>
<tr><td>Band III</td><td colspan="2">-91</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: CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.</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>

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.

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

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

Table 8.7.1.1.2.1: 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$|_{dBm}$ ≥ -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 8.7.1.2.1.1: 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
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	 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

-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

First MEASUREMENT CONTROL message for Intra frequency measurement (Step 3):

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Intra-frequency measurement - Intra-frequency measurement objects list -Intra-frequency cell info list -Intra-frequency measurement quantity -Filter coefficient -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity -Reporting quantities for active set cells -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for monitored set cells -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for detected set cells -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -CHOICE *report criteria* -Amount of reporting -Reporting interval	 1 Modify Acknowledged mode RLC Periodical reporting Not Present Intra-frequency measurement Not Present 0 FDD CPICH RSCP TRUE TRUE FDD TRUE 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.

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

Table 8.7.2.1.1.1: 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 ~~III~~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:

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

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

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

Table 8.7.2.1.2.1: 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.

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

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

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

Table 8.7.2.2.2.1: 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
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	 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

-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~~III~~ respectively) shall be added into the required accuracy defined in clause 8.7.2.2.2.2 as shown in table 8.7.2.2.2.3.

Table 8.7.2.2.2.3: CPICH_Ec/Io Inter frequency relative accuracy, test requirements

Parameter	Unit	Normal condition	Extreme condition	Io [dBm/3.84 MHz]		
				Band I 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	-1.12	-0.95	-2.55	-0.94	-2.55	-0.94
Ioc — Band I, VI	dBm/ 3.84 MHz	-53.5	-53.5	-86.27	-86.27	-93.46	-93.46
Ioc — Band II, V				-84.27	-84.27	-91.46	-91.46
Ioc — 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
Io, Note 1 — Band II, V				-82.9	-82.9	-91	-91
Io, Note 1 — 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
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	 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

-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

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

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cell removal -New inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode -Measurement quantity for frequency quality estimate -Inter-frequency reporting quantity -UTRA Carrier RSSI -Frequency quality estimate -Non frequency related cell reporting quantities -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -Inter-frequency set update -CHOICE report criteria -Amount of reporting -Reporting interval	 2 Setup Acknowledged mode RLC Periodical reporting Not Present Inter-frequency measurement Not Present Cell 2 information is included. Not Present Inter-frequency reporting criteria 0 FDD CPICH RSCP TRUE TRUE TRUE TRUE FDD TRUE TRUE FALSE 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~~III~~ respectively) shall be added into the required accuracy defined in subclause 8.7.3.1.2 as shown in table 8.7.3.1.3.

Table 8.7.3.1.3: UTRA Carrier RSSI absolute accuracy

Parameter	**Unit**	**Accuracy [dB]**					
		Normal condition			**Extreme condition**		
		Test 1	**Test 2**	**Test 3**	**Test 1**	**Test 2**	**Test 3**
UTRA Carrier RSSI	dBm	± 7.15	± 5.1	-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.

8.7.3.2 Relative measurement accuracy requirement

8.7.3.2.1 Definition and applicability

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

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

8.7.3.2.2 Minimum Requirements

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

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

Table 8.7.3.2.1: UTRA Carrier RSSI 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]
UTRA Carrier RSSI	dBm	± 7	± 11	-94...-70	-92…-70	-91…-70

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

8.7.3.2.3 Test purpose

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

8.7.3.2.4 Method of test

8.7.3.2.4.1 Initial conditions

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

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

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

8.7.3.2.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 3 are set up according to table 8.7.3.2.3.
2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
4) SS shall transmit MEASUREMENT CONTROL message.
5) UE shall transmit periodically MEASUREMENT REPORT messages.
6) SS shall check UTRA carrier RSSI value of Channel 1 and Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power value measured from Channel 1 is compared to UTRA carrier RSSI power value measured from Channel 2 for each MEASUREMENT REPORT message.
7) The result of step 6) is compared to actual power level difference of UTRA Carrier RSSI of Channel 1 and Channel 2.
8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

PHYSICAL CHANNEL RECONFIGURATION message and MEASUREMENT CONTROL message for Inter frequency measurement in clause 8.7.3.1.4.2 is used.

MEASUREMENT REPORT message for inter – frequency test cases

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

8.7.3.2.5 Test requirements

The UTRA Carrier RSSI relative measurement accuracy shall meet the requirements in clause 8.7.3.2.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm, -97 dBm, -96 dBm for Frequency Band I, II, III, V and VI~~III~~ respectively) shall be added into the required accuracy defined in clause 8.7.3.2.2 as shown in table 8.7.3.2.2.

Table 8.7.3.2.2: UTRA Carrier RSSI relative accuracy

Parameter	Unit	Accuracy [dB]	
		Normal condition	Extreme condition
		Test 3	Test 3
UTRA Carrier RSSI	dBm	± 7.4	± 11.4

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

Table 8.7.3.2.3: UTRA Carrier RSSI Inter frequency test parameters

Parameter		Unit	Test 3	
			Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2
CPICH_Ec/Ior		dB	-10	
PCCPCH_Ec/Ior		dB	-12	
SCH_Ec/Ior		dB	-12	
PICH_Ec/Ior		dB	-15	
DPCH_Ec/Ior		dB	-6	-
OCNS_Ec/Ior		dB	-2.56	-0.94
Ioc	Band I, VI	dBm/ 3.84 MHz	-93.46	-93.46
	Band II, V		-91.46	-91.46
	Band III		-90.46	-90.46
Îor/Ioc		dB	-9.24	-9.24
CPICH Ec/Io, Note 1		dBm	-19.7	-19.7
Io, Note 1	Band I, VI	dBm/3.84 MHz	-93	-93
	Band II, V		-91	-91
	Band III		-90	-90
Propagation condition		-	AWGN	
NOTE 1: CPICH Ec/Io and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.				

The reported values for the UTRA Carrier RSSI relative measurement shall meet the requirements in table 8.7.3.2.4.

Table 8.7.3.2.4: UTRA Carrier RSSI relative accuracy requirements for the reported values

	Test 3
Normal Conditions	
Lowest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_(x – 8)
Highest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_(x + 8)
Extreme Conditions	
Lowest reported value (Cell 2)	UTRA_carrier_RSSI_LEV__(x – 12)
Highest reported value (Cell 2)	UTRA_carrier_RSSI_LEV__(x + 12)
UTRA_carrier_RSSI_LEV_x is the reported value of cell 1	

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

8.7.3A GSM Carrier RSSI

8.7.3A.1 Definition and applicability

The GSM carrier RSSI measurement is used for handover between UTRAN and GSM.

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

8.7.3A.2 Minimum Requirements

The UE shall meet the measurement accuracy requirements stated for RXLEV below, when the given measurement time allows the UE to take at least 3 GSM carrier RSSI samples per GSM carrier in the monitored set during the measurement period.

The absolute accuracy shall be as follows:

The R.M.S received signal level at the receiver input shall be measured by the UE and the BSS over the full range of -110 dBm to -48 dBm with an absolute accuracy of ±4 dB from -110 dBm to -70 dBm under normal conditions and ±6 dB over the full range under both normal and extreme conditions. The R.M.S received signal level at the receiver input shall be measured by the UE above -48 dBm up to -38 dBm with an absolute accuracy of ± 9 dB under both normal and extreme conditions.

If the received signal level falls below the reference sensitivity level for the type of UE or BSS, then the measured level shall be within the range allowing for the absolute accuracy specified above. In case the upper limit of this range is below the reference sensitivity level for the type of UE or BSS, then the upper limit shall be considered as equal to the reference sensitivity level.

The relative accuracy shall be as follows:

If signals of level x1 and x2 dBm are received (where x1 ≤ x2) and levels y1 and y2 dBm respectively are measured, if x2 - x1 < 20 dB and x1 is not below the reference sensitivity level, then y1 and y2 shall be such that:

> (x2 - x1) - a ≤ y2 - y1 ≤ (x2 - x1 + b) if the measurements are on the same or on different RF channel within the same frequency band;
>
> and
>
> (x2 - x1) - c ≤ y2 - y1 ≤(x2 - x1 + d) if the measurements are on different frequency bands:
>
> a, b, c and d are in dB and depend on the value of x1 as follows:

	a	b	c	d
x1 ≥ s+14, x2< -48 dBm	2	2	4	4
s+14 > x1 ≥ s+1	3	2	5	4
s+1 > x1	4	2	6	4

For single band MS or BTS and measurements between ARFCN in the same band for a multiband

MS or BTS;

s = reference sensitivity level as specified in 3GPP TS 05.05 [28] for 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 normative reference for this requirement is:

For R99: TS 25.133 [2] clause 8.1.2.5 and 9.1.4 and TS 05.08 [20] clause 8.1.2.

For Rel-4 and later releases: TS 25.133 [2] clause 8.1.2.5 and 9.1.4 and TS 45.008 [30] clause 8.1.2.

8.7.3A.3 Test purpose

The purpose of this test is to verify that the GSM Carrier RSSI measurement accuracy in CELL_DCH state, for UE that needs compressed mode to perform GSM measurements, is within the specified limits. This measurement is for UTRAN to GSM handover evaluation.

8.7.3A.4 Method of test

8.7.3A.4.1 Initial conditions

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

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

In the test in Cell_DCH state compressed mode with purpose "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

1) The SS is set to produce the BCCHs of 6 surrounding cells at 28 dBµVemf( ). The fading profile for the BCCHs of the surrounding cells will be set to static, see 51.010-1 [25]. The limits of the GSM test parameters are defined in TS 05.08 [20] for R99 and in TS 45.008 [30] for Rel-4 and latere releases.

2) After 30 seconds a call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Cell 1 is set up according to table 8.7.3A.1 and 8.7.3A.2.

8.7.3A.4.2 Procedure

1) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

2) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

3) SS shall transmit MEASUREMENT CONTROL message.

4) UE shall transmit periodically MEASUREMENT REPORT messages.

5) SS shall check GSM carrier RSSI value of the GSM cells in MEASUREMENT REPORT messages. The measurement is done in 105 steps. The initial signal levels of the BCCHs of the surrounding cells are adjusted according to table 8.7.3A.3. At each step the SS keeps the signal levels stable for one reporting period, except at steps 21 + m × 21 where the level is held stable for 1,75 reporting periods. The GSM CARRIER RSSI value for the period in which the change occurs (reported in the following period) is discarded. The SS records the GSM CARRIER RSSI values reported for the surrounding cell BCCHs in steps 1 + m × 21 and 21 + m × 21. The GSM CARRIER RSSI values for BCCH 1 are recorded by the SS for all 105 steps.

NOTE: This extension at steps 21 + m × 21 is to allow an extra quarter reporting period for the UE to stabilize for steps 1 + m × 21.

Table 8.7.3A.3: Signal levels at receiver input in dBμVemf( )

	ARFCN	BCCH1	BCCH2	BCCH3	BCCH4	BCCH5	BCCH6
Step	GSM 450	276	293	264	269	281	288
	GSM 480	323	340	311	316	328	335
	GSM 900:	62	124	20	40	80	100
	DCS 1 800	700	885	585	660	790	835
	PCS 1 900	700	805	585	660	790	550
	450/900	124	276	293	269	288	1
	480/900	124	323	340	316	335	1
	450/1 800	885	276	293	269	288	512
	480/1 800	885	323	340	316	335	512
	900/1 800	885	62	124	40	100	512
	450/900/1 800	124	276	885	293	1	512
	480/900/1 800	124	323	885	340	1	512
	GSM 850	189	251	150	170	210	230
	GSM 750	475	511	440	455	485	500
	750/850	251	475	511	455	485	128
1 + m × 21		64,5 - m × 10	64,5 - m × 10	64,5 - m × 10	64,5 - m × 10	64,5 - m × 10	64,5 - m × 10
2 + m × 21		63,5 - m × 10	54,5 - m × 10	54,5 - m × 10	54,5 - m × 10	54,5 - m × 10	54,5 - m × 10
3 + m × 21		62,5 - m × 10	44,5 - m × 10	44,5 - m × 10	44,5 - m × 10	44,5 - m × 10	44,5 - m × 10
.		.	.	.	.	44,5 - m × 10	44,5 - m × 10
17 + m × 21		.	.	.	.	44,5 - m × 10	44,5 - m × 10
18 + m × 21		.	.	.	.	44,5 - m × 10	44,5 - m × 10
.		.	.	.	.	44,5 - m × 10	44,5 - m × 10
21 + m × 21		44,5 - m × 10	44,5 - m × 10	44,5 - m × 10	44,5 - m × 10	44,5 - m × 10	44,5 - m × 10
m = 0, 1, 2, 3, 4.							

Specific Message Contents

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

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 1):

Information Element	Value/Remark
Message Type	
UE Information Elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number -Integrity protection mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. Not Present Not Present Not Present Not Present Not Present CELL_DCH Not Present
CN Information Elements -CN Information info	 Not Present
UTRAN mobility information elements -URA identity	 Not Present
RB information elements -Downlink counter synchronisation info	 Not Present
PhyCH information elements -Frequency info	 Not Present
Uplink radio resources -Maximum allowed UL TX power - CHOICE *channel requirement*	 Not Present Not Present
Downlink radio resources -CHOICE mode -Downlink PDSCH information -Downlink information common for all radio links -Downlink DPCH info common for all RL -CHOICE mode -DPCH compressed mode info -Transmission gap pattern sequence -TGPSI -TGPS Status Flag -TGCFN -Transmission gap pattern sequence configuration parameters -TGMP -TGPRC -TGSN -TGL1 -TGL2 -TGD -TGPL1 -TGPL2 -RPP -ITP -CHOICE UL/DL mode -Downlink compressed mode method -Uplink compressed mode method -Downlink frame type -DeltaSIR1 -DeltaSIRafter1	 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

-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT CONTROL message for Inter frequency measurement (step 3):

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number	 0 SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-RAT measurement -Inter-RAT measurement objects list -CHOICE *Inter-RAT cell removal* -New inter-RAT cells -Inter-RAT cell id -CHOICE Radio Access Technology -GSM -Cell individual offset -Cell selection and re-selection info -BSIC -Base transceiver Station Identity Code (BSIC) -Band indicator -BCCH ARFCN -Cell for measurement -Inter-RAT measurement quantity -Measurement quantity for UTRAN quality estimate -CHOICE system -GSM -Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity -UTRAN estimated quality -CHOICE system -GSM -Observed time difference to GSM cell Reporting indicator -GSM carrier RSSI reporting indicator -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -CHOICE report criteria -Amount of reporting -Reporting interval	 2 Setup Acknowledged mode RLC Periodical reporting Not Present Inter-RAT measurement Not Present 9 GSM 0 Not Present Reference to TS 34.108 table 6.1.10 for Cell 9 According to PICS/PIXIT 1 Not Present Not Present GSM GSM Carrier RSSI 0 not required FALSE GSM FALSE TRUE Report cells within active set or within virtual active set or of the other RAT 6 Periodical reporting criteria Infinity 500 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for inter – RAT test cases

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

8.7.3A.5 Test requirements

8.7.3A.5.1 Relative accuracy of measurements on different ARFCN

For normal and each of the 4 extreme conditions tested the following applies:

a) For each of the steps 1, 21, 22, 42, 43 and 64, of the 6 reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 4 if the measurements are on the same or on different RF channel within the same frequency band and no more than 8 (12 for extreme temperature conditions) if the measurements are on different frequency bands.

b) For each of the steps 63 and 85, of the 6 reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 5 for small UE, DCS 1 800 and PCS 1 900 (Class 1 and 2) UE or 4 for other UE if the measurements are on the same or on different RF channel within the same frequency band and no more than 9 for small UE, DCS 1 800 and PCS 1 900 (Class 1 and 2) UE or 8 for other UE and other PCS 1 900 UE (13 and 12 for extreme temperature conditions) if the measurements are on different frequency bands.

c) For step 84, of the 6 reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 5 if the measurements are on the same or on different RF channel within the same frequency band and no more than 9 (13 for extreme temperature conditions) if the measurements are on different frequency bands.

d) For step 105, of the reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 6 if the measurements are on the same or on different RF channel within the same frequency band and no more than 10 (14 for extreme temperature conditions) if the measurements are on different frequency bands.

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3A.2.

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

NOTE: It is not mandatory for the MS to report any of the BCCHs in step 105.

8.7.3A.5.2 Relative accuracy at a single frequency (BCCH1)

For normal and each of the 4 extreme conditions tested the following applies:

For: $n <= 21$ and $RXLEV_1 = 63$

$RXLEV_n - (63 - n + r)$ shall be between:

-2 and +2

NOTE 1: This formula allows for an MS with an absolute accuracy worse than +0,5 dB and therefore reporting an RXLEV of 63 for more than one step. The formula checks the relative accuracy from the lowest input level for which the MS last reports RXLEV of 63.

Otherwise:

$RXLEV_{(m*21+1)}$ - $RXLEV_{(m*21+n)}$ - n + 1 shall be between:

-2 and +2

for steps 2 to 62 and 65 to 71 for DCS 1 800 class 1/2 MS; or steps 2 to 62 and 65 to 73 for DCS 1 800 class 3, PCS 1 900 (Class 1&2) and Small GSM MS; or 2 to 75 for other MS and other PCS 1 900 MS.

-3 and +2

for steps 63 and 72 to 96 for DCS 1 800 class 1/2 MS; or steps 63 and 74 to 98 for DCS 1 800 class 3, PCS 1 900 (Class 1 and 2) and Small GSM MS; or

76 to 100 for other MS and other PCS 1 900 MS.

-4 and +2

for steps 97 to 105 for DCS 1 800 class 1/2 MS; or steps 99 to 105 for DCS 1 800 class 3, PCS 1 900 (Class 1 and 2) and Small GSM MS; or 101 to 105 for other MS and other PCS 1 900 MS.

where: $1 < n \leq 21$ and $0 \leq m \leq 4$ as identified in table 8.7.3A.3, and r is the number of the last step where RXLEV of 63 was reported.

NOTE 2: It is not mandatory for the MS to report BCCH1 for steps greater than 99 for GSM 400, GSM 700, GSM 850 or GSM 900 Small MS or 101 for other GSM and other PCS 1 900 MS or 97 for a DCS 1 800 Class 1 or Class 2 MS and 99 for DCS 1 800 Class 3 and PCS 1 900 (Class 1 and 2) MS. If the MS reports a level and the upper limit for this step in the above formula implies a level below the reference sensitivity level for the type of MS, then the upper limit shall be considered as equal to a value corresponding to the reference sensitivity level.

8.7.3A.5.3 Absolute accuracy

For each BCCH reported, $|RXLEV_{MS} + m \times 10 - 62|$ shall be no more than:

4 for steps 64 and 85 under normal conditions.

6 for steps 64 and 85 under extreme conditions.

6 for steps 1, 22 and 43 under normal and extreme conditions.

where: $0 \leq m \leq 4$ as identified in table 8.7.3A.3.

8.7.3B Transport channel BLER

Void.

8.7.3C UE transmitted power

8.7.3C.1 Definition and applicability

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

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

8.7.3C.2 Minimum requirements

The measurement period in CELL_DCH state is 1 slot.

Table 8.7.3C.2.1 UE transmitted power absolute accuracy

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

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

NOTE 2: UE transmitted power is the reported value.

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

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

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

8.7.3C.3 Test purpose

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

8.7.3C.4 Method of test

8.7.3C.4.1 Initial conditions

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

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

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

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

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

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

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

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

8.7.3C.4.2 Procedure

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

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

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

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

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

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

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

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

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

Specific Message Contents

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

MEASUREMENT CONTROL message:

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

MEASUREMENT REPORT message:

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

PHYSICAL CHANNEL RECONFIGURATION message:

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

8.7.3C.5 Test requirements

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

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.

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

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.

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

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

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

Table 8.7.4.1.1 SFN-CFN observed time difference intra frequency accuracy

Parameter	Unit	Accuracy [chip]	Conditions		
			Io [dBm/3.84 MHz]		
			Band I 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

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	10.8		10.8		10.8	
Ioc	Band I, VI	dBm/ 3.84 MHz	-65.3		-85.7		-106.7	
	Band II, V						-104.7	
	Band III						-103.7	
Io, Note 1	Band I, VI	dBm/3.84 MHz	-51.3		-71.7		-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 8.7.4.1.5.

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.

8.7.4.2 Inter frequency measurement requirement

8.7.4.2.1 *Definition and applicability*

The inter frequency SFN-CFN observed time difference is defined as the SFN-CFN time difference from the active cell to a neighbour cell that is in a different frequency. This measurement is specified in clause 5.1.8 of TS 25.215 [22].

The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

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

8.7.4.2.2 *Minimum requirements*

The accuracy requirement in table 8.7.4.2.1 is valid under the following conditions:

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

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

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

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

Table 8.7.4.2.1 SFN-CFN observed time difference inter frequency accuracy

Parameter	Unit	Accuracy [chip]	Conditions		
			Io [dBm/3.84 MHz]		
			Band I 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
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	 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

-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.

8.7.5 SFN-SFN observed time difference

8.7.5.1 SFN-SFN observed time difference type 1

8.7.5.1.1 Definition and applicability

This measurement is specified in clause 5.1.9 of TS 25.215 [22]. The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE.

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

8.7.5.1.2 Minimum requirements

The accuracy requirement in table 8.7.5.1.1 is valid under the following conditions:

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

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

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

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

Table 8.7.5.1.1 SFN-SFN observed time difference type 1 measurement accuracy

Parameter	Unit	Accuracy [chip]	Conditions		
			Io [dBm/3.84 MHz]		
			Band I and VI	Band II and V	Band III
SFN-SFN observed time difference type1	chip	± 1	-94...-50	-92...-50	-91...-50

The normative reference for this requirement is TS 25.133 [2] clause 9.1.8.1.1 and A.9.1.5.1.2.

8.7.5.1.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-SFN observed time difference type 1 is within the limit specified in clause 8.7.5.1.2. This measurement is for identifying time difference between two cells.

8.7.5.1.4 Method of test

8.7.5.1.4.1 Initial conditions

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

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

During the test the timing difference between Cell 1 and 2 can be set to value from 0…9830399 chips.

1) Connect SS to the UE antenna connector as shown in figure A.11

In this case all cells are in the same frequency. Table 8.7.5.1.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table 8.7.5.1.2: SFN-SFN observed time difference type 1 Intra frequency test parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
S-CCPCH_Ec/Ior		dB	-12		-12		-12	
OCNS_Ec/Ior		dB	-1.29		-1.29		-1.29	
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-SFN observed time difference type 1 as specified in TS 25.215 [22]		chip	x Note 2					
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: *Ioc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor *Îor/Ioc*.								
NOTE2: For example, x= 491520 or 9830399. This is a calculated value using the 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.								

8.7.5.1.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.5. The RF parameters for Test 1 are set up according to table 8.7.5.1.4.

2) SS shall transmit MEASUREMENT CONTROL message.

3) UE shall transmit periodically MEASUREMENT REPORT messages.

4) SS shall check "SFN-SFN observed time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual SFN-SFN observed time difference type 1 value for each MEASUREMENT REPORT message.

5) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated. After

further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) 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 6.1.0b of 34.108 [3] and clause 9 of 34.108 [3], with the following exceptions:

Contents of System Information Block type 11 (FDD) (Step 1):

Information Element	Value/Remark
- Intra-frequency measurement system information	
- Intra-frequency reporting quantity for RACH Reporting	
- SFN-SFN observed time difference reporting indicator	type 1
- CHOICE mode	FDD
- Reporting quantity	CPICH RSCP
- Maximum number of reported cells on RACH	current cell + best neighbour

MEASUREMENT CONTROL message for Traffic Volume measurement (Step 2):

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	4
- 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 (10.3.7.68)*	Traffic Volume measurement
- Traffic volume measurement Object (10.3.7.70)	
- Traffic volume measurement objects	1
- Uplink transport channel type	RACHorCPCH
- UL Target Transport Channel ID	Not Present
- Traffic volume measurement quantity (10.3.7.71)	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity (10.3.7.74)	
- RLC Buffer Payload for each RB	FALSE
- Average of RLC Buffer Payload for each RB	FALSE
- Variance of RLC Buffer Payload for each RB	FALSE
- Measurement validity (10.3.7.51)	Not Present
- CHOICE *report criteria (10.3.7.53)*	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

MEASUREMENT REPORT message for SFN-SFN observed time difference type 1 test case (Step 3)

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	4
Measured Results	Checked that this IE is absent
Measured results on RACH	Checked that this IE is present
- Measurement result for current cell	Checked that this IE is present
- CHOICE mode	FDD
- CHOICE measurement quantity	Checked that this IE is present
- Measurement results for monitored cells	1
- SFN-SFN observed time difference	Checked that this IE is present
- CHOICE Type	Type 1
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

8.7.5.1.5 Test requirements

Table 8.7.5.1.3 SFN-SFN observed time difference type 1 measurement accuracy

Parameter	Unit	Accuracy [chip]	Conditions		
			Io [dBm/3.84 MHz]		
			Band I and VI	Band II and V	Band III
SFN-SFN observed time difference type1	chip	± 1.5	-94...-50	-92...-50	-91...-50

Table 8.7.5.1.4: SFN-SFN observed time difference type 1 Intra frequency test parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior		dB	-10		-10		-10	
PCCPCH_Ec/Ior		dB	-12		-12		-12	
SCH_Ec/Ior		dB	-12		-12		-12	
PICH_Ec/Ior		dB	-15		-15		-15	
S-CCPCH_Ec/Ior		dB	-12		-12		-12	
OCNS_Ec/Ior		dB	-1.29		-1.29		-1.29	
Îor/Ioc		dB	10.8		10.8		10.8	
Ioc	Band I, VI	dBm/ 3.84 MHz	-65.3 dB		-85.7		-106.7	
	Band II, V						-104.7	
	Band III						-103.7	
Io, Note 1	Band I, VI	dBm/3.84 MHz	-51.3		-71.7		-92.7	
	Band II, V						-90.7	
	Band III						-89.7	
SFN-SFN observed time difference type 1 as specified in TS 25.215 [22]		chip	x Note 2					
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: Io level has been calculated from other parameters for information purposes. It is not a settable parameter itself.								
NOTE2: For example, x= 491520 or 9830399. This is a calculated value using the parameters "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 reported values for SFN-SFN observed time difference type 1 accuracy shall meet the requirements in table 8.7.5.1.5.

Table 8.7.5.1.5: SFN-SFN observed time difference type 1 measurement accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Lowest reported value	T1_SFN-SFN_TIME_(X – 2)	T1_SFN-SFN_TIME_(X – 2)	T1_SFN-SFN_TIME_(X – 2)
Highest reported value	T1_SFN-SFN_TIME_(X + 2)	T1_SFN-SFN_TIME_(X + 2)	T1_SFN-SFN_TIME_(X + 2)
T1_SFN-SFN_TIME_(X) is the reporting value corresponding to SFN-SFN observed time difference type 1 measured by system simulator			

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

8.7.5.2 SFN-SFN observed time difference type 2

Void.

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
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-T WG1 Meeting #26
Bangalore, India, 31 Jan – 4 Feb 2005

Tdoc ⌘T1-050382

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CHANGE REQUEST

⌘	**34.121**	**CR**	**521**	⌘ **rev**	**-**	⌘	Current version:	**5.6.0**	⌘

*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 maximum input level for HS-PDSCH reception		
Source:	⌘	Agilent Technologies		
Work item code:	⌘	TEI6	***Date:*** ⌘	31/1/2005
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:	⌘	Corrections have been made to the core requirement I 25.101. There were a number of gaps in the requirements and a need to clarify the text
Summary of change:	⌘	1. Clarified the minimum requirements and made explicit reference to the 16QAM version of H-Set 1 in C.8.1.1 rather than C.8 2. Added reference to the downlink physical channel setup in table E.5.1. 3. Corrected in tables 6.3A.1 and 6.3A.4 the parameters and units for DPCH_Ec/Ior and HS-SCCH_1_Ec/Ior. 4. Modified Note in tables 6.3A.1 and 6.3A.4 that the HS-SCCH and HS-PDSCH (not HS-DSCH) are transmitted continuously with contant power. 5. Clarified in tables 6.3A.1 and 6.3A.4 the meaning of "sent to the UE" as being that the HS-SCCH shall use the identity of the UE under test only every third TTI. 6. Removed unnecessary asterix from table 6.3A.2 and unnecessary note on OCNS which is now covered by the new reference to table E.5.1 above.
Consequences if not approved:	⌘	The testing of the maximum input level for HS-PDSCH will not be well defined and may result in failing a good UE.

Clauses affected:	⌘	6.3A				
		Y	**N**			
Other specs affected:	⌘			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.

6.3A Maximum Input Level for HS-PDSCH Reception (16QAM)

6.3A.1 Definition and applicability

Maximum input level for HS-PDSCH reception is defined as the maximum power received at the UE antenna port, which shall not degrade ~~mean HS-PDSCH power received at the UE antenna port, which shall not degrade~~ the specified HSDPA throughput performance. The requirements and this test apply to all types of UTRA FDD UE that support HSDPA (16QAM).

6.3A.2 Minimum requirements

~~For the parameters specified in Table 6.3A.1, the requirements are specified in terms of a minimum information bit throughput R as shown in Table 6.3A.2 for the DL reference channel H-Set 1 specified in Annex C.8. with the addition of the parameters added in the end of Table 6.3A.1.~~ The requirements are specified in terms of a minimum information bit throughput R for the DL reference channel H-Set 1 (16QAM version) specified in Annex C.8.1.1 with the addition of the parameters in Table 6.3A.1 and the downlink physical channel setup according to table E.5.1.

~~The throughput shall meet or exceed the minimum level the for the parameters specified in table 6.3A.1.~~ Using this configuration the throughput shall meet or exceed the minimum requirements specified in table 6.3A.2.

The reference for this requirement is TS 25.101 [1] clause 7.4.2.

Table 6.3A.1 Minimum requirement parameters for 16QAM Maximum Input Level

Parameter	Unit	~~Test~~ Value
Phase reference		P-CPICH
$\hat{I}_{or}$	dBm/3.84 MHz	-25 *
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)
DPCH_Ec/Ior	~~DPCH_Ec/Ior~~dB	-13
HS-SCCH_1_Ec/Ior	~~HS-SCCH_Ec/Ior~~dB	-13
Redundancy and constellation version		6
Maximum number of HARQ transmissions		1
Note: The HS-SCCH and corresponding HS-PDSCH shall be transmitted continuously with constant power but the HS-SCCH shall only use the identity of the UE under test ~~only~~ every third TTI ~~shall be sent to the UE under test~~.		

Table 6.3A.2 Minimum throughput requirement

HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) *
-3	700

~~NOTE: The structure of OCNS signal is defined in clause E.5.2.~~

6.3A.3 Test purpose

To verify that the UE HSDPA throughput meets the minimum requirements specified in table 6.3A.2 for the DL reference channel H-Set 1 specified in Annex C.8.1.1 with the addition of the parameters specified in table 6.3A.4.

An inadequate maximum input level causes loss of coverage near the Node B.

6.3A.4 Method of test

6.3A.4.1 Initial conditions

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

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

RF parameters are given in tables 6.3A.4 and table E.5.1.

Table 6.3A.3 Contents of RADIO BEARER SETUP message: AM or UM

Information Element	Value/Remark
CHOICE channel requirement - Power Control Algorithm	Uplink DPCH info Algorithm2

6.3A.4.2 Procedure

Connect the SS to the UE antenna connector as shown in figure A.3.

1) The UE is switched on.

2) An RRC connection is set-up according to the generic HSDPA set-up procedure specified in TS 34.108 [3]. Additional radio bearer message definition is in table 6.3A.3

3) Set the power level of UE according to the table 6.3A.4 and send power control commands to the UE .The UE output power measured by Test System shall be kept at the specified power level with ±1dB tolerance.

4). Measure the HS~~DPA~~-PDSCH throughput~~-~~ *R* received ~~from~~ by the UE ~~at the SS,~~ by counting the number of NACK, ACK and statDTX on the UL HS-DPCCH (Throughput = blocksize*number of blocks acknowledged/time).

5) The UE is switched off.

6.3A.5 Test requirements

The measured throughput, as derived in step 4), shall meet or exceed 700Kbit/second. The minimum number of measurements required for a statistically significant result to this test are clarified in annex F.6.3, Table F.6.3.5.1.

Table 6.3A.4: Test requirement parameters for 16QAM Maximum Input Level

Parameter	Unit	Value
Phase reference		P-CPICH
$\hat{I}_{or}$	dBm/3.84 MHz	-25.7
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)
DPCH_ Ec/Ior	~~DPCH_Ec/Ior~~dB	-13
HS-SCCH_1_ Ec/Ior	~~HS-SCCH_Ec/Ior~~dB	-13
Redundancy and constellation version		6
Maximum number of HARQ transmissions		1
Note: The HS-SCCH and corresponding HS-DSCH shall be transmitted continuously with constant power but the HS-SCCH shall only use the identity of the UE under test ~~only~~ every third TTI ~~shall be sent to the UE under test~~.		

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

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Bangalore, India, 31 Jan – 4 Feb 2005

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CHANGE REQUEST

⌘	**34.121**	**CR**	**523**	⌘ **rev**	**-**	⌘	Current version:	**5.6.0**	⌘

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

Title:	⌘	Corrections to demodulation of HS-DSCH
Source:	⌘	Agilent Technologies, Nokia
Work item code:	⌘	TEI6
Date:	⌘	3/2/2005
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: ⌘ There are a number of gaps in the requirements and a need to clarify the text

Summary of change: ⌘

1. Added specific reference to table D.2.2.1A for propagations conditions
2. Removed unnecessary text in definition and applicability subclauses
3. Clarified the applicability for Release 5 and later in 9.2.1.1, 9.2.2.1 and 9.2.3.1
4. Added UE categories 7 and 8 to the UE mapping tables 9.2.1.1, 9.2.2.1 and 9.2.3.1. Note: The addition of the requirements and tests for enhanced H-Set 1,2,3 (UE receiver diversity) and H-Set 6 have not been added in this CR.
5. Clarified wording of minimum requirements as per changes to the core specifications.
6. Added note to table 9.2.1.3 and 8 other tables indicating that the HS-SCCH-1 and HS-PDSCH are transmitted continuously.
7. Clarified that the HS-SCCH-1 shall only use the identity of the UE under test for those TTI intended for the UE under test. (The UE identity used in the other TTI is not specified and will be a matter for the test implementation.) Corrected four occurrences of 16-QAM to be 16QAM to match the standard usage in the document
8. Aligned note text in tables 9.2.1.8, 9.2.1.9, 9.2.2.8, 9.2.2.9 with 25.101. Similar changes to test requirement tables 9.2.1.17, 9.2.1.18, 9.2.2.16,

		9.2.2.17, 9.2.3.16 and 9.2.3.17. 9. Added missing comma and space in 9.2.1.4.1 step three 10. Removed redundant text 4 from tables in subclause 9.2.2.
Consequences if not approved:	⌘	The testing of HS-DSCH demodulation will not be well defined and may result in failing a good UE.

Clauses affected:	⌘	9.2				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR incorporates the parts of the Nokia CR in T1-050083 applicable to subclause 9.2.				

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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.

9.2 Demodulation of HS-DSCH (Fixed Reference Channel)

9.2.1 Single Link Performance

9.2.1.1 Definition and applicability

The receiver single link performance of the High Speed Physical Downlink Shared Channel (HS-DSCH) in different multi-path fading environments are determined by the information bit throughput R.

The UE shall be tested only according to the data rates~~,~~ supported.~~ The data-rate corresponding requirements shall apply to the UE.~~

The requirements and this test apply to Release 5 and later releases for all types of UTRA for the 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.

9.2.1.2 Minimum requirements

Requirements for a particular UE belonging to certain HS-DSCH category are determined according to Table 9.2.1.1. During the Fixed Reference Channel (FRC) tests the behaviour of the Node-B emulator in response to the ACK/NACK signalling field of the HS-DPCCH is specified in Table 9.2.1.2.

Table 9.2.1.1: Mapping between HS-DSCH category and FRC

HS-DSCH category	Corresponding requirement
Category 1	H-Set 1
Category 2	H-Set 1
Category 3	H-Set 2
Category 4	H-Set 2
Category 5	H-Set 3
Category 6	H-Set 3
Category 7	H-Set 6
Category 8	H-Set 6
Category 11	H-Set 4
Category 12	H-Set 5

Table 9.2.1.2: Node-B Emulator Behaviour in response to ACK/NACK/DTX

HS-DPCCH ACK/NACK Field State	Node-B Emulator Behaviour
ACK	ACK: new transmission using 1st redundancy version (RV)
NACK	NACK: retransmission using the next RV (up to the maximum permitted number or RV's)
DTX	DTX: retransmission using the RV previously transmitted to the same H-ARQ process

~~For the parameters specified in Table 9.2.1.3, 9.2.1.5, 9.2.1.7 t~~The requirements are specified in terms of minimum information bit throuhput R ~~as shown in Table 9.2.1.4, 9.2.1.6,9.2.1.8, and 9.2.1.9 for QPSK and 16QAM and~~ for the DL reference channels 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 9.2.1.3, 9.2.1.5 and 9.2.1.7 plus the downlink physical channel setup according to table E.5.1.

Using this configuration the throughput shall meet or exceed the minimum requirements specified in tables 9.2.1.4, 9.2.1.6, 9.2.1.8 and 9.2.1.9 respectively.

Table 9.2.1.3: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference	dBm/3.84 MHz	P-CPICH			
I_{oc}		-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			
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 9.2.1.4: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10 dB
1	PA3	-6	65	309
		-3	N/A	423
2	PB3	-6	23	181
		-3	138	287
3	VA30	-6	22	190
		-3	142	295
4	VA120	-6	13	181
		-3	140	275
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)			

Table 9.2.1.5: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference	dBm/3.84 MHz	P-CPICH			
I_{oc}		-60			
Redundancy and constellation version coding sequence		{6,2,1,5}			
Maximum number of HARQ transmission		4			
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 9.2.1.6: Minimum requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	198
		-3	368
2	PB3	-6	34
		-3	219
3	VA30	-6	47
		-3	214
4	VA120	-6	28
		-3	167
* Notes:	1)The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)		

Table 9.2.1.7: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			
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 9.2.1.8: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 0 Db	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10 dB
1	PA3	-6	72	340
		-3	N/A	439
2	PB3	-6	24	186
		-3	142	299
3	VA30	-6	19	183
		-3	148	306
4	VA120	-6	11	170
		-3	144	284
* Note~~s:~~ ~~1)~~ The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.2.1.9: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10 dB
1	PA3	-6	98	464
		-3	N/A	635
2	PB3	-6	35	272
		-3	207	431
3	VA30	-6	33	285
		-3	213	443
4	VA120	-6	20	272
		-3	210	413
* Note~~s:~~ ~~1)~~ The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

The reference for this requirement is TS 25.101 [1] clauses 9.2.1.1, 9.2.1.2 and 9.2.1.3.

9.2.1.3 Test purpose

To verify the ability of the receiver to receive a predefined test signal, representing a multi-path fading channel with information bit throughput R not falling below a specified value. The test stresses the multicode reception and channel decoding with incremental redundancy.

9.2.1.4 Method of test

9.2.1.4.1 Initial conditions

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

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

1) Connect the SS (node B emulator) and fader and AWGN noise source to the UE antenna connector as shown in figure A.17.
2) Set up an HSDPA call according to TS 34.108 [3] clause 7.3.6.3.
3) Set the test parameters for tests 1-4 according to tables 9.2.1.2, 9.2.1.3, 9.2.1.5 (Category 1-6) or 9.2.1.7 (Category 11,12)and levels according to tables 9.2.1.12 to 9.2.1.15 (Category 1-6) or 9.2.1.16 to 9.2.1.18 (Category 11,12). The configuration of the downlink channels is defined in table E.5.1.
4) The information bit data shall be pseudo random and not repeated not before 10 different information bit payload blocks are processed. (e.g. Fixed reference Channel Definition H-set 1 (16 QAM): The information bit payload block is 4664 bits long. Hence the PRBSequence must be at least 4664 * 10 bits long.) Use a PRBS from ITU-R O.153 Ref [26]

5) The SS shall not time the transmission freely. It shall time the transmission strictly according to the reference measurement channels: i.e. Process number i is continued exactly after 6 TTIs.

6) Setup fading simulators as fading conditions , which are described in table D.2.2.1.A

9.2.1.4.2 Procedure

1) Start transmitting HSDPA Data.

2) For all relevant propagation conditions, for all relevant Ioc levels, for all relevant Ec/Ior, for all relevant Îor/Ioc, for all relevant H-sets in tables 9.2.1.12 to 9.2.1.18 count the number of NACK, ACK and statDTX on the UL HS-DPCCH during the test interval and decide pass or fail according to Annex F.6.3 tables F.6.3.5.2.1, F.6.3.5.2.2, F.6.3.5.2.3 and F.6.3.5.2.4.

9.2.1.5 Test Requirements

Tables 9.2.1.12 to 9.2.1.18 define the level settings including test tolerance for all relevant throughput tests. The pass / fail decision for throughput is done according to Annex F.6.3.

Table 9.2.1.12: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60 (no test tolerance applied)			

Table 9.2.1.13: Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0.3 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10.3 dB
1	PA3	-5.9	65	309
		-2.9	N/A	423
2	PB3	-5.9	23	181
		-2.9	138	287
3	VA30	-5.9	22	190
		-2.9	142	295
4	VA120	-5.9	13	181
		-2.9	140	275
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)			

Table 9.2.1.14: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60 (no test tolerance applied)			

Table 9.2.1.15: Test requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10.3 dB
1	PA3	-5.9	198
		-2.9	368
2	PB3	-5.9	34
		-2.9	219
3	VA30	-5.9	47
		-2.9	214
4	VA120	-5.9	28
		-2.9	167
* Notes:	1)The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)		

Table 9.2.1.16: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60 (no test tolerance applied)			

Table 9.2.1.17: Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0.3 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10.3 dB
1	PA3	-5.9	72	340
		-2.9	N/A	439
2	PB3	-5.9	24	186
		-2.9	142	299
3	VA30	-5.9	19	183
		-2.9	148	306
4	VA120	-5.9	11	170
		-2.9	144	284
* Note~~s:~~ ~~1)~~ The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.2.1.18: Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0.3 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10.3 dB
1	PA3	-5.9	98	464
		-2.9	N/A	635
2	PB3	-5.9	35	272
		-2.9	207	431
3	VA30	-5.9	33	285
		-2.9	213	443
4	VA120	-5.9	20	272
		-2.9	210	413
* Note~~s:~~ ~~1)~~ The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

9.2.2 Open Loop Diversity Performance

9.2.2.1 Definition and applicability

The receiver single open loop transmit diversity performance of the High Speed Physical Downlink Shared Channel (HS-DSCH) in multi-path fading environments are determined by the information bit throughput R.

The UE shall be tested only according to the data rates~~,~~ supported. ~~The data-rate corresponding requirements shall apply to the UE.~~

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.

9.2.2.2 Minimum requirements

Requirements for a particular UE belonging to certain HS-DSCH category are determined according to Table 9.2.2.1. During the Fixed Reference Channel (FRC) tests the behaviour of the Node-B emulator in response to the ACK/NACK signalling field of the HS-DPCCH is specified in Table 9.2.2.2.

Table 9.2.2.1: Mapping between HS-DSCH category and FRC

HS-DSCH category	Corresponding requirement
Category 1	H-Set 1
Category 2	H-Set 1
Category 3	H-Set 2
Category 4	H-Set 2
Category 5	H-Set 3
Category 6	H-Set 3
Category 7	H-Set 6
Category 8	H-Set 6
Category 11	H-Set 4
Category 12	H-Set 5

Table 9.2.2.2: Node-B Emulator Behaviour in response to ACK/NACK/DTX

HS-DPCCH ACK/NACK Field State	Node-B Emulator Behaviour
ACK	ACK: new transmission using 1st redundancy version (RV)
NACK	NACK: retransmission using the next RV (up to the maximum permitted number or RV's)
DTX	DTX: retransmission using the RV previously transmitted to the same H-ARQ process

~~For the parameters specified in Tables 9.2.2.3, 9.2.2.5, 9.2.2.7 t~~The requirements are specified in terms of minimum information bit throughput R ~~as shown in Table 9.2.2.4, 9.2.2.6,9.2.2.8, and 9.2.2.9 for QPSK and 16QAM and~~ for the DL reference channels H-set 1/2/3/4/5 specified in Annex C.8.11, 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 9.2.2.3, 9.2.2.5 and 9.2.2.7 plus the downlink physical channel setup according to table E.5.2.

Using this configuration the throughput shall meet or exceed the minimum requirements specified in tables 9.2.2.4, 9.2.2.6, 9.2.2.8 and 9.2.2.9 respectively.

Table 9.2.2.3: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	~~Test 4~~
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			
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 9.2.2.4: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	77	375
		-3	180	475
2	PB3	-6	20	183
		-3	154	274
3	VA30	-6	15	187
		-3	162	284
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)			

Table 9.2.2.5: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	~~Test 4~~
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{6,2,1,5}			
Maximum number of HARQ transmission		4			
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 9.2.2.6: Minimum requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	295
		-3	463
2	PB3	-6	24
		-3	243
3	VA30	-6	35
		-3	251
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)		

Table 9.2.2.7: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3	~~Test 4~~
Phase reference		P-CPICH			
I_{oc}	DBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			
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 9.2.2.8: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10 dB
1	PA3	-6	70	369
		-3	171	471
2	PB3	-6	14	180
		-3	150	276
3	VA30	-6	11	184
		-3	156	285
* Note~~s:~~ ~~1)~~ The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.2.2.9: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10 dB
1	PA3	-6	116	563
		-3	270	713
2	PB3	-6	30	275
		-3	231	411
3	VA30	-6	23	281
		-3	243	426
* Note~~s:~~ ~~1)~~ The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

The reference for this requirement is TS 25.101 [1] clauses 9.2.2.1, 9.2.2.2 and 9.2.2.3.

9.2.2.3 Test purpose

To verify the ability of the receiver to receive a predefined test signal, representing a multi-path fading channel with information bit throughput R not exceeding a specified value. The test stresses the multi-code reception and channel decoding with incremental redundancy.

9.2.2.4 Method of test

9.2.2.4.1 Initial conditions

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

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

1. Connect the SS (Note: This is the Node B Emulator) and fader and AWGN noise source to the UE antenna connector as shown in figure A.19.

2. Set the test parameters for test as specified in table's 9.2.2.11, 9.2.2.13 and 9.2.2.15 and levels as specified in tables 9.2.2.12, 9.2.2.14, 9.2.2.16 and 9.2.2.17. Setup fading simulators as fading condition, which are described in table D.2.2.1A. The configuration of the downlink channels is defined in table E.5.2.

Table 9.2.2.10: Specific Message Contents for open-loop transmit diversity mode

SYSTEM INFORMATION BLOCK TYPE5

Information Element	Value/remark
PRACH system information list - AICH info - STTD Indicator	 TRUE
Secondary CCPCH system information - PICH info - STTD Indicator - Secondary CCPCH info - STTD Indicator	 TRUE TRUE
Primary CCPCH info - CHOICE mode - TX Diversity indicator	 FDD TRUE

RRC CONNECTION SETUP

Information Element	Value/remark
Downlink information common for all radio links - CHOICE mode - TX Diversity Mode	 FDD STTD
Downlink DPCH info for each RL - CHOICE mode - Downlink DPCH info for each RL - Closed loop timing adjustment mode	 FDD 1

RADIO BEARER SETUP

Information Element	Value/remark
Downlink information common for all radio links - CHOICE mode - TX Diversity Mode	 FDD STTD
Downlink DPCH info for each RL - CHOICE mode - Downlink DPCH info for each RL - Closed loop timing adjustment mode	 FDD 1

9.2.2.4.2 Procedure

1. Set up a HSDPA connection according to the generic HSDPA set-up procedure specified in TS 34.108 [3].

2. Start transmitting HSDPA Data.

3. The information bit data shall be pseudo random and not repeated before 10 different information bit payload blocks are processed. (e.g. Fixed reference Channel Definition H-set 1 (16 QAM): The information bit payload block is 4664 bits long. Hence the PRBS must be at least 4664 * 10 bits long [27]).

4. Count the number of NACK, ACK and statDTX on the UL HS-DPCCH during the test interval and decide pass or fail according to Annex F.6.3 tables F.6.3.5.3.1, F.6.3.5.3.2. F.6.3.5.3.3 and F.6.3.5.3.4. ACK is counted as a pass. NACK and statDTX are counted as a failure.

9.2.2.5 Test Requirements

The parameters and requirements are specified in table's 9.2.2.11 to 9.2.2.17. The pass / fail decision for throughput is done according to Annex F.6.3.

Table 9.2.2.11: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	~~Test 4~~
Phase reference		P-CPICH			
I_{oc}	DBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

Table 9.2.2.12: Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10 dB
1	PA3	-6	77	375
		-3	180	475
2	PB3	-6	20	183
		-3	154	274
3	VA30	-6	15	187
		-3	162	284
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)			

Table 9.2.2.13: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3	~~Test 4~~
Phase reference		P-CPICH			
I_{oc}	dBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{6,2,1,5}			
Maximum number of HARQ transmission		4			

Table 9.2.2.14: Test requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c/I_{or} **(dB)**	**T-put** R **(kbps) *** $\hat{I}_{or}/I_{oc}$ **= 10 dB**
1	PA3	-6	295
		-3	463
2	PB3	-6	24
		-3	243
3	VA30	-6	35
		-3	251
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)		

Table 9.2.2.15: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3	~~Test 4~~
Phase reference		P-CPICH			
I_{oc}	DBm/3.84 MHz	-60			
Redundancy and constellation version coding sequence		{0,2,5,6}			
Maximum number of HARQ transmission		4			

Table 9.2.2.16: Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} **(dB)**	**T-put** R **(kbps) *** $\hat{I}_{or}/I_{oc}$ **= 0 dB**	**T-put** R **(kbps) *** $\hat{I}_{or}/I_{oc}$ **= 10 dB**
1	PA3	-6	70	369
		-3	171	471
2	PB3	-6	14	180
		-3	150	276
3	VA30	-6	11	184
		-3	156	285
* Note~~s:~~ ~~1)~~ The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.2.2.17: 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 dB**	**T-put** R **(kbps) *** $\hat{I}_{or}/I_{oc}$ **= 10 dB**
1	PA3	-6	116	563
		-3	270	713
2	PB3	-6	30	275
		-3	231	411
3	VA30	-6	23	281
		-3	243	426
* Note~~s:~~ ~~1)~~ The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

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

9.2.3 Closed Loop Diversity Performance

9.2.3.1 Definition and applicability

The receiver single closed loop transmit diversity performance of the High Speed Physical Downlink Shared Channel (HS-DSCH) in multi-path fading environments are determined by the information bit throughput R.

The UE shall be tested only according to the data rates~~,~~ supported.~~ The data rate corresponding requirements shall apply to the UE.~~

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 1^{st} 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

~~For the parameters specified in Tables 9.2.3.3, 9.2.3.5, 9.2.3.7 t~~The requirements are specified in terms of minimum information bit throughput R ~~as shown in Table 9.2.3.4, 9.2.3.6, 9.2.3.8, and 9.2.3.9 for QPSK and~~

~~16QAM and~~ for the DL reference channels 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 Rate	%	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 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference		P-CPICH		
I_{oc}	dBm/3.84 MHz	-60		
DPCH frame offset ($\tau_{DPCH,n}$)	Chip	0		
Redundancy and constellation version coding sequence		{6,2,1,5}		
Maximum number of HARQ transmission		4		
Feedback Error Rate	%	4		
Closed loop timing adjustment mode		1		
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 Rate	%	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~~s:~~ ~~1)~~ The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.2.3.9: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	177	599
		-3	338	687
2	PB3	-6	75	299
		-3	260	452
3	VA30	-6	71	306
		-3	258	458
* Note~~s:~~ ~~1)~~ The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

The reference for this requirement is TS 25.101 [1] clauses 9.2.3.1, 9.2.3.2 and 9.2.3.3.

9.2.3.3 Test purpose

To verify the ability of the receiver to receive a predefined test signal, representing a multi-path fading channel with information bit throughput R not exceeding a specified value. The test stresses the multi-code reception and channel decoding with incremental redundancy.

9.2.3.4 Method of test

9.2.3.4.1 Initial conditions

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

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

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].
2. Start transmitting HSDPA Data.
3. The information bit data shall be pseudo random and not repeated before 10 different information bit payload blocks are processed. (e.g. Fixed reference Channel Definition H-set 1 (16 QAM): The information bit payload block is 4664 bits long. Hence the PRBS must be at least 4664 * 10 bits long [26].)
4. Count the number of NACK, ACK and statDTX on the UL HS-DPCCH during the test interval and decide pass or fail according to Annex F.6.3 tables F.6.3.5.4.1, F.6.3.5.4.2, F.6.3.5.4.3 and F.6.3.5.4.4. ACK is counted as a pass. NACK and statDTX are counted as a failure.

9.2.3.5 Test Requirements

The parameters and requirements are specified in table's 9.2.3.11 to 9.2.3.17. The pass / fail decision for throughput is done according to Annex F.6.3.

Table 9.2.3.11: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference		P-CPICH		
I_{oc}	dBm/3.84 MHz	-60		
DPCH frame offset ($\tau_{DPCH,n}$)	Chip	0		
Redundancy and constellation version coding sequence		{0,2,5,6}		
Maximum number of HARQ transmission		4		
Feedback Error Rate	%	4		
Closed loop timing adjustment mode		1		

Table 9.2.3.12: Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	118	399
		-3	225	458
2	PB3	-6	50	199
		-3	173	301
3	VA30	-6	47	204
		-3	172	305
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integers) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)				

Table 9.2.3.13: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference		P-CPICH		
I_{oc}	dBm/3.84 MHz	-60		
DPCH frame offset ($\tau_{DPCH,n}$)	Chip	0		
Redundancy and constellation version coding sequence		{6,2,1,5}		
Maximum number of HARQ transmission		4		
Feedback Error Rate	%	4		
Closed loop timing adjustment mode		1		

Table 9.2.3.14 Test requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	361
		-3	500
2	PB3	-6	74
		-3	255
3	VA30	-6	84
		-3	254
* Notes:	1)The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)		

Table 9.2.3.15: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference		P-CPICH		
I_{oc}	dBm/3.84 MHz	-60		
DPCH frame offset ($\tau_{DPCH,n}$)	Chip	0		
Redundancy and constellation version coding sequence		{0,2,5,6}		
Maximum number of HARQ transmission		4		
Feedback Error Rate	%	4		
Closed loop timing adjustment mode		1		

Table 9.2.3.16: Test requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	114	398
		-3	223	457
2	PB3	-6	43	196
		-3	167	292
3	VA30	-6	40	199
		-3	170	305
* Note~~s:~~ ~~1)~~ 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 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~~s:~~ ~~1)~~ The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

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