Technical Specification Group Terminals Meeting #16, Marco Island, Florida, USA, 5-7 June 2002

Source:	T1
Title:	CR's to TS 34.121 v3.8.0 for approval
Agenda item:	5.1.3
Document for:	Approval

This document contains 32 CRs to TS 34.121 v3.8.0. These CRs have been agreed by T1 and are put forward to TSG T for approval.

CRs related to maintenance of RRM test cases R99:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version -New	Doc-2nd- Level
34.121	153		R99	Deletion of test case description 'Correct reporting of	F	3.8.0	3.9.0	T1-020236
				neighbours in Fading propagation conditions - Inter frequency				
				case				
34.121	154		R99	Correction of UE Tx Timing adjustment rate	F	3.8.0	3.9.0	T1-020237
34.121	155		R99	Correction of Units of side conditions and test parameters	F	3.8.0	3.9.0	T1-020238
34.121	156		R99	Structure of subclause 8	F	3.8.0	3.9.0	T1-020239
34.121	157		R99	Inter-system Handover from UTRAN FDD to GSM	F	3.8.0	3.9.0	T1-020240
34.121	158		R99	UTRAN to GSM Cell Re-Selection: Change of minimum	F	3.8.0	3.9.0	T1-020241
				requirements				
34.121	159		R99	Cell reselection in idle mode: CR for testcase	F	3.8.0	3.9.0	T1-020242
34.121	160		R99	Cell reselection in idle mode: CR for annex F.4	F	3.8.0	3.9.0	T1-020243
34.121	161		R99	UTRAN to GSM cell reselection: CR for testcase	F	3.8.0	3.9.0	T1-020244
34.121	162		R99	UTRAN to GSM cell reselection: CR for annex F.4	F	3.8.0	3.9.0	T1-020245
34.121	163		R99	Test parameters of FDD/FDD Hard Handover test case	F	3.8.0	3.9.0	T1-020246
34.121	169		R99	UE RX TX time difference: CR for testcase	F	3.8.0	3.9.0	T1-020252
34.121	170		R99	UE RX TX time difference: CR for annex	F	3.8.0	3.9.0	T1-020253

CRs related to new RRM test cases R99:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version -New	Doc-2nd- Level
34.121	147		R99	Event triggered reporting in AWGN propagation conditions	F	3.8.0	3.9.0	T1-020222
34.121	148		R99	Event triggered reporting of multiple neighbours in AWGN propagation conditions	F	3.8.0	3.9.0	T1-020223
34.121	149		R99	Event triggered reporting of two detectable neighbours in AWGN propagation conditions	F	3.8.0	3.9.0	T1-020224
34.121	150		R99	Correct reporting of neighbours in fading propagation conditions	F	3.8.0	3.9.0	T1-020226
34.121	152		R99	Correct reporting of neighbours in AWGN propagation conditions - inter frequency case	F	3.8.0	3.9.0	T1-020235
34.121	164		R99	Addition of details for RRM test cases in 8.3.7.1 and 8.3.7.2 (Cell Re-selection in URA_PCH)	F	3.8.0	3.9.0	T1-020247
34.121	165		R99	Addition of details for RRM test cases in 8.4.1 (RRC Re- establishment delay)	F	3.8.0	3.9.0	T1-020248
34.121	166		R99	Addition of details for RRM test case 8.3.1	F	3.8.0	3.9.0	T1-020249
34.121	167		R99	Addition of details for RRM test case 8.3.5.1	F	3.8.0	3.9.0	T1-020250
34.121	168		R99	Addition of details for RRM test case 8.3.5.2	F	3.8.0	3.9.0	T1-020251

CRs related to maintenance of other R99 test cases:

Spec	CR	Rev	Release	Subject		Version	Version	Doc-2nd-
						Current	-New	Level
34.121	145		R99	Spectrum emission mask test case: Change to frequencies to be tested	F	3.8.0	3.9.0	T1-020220
34.121	146		R99	Power control in downlink, initial convergence	F	3.8.0	3.9.0	T1-020221
34.121	151		R99	Removal of "AFC On" reference from clause 5.3 Frequency Error test	F	3.8.0	3.9.0	T1-020227
34.121	171		R99	Correction for SSDT test parameters and UL DPCCH slot format for performance	F	3.8.0	3.9.0	T1-020265
34.121	172		R99	Correction of UE FDD EVM definition	F	3.8.0	3.9.0	T1-020266
34.121	173		R99	Clarification of Meaning of FDR	F	3.8.0	3.9.0	T1-020267
34.121	174		R99	Modification to the test case for RX spurious emissions in TS34.121	F	3.8.0	3.9.0	T1-020268
34.121	175		R99	Editorial correction to Open Loop Power Control and Transmit ON/OFF Time mask in TS34.121	F	3.8.0	3.9.0	T1-020422
34.121	176		R99	Corrections to ACLR in TS34.121	F	3.8.0	3.9.0	T1-020423

		CHAN	GE REQ	UEST		C	R-Form-v5.1
ж	34.121	CR <mark>145</mark>	ж rev	- #	Current vers	ion: 3.8.0	¥
For <u>HELP</u> on us	sing this for	rm, see bottom o	of this page or	look at th	e pop-up text	over the # syr	nbols.
Proposed change a	ffects: ೫	(U)SIM	ME/UE X	Radio Ad	ccess Network	Core Ne	twork
Title: ೫	Spectrum	emission mask	test case: Ch	ange to fr	equencies to l	be tested	
Source: ೫	T1/RF						
Work item code: %					Date: ೫	22 May, 2002	2
Category: %	F Use <u>one</u> of F (con A (cor B (add C (fun D (edi Detailed exp be found in	the following cate rection) responds to a cor dition of feature), ctional modification torial modification olanations of the a 3GPP <u>TR 21.900</u> S document ET	gories: rection in an ear on of feature)) above categorie: SI EN 301 908	rlier releas s can -2 v.1.1.1	Release: # Use <u>one</u> of 2 e) R96 R97 R98 R99 REL-4 REL-5	R99 the following rele (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5)	ases: AT-2000,
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Summary of change	e: ೫ Mid ı	range is added t	o frequencies	to be test	ed.		
Consequences if not approved:	¥ TS34	4.121 does not o	cover Europea	n regulato	ory requirement	nts.	
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Other specs affected:	ж <u>5.9</u> ж О Те	ther core specifi est specification &M Specificatio	ications ೫ s ns				
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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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

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

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

5.8.4.2 Procedure

- 1) Set and send continuously Up power control commands to the UE until the UE output power shall be maximum level.
- 2) Measure the power spectrum distribution within two times or more range over the requirement for Occupied Bandwidth specification centring on the current carrier frequency with 30 kHz or less RBW. The characteristic of the filter shall be approximately Gaussian (typical spectrum analyzer filter).
- 3) Calculate the total power within the range of all frequencies measured in '2)' and save this value as "Total Power".
- 4) Sum up the power upward from the lower boundary of the measured frequency range in '2)' and seek the limit frequency point by which this sum becomes 0,5 % of "Total Power" and save this point as "Lower Frequency".
- 5) Sum up the power downward from the upper boundary of the measured frequency range in '2)' and seek the limit frequency point by which this sum becomes 0,5 % of "Total Power" and save this point as "Upper Frequency".
- 6) Calculate the difference ("Upper Frequency" "Lower Frequency" = "Occupied Bandwidth") between two limit frequencies obtained in '4)' and '5)'.

5.8.5 Test Requirements

The measured Occupied Bandwidth, derived in step 6), shall not exceed 5 MHz.

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

5.9 Spectrum emission mask

5.9.1 Definition and applicability

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

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

5.9.2 Minimum Requirements

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

∆f in MHz (note 1)	Minimum requirement Band I, II, III	Additional requirements Band II	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 betwee	en the carrier frequency and the c	entre of the measuri	ng filter.			
NOTE 2: The first and last measure MHz.	ement position with a 30 kHz filter i	s at ∆f equals to 2,5	15 MHz and 3,485			
NOTE 3: The first and last measurement position with a 1 MHz filter is at ∆f 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 normative reference for this requirement is TS 25.101 [23] clause 6.6.2.1.1.

5.9.3 Test purpose

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

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

5.9.4 Method of test

5.9.4.1 Initial conditions

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

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

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

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

5.9.4.2 Procedure

- 1) Set and send continuously Up power control commands to the UE until the UE output power shall be maximum level.
- 2) Measure the power of the transmitted signal with a measurement filter of bandwidths according to table 5.9.2. Measurements with an offset from the carrier centre frequency between 2,515 MHz and 3,485 MHz shall use a

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

- 3) Measure the RRC filtered mean power centered on the assigned channel frequency.
- 4) Calculate the ratio of the power 2) with respect to 3) in dBc.

5.9.5 Test requirements

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

∆f in MHz (note 1)	Minimum requirement Band I, II, III	Additional requirements	Measurement bandwidth				
		Band II					
2,5 to 3,5	$\left\{-33.5 - 15 \cdot \left(\frac{\Delta f}{MHz} - 2.5\right)\right\} dB$	c -15 dBm	30 kHz (note 2)				
3,5 to 7,5	$\left\{-33.5 - 1 \cdot \left(\frac{\Delta f}{MHz} - 3.5\right)\right\} dB$	² -13 dBm	1 MHz (note 3)				
7,5 to 8,5	$\left\{-37.5 - 10 \cdot \left(\frac{\Delta f}{MHz} - 7.5\right)\right\} dB$	c -13 dBm	1 MHz (note 3)				
8,5 to 12,5	–47,5 dBc	-13 dBm	1 MHz (note 3)				
 NOTE 1: Δf is the separation between the carrier frequency and the centre of the measuring filter. NOTE 2: The first and last measurement position with a 30 kHz filter is at Δf equals to 2,515 MHz and 3,485 MHz. NOTE 3: The first and last measurement position with a 1 MHz filter is at Δf equals to 4 MHz and 12 MHz. As a general rule, the resolution bandwidth of the measuring equipment should be equal to the measurement bandwidth. To improve measurement accuracy, sensitivity and affirment the resolution benchuidth on the measurement accuracy. 							
efficiency, the resolution bandwidth can be different from the measurement bandwidth. When the resolution bandwidth is smaller than the measurement bandwidth, the result should be integrated over the measurement bandwidth in order to obtain the equivalent noise bandwidth of the measurement bandwidth.							
The lower limit shall be –48.5 dBm/3.84 MHz or which ever is higher.							

Table 5.9.2: Spectrum Er	mission Mask Red	quirement
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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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For <u>HELP</u> on us	sing this fo	rm, see bottom o	of this page or	look at the	pop-up text	over the # symbols.	
Proposed change a	nffects:	(U)SIM	ME/UE X	Radio Acc	cess Network	Core Network	
Title: ೫	Power co	ontrol in downlink	, initial conver	gence: Cha	<mark>anges based</mark>	on TS 25.101 CR's	
Source: ೫	T1/RF						
Work item code: %					Date: ೫	22 May, 2002	
Category: ೫	F Use <u>one</u> of F (cor A (co B (ad C (fur D (ed Detailed ex be found in : # The 25.1 valu e: # 1) 2)	the following cate rrection) rresponds to a cor dition of feature), notional modification planations of the a 3GPP <u>TR 21.900</u> minimum requir 01 CR136). It is es must be aver The subclause 7 25.101. Clarifica in subclause 7.8 Test parameters	gories: rection in an ear on of feature)) above categories ements in 25.1 unclear how t aged for powe (.8.2.2 "Minimu tion of averagi .2.4.2. are modified	rlier release) s can 01 has bee he downlind r control in um requirer ng method according t	Release: # Use <u>one</u> of t 2 R96 R97 R98 R99 REL-4 REL-5 en changed (k DPCH_Ec/ itial converge ments" is mou is copied to	R99 the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (25.101 CR133 and lor power measured ence test. dified according to TS test proceduce step 3)	
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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.

b) The downlink $\frac{DPCH_E_c}{I_{or}}$ power ratio values, which are averaged over one slot, shall be below the values in table 7.8.1.4 mere than 00.% of the time

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table 7.8.1.4 more than 90 % of the time.

T-11. 7044 D.					
Table 7.8.1.4: Rec	uirements in	downlink p	ower control,	constant B	LER target

Parameter	Test 1	Test 2	Unit
$\frac{DPCH_E_c}{I_{or}}$	-15,9	-8,9	dB
Measured quality on DTCH	0,01 ± 30 %	0,01 ± 30 %	BLER

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

7.8.2 Power control in the downlink, initial convergence

7.8.2.1 Definition and applicability

This requirement verifies that DL power control works properly during the first seconds after DPCH connection is established. The requirements and this test apply to all types of UTRA for the FDD UE.

7.8.2.2 Minimum requirements

For the parameters specified in table 7.8.2.1 the downlink DPCH_Ec/Ior power ratio measured values, which are averaged over 50 ms, shall be within the range specified in table 7.8.2.2 more than 90 % of the time. T1 equals to 500 ms and it starts 10 ms after the DPDCH connection is initiated. T2 equals to 500 ms and it starts when T1 has expired. Power control is ON during the test.

The first 10 ms shall not be used for averaging, i.e. the first sample to be input to the averaging filter is at the beginning of T1. The averaging shall be performed with a sliding rectangular window averaging filter. The window size of the averaging filter is linearly increased from 0 up to 50 ms during the first 50 ms of T1, and then kept equal to 50ms.

Parameter	Test 1	Unit				
Target quality value on	0,01	BLER				
DTCH						
Initial DPCH_Ec/lor	-5,9	-22,1	dB			
Information Data Rate	12,2	12,2	64	64	kbps	
\hat{I}_{or}/I_{oc}		dB				
I _{oc}		dBm/3,84 MHz				
Propagation condition		S	tatic			
Maximum_DL_Power (note)			7		dB	
Minimum_DL_Power (note)		-	·18		dB	
DL Power Control step size,	4					
Δ_{TPC}		uВ				
Limited Power Increase "Not used"						
NOTE: Power is compared to P-CPICH as specified in [9].						

Parameter	Test 1 and Test 2	Test 3 and Test 4	Unit
$\frac{DPCH_E_c}{I_{or}} \text{ during T1}$	-18,9 ≤ DPCH_Ec/lor ≤ -11,9	$-15,1 \le DPCH_Ec/lor \le -8,1$	dB
$\frac{DPCH_E_c}{I_{or}} \text{ during T2}$	$-18,9 \le DPCH_Ec/lor \le -14,9$	$-15,1 \le DPCH_Ec/lor \le -11,1$	dB

Table 7.8.2.2: Requirements in downlink power control, initial convergence

The reference for this requirement is TS 25.101 [1] clause 8.8.2.1.

7.8.2.3 Test purpose

To verify that DL power control works properly during the first seconds after DPCH connection is established.

7.8.2.4 Method of test

7.8.2.4.1 Initial conditions

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

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

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

7.8.2.4.2 Procedure

- 1) Set up call using test parameters according to table 7.8.2.1.
- 2) SS signals to UE target quality value on DTCH as specified in table 7.8.2.3. SS will vary the physical channel power in downlink according to the TPC commands from UE. Downlink power control mode (DPC_MODE) 0 shall be used.
- 3) Measure $\frac{DPCH_{-}E_{c}}{I_{or}}$ power ratio averaged over 50 ms during T1. T1 starts 10 ms after DPDCH connection is

initiated and T1 equals to 500 ms. The first 10 ms shall not be used for averaging, i.e. the first sample to be input to the averaging filter is at the beginning of T1. The averaging shall be performed with a sliding rectangular window averaging filter. The window size of the averaging filter is linearly increased from 0 up to 50 ms during the first 50 ms of T1, and then kept equal to 50ms.

4) Measure $\frac{DPCH_{-}E_{c}}{I_{or}}$ power ratio averaged over 50 ms during T2. T2 starts, when T1 has expired and T2 equals

to 500 ms.

7.8.2.5 Test Requirements

The test parameters are specified in table 7.8.2.3.

1

Parameter	Test 1	Unit				
Target quality value on DTCH	0,01	BLER				
Initial DPCH_Ec/lor	-5,9	-25,9	- 2,1 3	-22,1	dB	
Information Data Rate	12,2	12,2	64	64	kbps	
\hat{I}_{or}/I_{oc}		dB				
I _{oc}	-60 dBm					
Propagation condition		S	tatic			
Maximum_DL_Power (note)			7		dB	
Minimum_DL_Power (note)		dB				
DL Power Control step size, Δ_{TPC}	1 dl					
Limited Power Increase	"Not used"					
NOTE: Power is compared to P-CPICH as specified in [9].						

Table 7.8.2.3: Test parameters for downlink power control, initial convergence

- a) The downlink $\frac{DPCH_{-}E_{c}}{I_{or}}$ power ratio values shall be within the range specified in table 7.8.2.4 during T1 more than 90 % of the time.
- b) The downlink $\frac{DPCH_{-}E_{c}}{I_{or}}$ power ratio values shall be within the range specified in table 7.8.2.4 during T2 more than 00 % of the time

than 90 % of the time.

Parameter	Test 1 and Test 2	Test 3 and Test 4	Unit
$\frac{DPCH_E_c}{I_{or}}$ during T1	-18,8 ≤ DPCH_Ec/lor ≤ -11,8	$-15,0 \le DPCH_Ec/lor \le -8,0$	dB
$\frac{DPCH_E_c}{I_{or}} \text{ during T2}$	$-18,8 \le DPCH_Ec/lor \le -14,8$	$-15,0 \le DPCH_Ec/lor \le -11,0$	dB

Table 7.8.2.4: Requirements in downlink power control, initial convergence

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.

CHANGE REQUEST						
ж	34.121	CR <mark>147</mark>	жrev	- *	Current vers	ion: 3.8.0 [#]
For <u>HELP</u> on us	ing this for	m, see bottom	of this page or	look at the	e pop-up text	over the # symbols.
Proposed change a	ffects: ೫	(U)SIM	ME/UE X	Radio Ac	cess Network	Core Network
Title: ೫	Event trig	gered reporting	in AWGN pro	pagation c	<mark>onditions – In</mark>	tra frequency case
Source: ೫	T1/RF					
Work item code: %					<i>Date:</i>	22 May, 2002
Category:	F Use <u>one</u> of a F (con A (cor B (add C (fun D (edia Detailed exp be found in	the following cate rection) responds to a col lition of feature), ctional modification torial modification blanations of the a 3GPP <u>TR 21.900</u>	egories: rrection in an ea on of feature)) above categorie	rlier release s can	Release: % Use <u>one</u> of 2 8) R96 R97 R98 R99 REL-4 REL-5	R99 the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5)
Reason for change.	Reason for change: # Test case description of Event triggered reporting in AWGN propagation conditions is missing in TS 34.121.					
Summary of change	e: ೫ Addit	tion of test case	e Event triggere	ed reportin	<mark>g in AWGN p</mark>	propagation conditions.
Consequences if not approved:	業 <mark>Test</mark> cond	case descriptio itions is missing	n of Event trigg g in TS 34.121	gered repo and the sp	orting in AWG Dec remains i	N propagation ncomplete.
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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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

r) Test system shall verify that the UE transmit timing offset stays within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

8.5.1.5 Test requirements

- 1) In step a), d) and g), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- 2) In step j), the adjustment step size and adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- 3) In step k) and n), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- 4) In step q), the adjustment step size and adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- 5) In step r), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path 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.

8.6 UE Measurements Procedures

8.6.1 FDD intra frequency measurements

8.6.1.1 Event triggered reporting in AWGN propagation conditions

Void

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 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

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

Release 1999

110

A cell shall be considered detectable when CPICH Ec/Io > -20 dB, SCH Ec/Io > -20 dB 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 intrafrequency 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 $Y_{measurement intra}$ cells , where $Y_{measurement intra}$ 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 $Y_{measurement intra}$ 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.

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

where

<u> $X_{\text{basic measurement FDD}} = 8 \text{ (cells)}$ </u>

<u>T_{Measurement_Period Intra} = 200 ms. The measurement period for Intra frequency CPICH measurements.</u>

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

<u> $T_{\text{basic identify FDD, intra}} = 800 \text{ ms.}$ 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.</u>

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

<u>If a cell, belonging to monitored set, which the UE has identified and measured at least once over the measurement</u> 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.

8.6.1.1.3 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 Table 8.6.1.1.1 and 8.6.1.1.2 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 8.6.1.1.1: General test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement	As specified in TS 25.101 section A.3.1
		Channel 12.2 kbps	
Power Control		<u>On</u>	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	<u>0</u>	
W		<u>1</u>	Applicable for event 1A and 1B
Reporting deactivation		<u>0</u>	Applicable for event 1A
threshold			
Time to Trigger	<u>ms</u>	<u>0</u>	
Filter coefficient		<u>0</u>	
Monitored cell list size		<u>24</u>	
<u>T1</u>	<u>s</u>	<u>5</u>	
<u>T2</u>	S	<u>5</u>	
T3	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			
		<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	
CPICH_Ec/lor	<u>dB</u>		<u>-10</u>			<u>-10</u>		
PCCPCH_Ec/lor	<u>dB</u>		<u>-12</u>		-12			
SCH_Ec/lor	<u>dB</u>		<u>-12</u>		-12			
PICH_Ec/lor	<u>dB</u>		<u>-15</u>		<u>-15</u>			
DPCH_Ec/lor	<u>dB</u>		<u>-17</u>		<u>N/A</u>			
<u>OCNS</u>			<u>-1.049</u>		-0.941			
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>0</u>	<u>6.97</u>	<u>0</u>	<u>-Infinity</u>	<u>5.97</u>	-Infinity	
Iac	dBm/3.84	<u>-70</u>		•				
<u> </u>	MHz							
CPICH_Ec/lo	<u>dB</u>	<u>-13</u>	<u>-13</u>	<u>-13</u>	-Infinity	<u>-14</u>	-Infinity	
Propagation		AWGN						
Condition								

8.6.1.1.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the 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, the SS shall switch the power settings from T1 to T2.
- 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 800 ms.
- 7) After 5 seconds, the SS shall switch the power settings from T2 to T3.
- 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 200 ms.
- 9) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 10) Repeat steps 1-9 [TBD] times.

Specific Message Contents

<u>All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:</u>

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
LIE 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	AMRLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement (10.3.7.36)	intra-frequency measurement
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	<u></u>
-Filter coefficient (10.3.7.9)	<u>0</u>
-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)	
-SEN-SEN observed time difference reporting indicator	No report
Cell Identity reporting indicator	
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
<u>-Cell synchronisation information reporting indicator</u>	TRUE (Note 1)
-Cell Identity reporting indicator	
<u>CRICH Ec/N0 reporting indicator</u>	
-CPICH EC/NO reporting indicator	
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	2
<u>-Measurement validity (10.3.7.51)</u>	Not Present
<u>-CHOICE report criteria</u>	Intra-frequency measurement reporting
-Intra-frequency measurement reporting criteria (10.3.7.30)	cinena
-Parameters required for each event	2
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Active set cells and monitored set cells
-Reporting Range Constant	<u>3 dB</u>
-Cells forbidden to affect Reporting Range	Not Present
<u>-CHOICE mode</u>	<u>FDD</u>
-Primary CPICH info (10.3.6.60)	
	<u>1.0</u>
- <u>Tysielesis</u> -Threshold used frequency	<u>U UD</u> Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	vert Not Present
-Time to trigger	0 ms
-Amount of reporting	Not present
-Reporting interval	<u>0 ms (Note 2)</u>
-Reporting cell status	Not Present
-Intra-trequency event identity	Event 1B Active act calls and manifested act calls
- I riggering condition 1 Reporting Range Constant	Active set cells and monitored set cells
-Reporting Range Constant -Cells forbidden to affect Reporting Range	<u>3 uD</u> Not Present
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	·
<u>W</u>	<u>1.0</u>

Information Element/Group name	Value/Remark					
-Hysteresis	<u>0 dB</u>					
-Threshold used frequency	Not Present					
-Reporting deactivation threshold	Not Present					
-Replacement activation threshold	Not Present					
-Time to trigger	<u>0 ms</u>					
-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 25.33	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 reportir	ng					

MEASUREMENT REPORT message for Intra frequency test cases

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

8.6.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, with a confidence level of [FFS]% of the cases.

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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Consequences if not approved:	ж	Test AWC and	case of SN pro the spe	lescriptio pagation ec remair	on of Ev conditions incon	ent trig ons – Ir oplete.	gerec ntra fr	l repo eque	orting of mu ncy case, is	ltiple n s missi	eighbours ng in TS 3	s in 34.121
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How to create CRs using this form:

Other comments:

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Comprehensive information and tips about how to create CRs can be found at: <u>http://www.3gpp.org/3G_Specs/CRs.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

r) Test system shall verify that the UE transmit timing offset stays within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

8.5.1.5 Test requirements

- 1) In step a), d) and g), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- 2) In step j), the adjustment step size and adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- 3) In step k) and n), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- 4) In step q), the adjustment step size and adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- 5) In step r), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path 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.

8.6 UE Measurements Procedures

- 8.6.1 FDD intra frequency measurements
- 8.6.1.1 Event triggered reporting in AWGN propagation conditions

Void

8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation conditions

Void

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 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.

110

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 test parameters are given in Table 8.6.1.2.1 and 8.6.1.2.2. 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 8.6.1.2.1: General test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel	As specified in TS 25.101 section A.3.1
		<u>12.2 kbps</u>	
Power Control		<u>On</u>	
Active cell		<u>Cell 1</u>	
Reporting range	<u>dB</u>	<u>3</u>	Applicable for event 1A and 1B
<u>Hysteresis</u>	<u>dB</u>	<u>0</u>	
W		<u>1</u>	Applicable for event 1A and 1B
Replacement		<u>0</u>	Applicable for event 1C
activation threshold			
Reporting		<u>0</u>	Applicable for event 1A
deactivation			
threshold			
Time to Trigger	<u>ms</u>	<u>0</u>	
Filter coefficient		<u>0</u>	
Monitored cell list		<u>32</u>	
<u>size</u>			
<u>T1</u>	<u>S</u>	<u>10</u>	
<u>T2</u>	<u>S</u>	<u>10</u>	
<u>T3</u>	<u>S</u>	<u>5</u>	
<u>T4</u>	<u>S</u>	<u>10</u>	

Table 8.6.1.2.2: Cell specific test parameters for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2				Cell3			
		<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>
CPICH_Ec/lor	<u>dB</u>	-10			-10				<u>-10</u>				
PCCPCH_Ec/ lor	<u>dB</u>	<u>-12</u>			<u>-12</u>			<u>-12</u>					
SCH Ec/lor	<u>dB</u>	<u>-12</u>				<u>-12</u>			<u>-12</u>				
PICH Ec/lor	<u>dB</u>	<u>-15</u>				<u>-15</u>				<u>-15</u>			
DPCH_Ec/lor	<u>dB</u>	<u>-17</u>				<u>N/A</u>			<u>N/A</u>				
OCNS Ec/lor	<u>dB</u>		<u>-1.(</u>	<u>)49</u>	-		<u>-0.941</u>			<u>-0.941</u>			
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>6.97</u>	<u>6.93</u>	<u>5.97</u>	<u>6.12</u>	<u>-Inf</u>	<u>9.43</u>	<u>6.97</u>	<u>7.62</u>	<u>5.97</u>	<u>6.93</u>	<u>-Inf</u>	<u>5.62</u>
I _{oc}	<u>dBm/</u> <u>3.84</u> <u>MHz</u>		<u>-85</u>										
CPICH_Ec/lo	<u>dB</u>	<u>-13</u>	<u>-16</u>	<u>-14</u>	<u>-15.5</u>	<u>-Inf</u>	<u>-13.5</u>	<u>-13</u>	<u>-14</u>	<u>-14</u>	<u>-16</u>	<u>-Inf</u>	<u>-16</u>
Propagation Condition		AWGN											

8.6.1.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) 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 800 ms.
- 6) 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.
- 7) After 10 seconds, the SS shall switch the power settings from T1 to T2.
- 8) 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 800 ms.
- 9) 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 800 ms.
- 10) After 10 seconds, the SS shall switch the power settings from T2 to T3.
- 11) 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 200 ms.
- 12) After 5 seconds, the SS shall switch the power settings from T3 to T4.
- 13) 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 200 ms.
- 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) 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.

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

17) Repeat steps 1-16 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
LIE 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	AMRLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement (10.3.7.36)	intra-frequency measurement
-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)	<u>0</u>
-CHOICE mode	<u>FDD</u>
-Measurement quantity	CPICH_Ec/N0
<u>-Intra-frequency reporting quantity (10.3.7.41)</u>	
-Reporting quantities for active set cells (10.3.7.5)	No. non-out
-SEN-SEN observed time difference reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
<u>-SFN-SFN observed time difference reporting indicator</u>	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-CPICH Ec/N0 reporting indicator	
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	<u>3</u> Not Descent
<u>Measurement Validity (10.3.7.51)</u>	Intra fraguency measurement reporting
	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	ontend
-Parameters required for each event	3
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Active set cells and monitored set cells
-Reporting Range Constant	<u>3 dB</u>
-Cells forbidden to affect Reporting Range	Not Present
<u>-CHOICE mode</u> Primary CRICH info (10.2.6.60)	FDD
	10
	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
Time to trigger	<u>0 ms</u>
<u>-Amount of reporting</u>	Infinity
<u>Reporting only status</u>	Ums (Note 2) Not Proport
-reporting cell status	Event 1B
-Triagering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
<u>W</u>	<u>1.0</u>

Information Element/Group name	Value/Remark					
-Hysteresis	0 dB					
-Threshold used frequency	Not Present					
-Reporting deactivation threshold	Not Present					
-Replacement activation threshold	Not Present					
-Time to trigger	<u>0 ms</u>					
-Amount of reporting	Not Present					
-Reporting interval	<u>0 ms (Note 2)</u>					
-Reporting cell status	Not Present					
-Intra-frequency event identity	Event 1C					
-Triggering condition 2	Active set cells and monitored set cells					
-Reporting Range Constant	Not present					
-Cells forbidden to affect Reporting Range	Not Present					
-CHOICE mode	<u>FDD</u>					
-Primary CPICH info (10.3.6.60)						
<u>-W</u>	Not present					
-Hysteresis	<u>0 dB</u>					
-Threshold used frequency	Not Present					
-Reporting deactivation threshold	Not present					
-Replacement activation threshold	<u>0 ms</u>					
-Time to trigger	<u>0 ms</u>					
-Amount of reporting	Infinity					
-Reporting interval	<u>0 ms (Note 2)</u>					
-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 25.33	1, clause 10.3.7.6. According to TS 25.331,					
8.6.7.7, this IE is included in MEASUREMENT REPORT	RT 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%, with a confidence level of [FFS]% of the cases.

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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How to create CRs using this form:

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Other comments:

Comprehensive information and tips about how to create CRs can be found at: <u>http://www.3gpp.org/3G_Specs/CRs.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

r) Test system shall verify that the UE transmit timing offset stays within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

8.5.1.5 Test requirements

- 1) In step a), d) and g), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- 2) In step j), the adjustment step size and adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- 3) In step k) and n), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- 4) In step q), the adjustment step size and adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- 5) In step r), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path 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.

8.6 UE Measurements Procedures

- 8.6.1 FDD intra frequency measurements
- 8.6.1.1 Event triggered reporting in AWGN propagation conditions

Void

8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation conditions

Void

8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation conditions

Void

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 FDD UE.

110

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 test parameters are given in Table 8.6.1.3.1 and 8.6.1.3.2. 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 8.6.1.3.1: General test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement	As specified in TS 25.101 section A.3.1
		Channel 12.2 kbps	
Power Control		<u>On</u>	
Active cell		<u>Cell 1</u>	
Reporting range	<u>dB</u>	<u>3</u>	Applicable for event 1A and 1B
<u>Hysteresis</u>	<u>dB</u>	<u>0</u>	
W		<u>1</u>	Applicable for event 1A and 1B
Reporting deactivation		<u>0</u>	Applicable for event 1A
threshold			
Time to Trigger	<u>ms</u>	<u>0</u>	
Filter coefficient		<u>0</u>	
Monitored cell list size		<u>32</u>	
<u>T1</u>	<u>s</u>	<u>10</u>	
<u>T2</u>	<u>s</u>	<u>10</u>	
<u>T3</u>	<u>S</u>	<u>10</u>	
<u>T4</u>	<u>S</u>	<u>10</u>	

Table 8.6.1.3.2: Cell specific test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2				Cell3				
		<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	
CPICH_Ec/lor	<u>dB</u>	-10				-10				<u>-10</u>				
PCCPCH_Ec/ lor	<u>dB</u>	-12			<u>-12</u>				<u>-12</u>					
SCH_Ec/lor	<u>dB</u>	<u>-12</u>				<u>-12</u>				<u>-12</u>				
PICH_Ec/lor	<u>dB</u>	<u>-15</u>					<u>-15</u>				<u>-15</u>			
DPCH_Ec/lor	<u>dB</u>	<u>-17</u>				<u>N/A</u>			<u>N/A</u>					
OCNS_Ec/lor	<u>dB</u>		<u>-1.</u>	<u>049</u>		<u>-0.941</u>				<u>-0.941</u>				
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>14.5</u> 5	<u>28.5</u> <u>1</u>	<u>14.4</u> 5	<u>28.5</u> 1	<u>-Inf</u>	<u>27.5</u> 1	<u>13.9</u> 5	<u>21.5</u> <u>1</u>	<u>8.05</u>	<u>21.5</u> <u>1</u>	<u>13.9</u> 5	<u>27.5</u> 1	
I _{oc}	<u>dBm/</u> <u>3.84</u> <u>MHz</u>		<u>-85</u>											
CPICH_Ec/lo	<u>dB</u>	<u>-11</u>	<u>-13</u>	<u>-14.5</u>	<u>-13</u>	<u>-Inf</u>	<u>-14.0</u>	<u>-15</u>	<u>-20</u>	<u>-17.5</u>	<u>-20</u>	<u>-15</u>	<u>-14</u>	
Propagation Condition		AWGN												

8.6.1.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 10 seconds, the SS shall switch the power settings from T1 to T2.
- 6) 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 800 ms.
- 7) After 10 seconds, the SS shall switch the power settings from T2 to T3.
- 8) 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 200 ms.
- 9) After 10 seconds, the SS shall switch the power settings from T3 to T4.
- 10) 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 200 ms.
- 11) After 10 seconds, the UE is switched off.
- 12) Repeat steps 1-11 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
LIE 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	AMRLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement (10.3.7.36)	intra-frequency measurement
-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)	<u>0</u>
-CHOICE mode	<u>FDD</u>
-Measurement quantity	CPICH_Ec/N0
Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	No. non-out
-SEN-SEN observed time difference reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
<u>-SFN-SFN observed time difference reporting indicator</u>	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-CPICH Ec/N0 reporting indicator	
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
<u>-CHOICE reported cell</u>	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	<u>3</u> Not Dresent
Measurement validity (10.3.7.51)	Intra-frequency measurement reporting
	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	ontona
-Parameters required for each event	2
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Active set cells and monitored set cells
-Reporting Range Constant	<u>3 dB</u>
-Cells forbidden to affect Reporting Range	Not Present
<u>-CHOICE mode</u> Primary CRICH info (10.2.6.60)	FDD
	10
	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
<u>-Time to trigger</u>	<u>0 ms</u>
<u>-Amount of reporting</u>	Not present
<u>Reporting only status</u>	Ums (Note 2) Not Proport
-reporting cell status	Event 1B
-Triagering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
<u>W</u>	<u>1.0</u>

Information Element/Group name	Value/Remark				
-Hysteresis	<u>0 dB</u>				
-Threshold used frequency	Not Present				
-Reporting deactivation threshold	Not Present				
-Replacement activation threshold	Not Present				
-Time to trigger	<u>0 ms</u>				
-Amount of reporting	Not Present				
-Reporting interval	<u>0 ms (Note 2)</u>				
-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 25.33	1, clause 10.3.7.6. According to TS 25.331,				
8.6.7.7, this IE is included in MEASUREMENT REPO	RT if IE "Cell synchronisation information				
reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE					
MEASUREMENT CONTROL.					
Note 2: Reporting interval = 0 ms means no periodical reporting	ng				

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%, with a confidence level of [FFS]% of the cases.

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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How to create CRs using this form:

Other comments:

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

- 1) Fill out the above form. The symbols above marked **#** contain pop-up help information about the field that they are closest to.
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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

r) Test system shall verify that the UE transmit timing offset stays within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

8.5.1.5 Test requirements

- 1) In step a), d) and g), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- 2) In step j), the adjustment step size and adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- 3) In step k) and n), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- 4) In step q), the adjustment step size and adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- 5) In step r), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path 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.

8.6 UE Measurements Procedures

- 8.6.1 FDD intra frequency measurements
- 8.6.1.1 Event triggered reporting in AWGN propagation conditions

Void

8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation conditions

Void

8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation conditions

Void

8.6.1.4 Correct reporting of neighbours in fading propagation conditions

Void

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

Release 1999

excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the FDD UE.

8.6.1.4.2 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.

8.6.1.4.3 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 Reference Measurement Channel	As specified in TS 25.101 section A.3.1
		<u>12.2 kbps</u>	
Power Control		<u>On</u>	
Active cell		Cell 1	
Reporting range	<u>dB</u>	<u>0</u>	Applicable for event 1A and 1B
<u>Hysteresis</u>	<u>dB</u>	<u>0</u>	
W		1	Applicable for event 1A and 1B
Reporting deactivation		<u>0</u>	Applicable for event 1A
threshold			
Time to Trigger	<u>ms</u>	<u>120</u>	
Filter coefficient		<u>0</u>	
Monitored cell list size		24	Signalled before time T1.
<u>T1</u>	<u>s</u>	200	
<u>T2</u>	<u>S</u>	<u>201</u>	

-12

propagation condition							
Parameter	Unit	Cell 1 Cell 2					
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>		
CPICH_Ec/lor	<u>dB</u>	<u>-10</u>		<u>-10</u>			
PCCPCH_Ec/lor	<u>dB</u>	<u>-12</u>		<u>-12</u>			
SCH_Ec/lor	<u>dB</u>	<u>-12</u>		<u>-12</u>			
PICH_Ec/lor	<u>dB</u>	<u>-15</u>		<u>-15</u>			
DPCH_Ec/lor	<u>dB</u>	<u>-17</u>		<u>N/A</u>			
<u>OCNS</u>		<u>-1.049</u>		<u>-0.941</u>			
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>7.29</u>	<u>3.29</u>	<u>3.29</u>	<u>7.29</u>		
I	dBm/3.84	70					

Case 5 as specified in Table D.2.2.1 Annex B of TS25.101

-16

-16

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

PICH_Ec/lo

Propagation

Condition

 I_{oc}

8.6.1.4.4.2

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

Procedure

MHz

dB

- 2) The UE is switched on.
- A call is set up in AWGN conditions, according to the test procedure specified in TS 34.108 [3] sub clause 3) 7.3.2.3.
- 4) The fading simulator is switched on, configured with the settings described in the tables above.
- 5) SS shall transmit a MEASUREMENT CONTROL message.
- 6) UE shall start transmitting MEASUREMENT REPORT messages triggered by event 1A.

-70

-12

- 7) SS shall count the reports. The number of received event 1A reports shall be less than 60.
- 8) After 200 seconds, 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.
- 12) After 201 seconds, the UE is switched off.
- 13) Repeat steps 1-12 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark				
LIE 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	AMRLC				
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger				
-Additional measurements list (10.3.7.1)	Not Present				
<u>-CHOICE Measurement (10,2,7,26)</u>	intra-frequency measurement				
-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)					
-SFN-SFN observed time difference reporting indicator	No report				
-Cell Identity reporting indicator					
	FDD				
-CPICH Ec/N0 reporting indicator	TRUE				
-CPICH RSCP reporting indicator	TRUE				
-Pathloss reporting indicator	TRUE				
-Reporting quantities for monitored set cells (10.3.7.5)					
-SFN-SFN observed time difference reporting indicator	No report				
<u>-Cell synchronisation information reporting indicator</u>	TRUE (Note 1)				
-Cell Identity reporting indicator					
<u>CRICH Ec/N0 reporting indicator</u>					
-CPICH RSCP reporting indicator					
-Pathloss reporting indicator	TRUE				
-Reporting quantities for detected set cells (10.3.7.5)	Not Present				
-Reporting cell status (10.3.7.61)					
-CHOICE reported cell	Report all active set cells + cells within				
	monitored set on used frequency				
-Maximum number of reported cells	2				
<u>Measurement validity (10.3.7.51)</u>	Not Present				
<u>-CHOICE report criteria</u>	Intra-frequency measurement reporting				
-Intra-frequency measurement reporting criteria (10.3.7.30)					
-Parameters required for each event	2				
-Intra-frequency event identity	Event 1A				
-Triggering condition 2	Active set cells and monitored set cells				
-Reporting Range Constant	<u>0 dB</u>				
-Cells forbidden to affect Reporting Range	Not Present				
-CHOICE mode	FDD				
-Primary CPICH info (10.3.6.60)	1.0				
<u>-W</u>	<u>1.0</u>				
<u>-Hysteresis</u> Threshold used frequency	<u>U dB</u> Not Procent				
- Reporting deactivation threshold	0				
-Replacement activation threshold	v Not Present				
-Time to trigger	120 ms				
-Amount of reporting	Not present				
-Reporting interval	<u>0 ms (Note 2)</u>				
-Reporting cell status	Not Present				
-Intra-frequency event identity	Event 1B				
- Iriggering condition 1	Active set cells and monitored set cells				
-Keporting Kange Constant	U aB Not Present				
	FDD				
-Primary CPICH info (10.3.6.60)					
	1.0				
Information Element/Group name	Value/Remark				
--	---	--	--	--	--
-Hysteresis	<u>0 dB</u>				
-Threshold used frequency	Not Present				
-Reporting deactivation threshold	Not Present				
-Replacement activation threshold	Not Present				
-Time to trigger	<u>120 ms</u>				
-Amount of reporting	Not Present				
-Reporting interval	<u>0 ms (Note 2)</u>				
-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 25.33	1, clause 10.3.7.6. According to TS 25.331,				
8.6.7.7, this IE is included in MEASUREMENT REPO	RT if IE "Cell synchronisation information				
reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE i					
MEASUREMENT CONTROL.					
Note 2: Reporting interval = 0 ms means no periodical reporting	ng				

MEASUREMENT REPORT message for Intra frequency test cases

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

8.6.1.4.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, with a confidence level of [FFS]% of the cases.

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.

CHANGE REQUEST										
* 3	<mark>84.121</mark>	CR <mark>151</mark>	ж re\	۲ - ^۲	Current vers	sion: 3.8.0 [#]				
For <u>HELP</u> on usin	For HELP on using this form, see bottom of this page or look at the pop-up text over the # symbols.									
Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network										
Title: %	Removal	of "AFC On" re	ference from	clause 5.	3 Frequency E	rror test				
Source: ೫ 7	T1-RF									
Work item code: 🕷 📃					Date: भ	21/05/2002				
Category: # F Release: % R99 Use one of the following categories: Use one of the following releases: 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can be found in 3GPP TR 21.900. REL-5 (Release 5)										
Reason for change:	Reason for change: # Test case 5.3 refers to "AFC On". However, this parameter is now redundant as no reference can be found on how to control it in the core specifications. I therefore suggest that any reference to AFC should be deleted.									
Summary of change:	ж <mark>5.3 С</mark>	eletion of AFC	On							
Consequences if not approved:	₭ If Cr spec	not approved t ifications.	he control of	AFC need	ds to be explain	ned in the core				
Clauses affected:	ж <mark>5.3</mark>									
Other specs affected:	ж — Ot Те О	her core speci est specification &M Specification	fications ns ons	ж						
Other comments:	ж									

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: <u>http://www.3gpp.org/3G_Specs/CRs.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

5.3 Frequency Error

5.3.1 Definition and applicability

The frequency error is the difference between the RF modulated carrier frequency transmitted from the UE with AFC ON and the assigned frequency. The UE transmitter tracks to the RF carrier frequency received from the Node B. These signals will have an apparent error due to Node B frequency error and Doppler shift. In the later case, signals from the Node B must be averaged over sufficient time that errors due to noise or interference are allowed for within the above ± 0.1 ppm figureminimum requirements specified in 5.3.2.

The UE shall use the same frequency source for both RF frequency generation and the chip clock.

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

5.3.2 Minimum Requirements

The UE modulated carrier frequency shall be accurate to within ± 0.1 ppm <u>observed over a period of one timeslot</u> compared to the carrier frequency received from the Node B.

The normative reference for this requirement is TS 25.101 [1] clause 6.3.

5.3.3 Test purpose

To verify that the UE carrier frequency error does not exceed ± 0.1 ppm.

An excess error of the carrier frequency increases the transmission errors in the up link own channel.

This test verifies the ability of <u>the</u> receiver to derive correct frequency information for <u>the</u> transmitter, <u>when locked to</u> <u>the DL carrier frequency</u>.

5.3.4 Method of test

5.3.4.1 Initial conditions

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

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

- 1) Connect the SS to the UE antenna connector as shown in figure A.1.
- 2) A call is set up according to the Generic call setup procedure, and RF parameters (DPCH_Ec and Îor) are set up according to table 5.3. The relative power level of other downlink physical channels to the DPCH_Ec are set up according to clause E.3.1.
- 3) Enter the UE into loopback test mode and start the loopback test.

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

Table 5.3: Test parameters for Frequency Error

Parameter	Level / Status	Unit
DPCH_Ec	-117	dBm / 3,84 MHz
Î _{or}	-106,7	dBm / 3,84 MHz

5.3.4.2 Procedure

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

2) Measure the frequency error delta f, at the UE antenna connector by Tester using Global In-Channel-Tx-test (annex B). Since counter method leads an incorrect result, EVM method shall be used.

5.3.5 Test Requirements

For all measured bursts, the frequency error, derived in step 2), shall not exceed $\pm (0,1 \text{ ppm} + 10 \text{ Hz})$.

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

											CR-Form-v5
CHANGE REQUEST											
¥	34.12	<mark>1</mark> CR	152	жI	rev	-	ж	Current ver	sion:	3.8.0) ^ж
For <u>HELP</u> on u	sing this i	form, see	e bottom	of this pa	ge or	look a	at the	e pop-up tex	t over	rthe	ymbols.
Proposed change a	affects:	ሄ (U)	SIM	ME/UE	X	Radi	o Ac	cess Netwo	rk	Core N	Network
Title: ೫	Correct case	reportin	g of neig	hbours in	AWG	N pro	pag	ation conditi	ons –	Inter fre	quency
Source: ೫	T1-RF										
Work item code: Ж								Date: 🖁	€ <mark>23</mark>	<mark>/05/2002</mark>	
Category: ⊮	F Use <u>one</u> F (c A (c B (a C (f D (a be found	of the foll orrection, orrespon addition of unctional editorial m explanatio in 3GPP	owing cate ds to a co f feature), modification ons of the TR 21.900	egories: prrection in ion of featu n) above cate <u>2</u> .	an eai ire) egorie:	rlier rei s can	lease	Release: Use <u>one</u> o 2 (*) R96 R97 R98 R99 REL-4 REL-5	f the fo (GSI (Rela (Rela (Rela (Rela (Rela (Rela	99 M Phase 2 ease 1996 ease 1997 ease 1998 ease 1998 ease 1998 ease 4) ease 5)	eleases: 2) 5) 7) 3) 9)
Reason for change	Reason for change: # Test case description of 'Correct reporting of neighbours in AWGN propagation conditions – Inter frequency case' is missing in TS 34.121.										
Summary of chang	ye: ೫ Ac co	dition of nditions	test case – Inter fr	e 'Correct equency o	repor case'.	ting o	f nei	ghbours in a	AWGI	N propag	ation
Consequences if not approved:	₩ Te co inc	st case on nditions complete	descriptio – Inter fr	on of 'Corr equency of	rect re case' i	eportir is mis	ng of sing	neighbours in TS 34.12	in AV 1 and	VGN pro	pagation c remains
Clauses affected:	ж <mark>8.6</mark> .	2.1									
Other specs affected:	ж	Other co Test spe O&M Sp	ore speci ecification pecificatio	fications ns ons	ж						
Other comments:	ж										

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.
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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.

r) Test system shall verify that the UE transmit timing offset stays within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

8.5.1.5 Test requirements

- 1) In step a), d) and g), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- 2) In step j), the adjustment step size and adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- 3) In step k) and n), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- 4) In step q), the adjustment step size and adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- 5) In step r), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path 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.

8.6 UE Measurements Procedures

- 8.6.1 FDD intra frequency measurements
- 8.6.1.1 Event triggered reporting in AWGN propagation conditions

Void

8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition

Void

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

Void

8.6.1.4 Correct reporting of neighbours in fading propagation condition

Void

- 8.6.2 FDD inter frequency measurements
- 8.6.2.1 Correct reporting of neighbours in AWGN propagation condition

Void

8.6.2.1.1 Definition and applicability

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

The requirements and this test apply to the FDD UE.

8.6.2.1.2 Minimum requirements

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

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

A cell shall be considered detectable when CPICH Ec/Io > -20 dB, $SCH_Ec/Io > -17$ dB 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 $T_{\text{Measurement Inter}}$.

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

- <u> $T_{Measurement Period Inter} = 480 \text{ ms.}$ The period used for calculating the measurement period $T_{measurement inter}$ for inter frequency CPICH measurements.</u>
- $T_{Inter::}$ This is the minimum time that is available for inter frequency measurements, during the period $T_{Measurement Period inter}$ with an arbitrarily chosen timing. The minimum time per transmission gap is calculated by using the actual idle length within the transmission gap as given in the table 11 of Annex B in TS 25.212 and by assuming 2*0.5 ms for implementation margin and after that taking only full slots into account in the calculation.
- $T_{\text{basic_identify_FDD,inter}} = 800 \text{ ms.}$ 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.

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

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 Section 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

141

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 test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables 8.6.2.1.1 and 8.6.2.1.2 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 8.6.2.1.1: General test parameters for Correct reporting of neighbours in AWGN propagation condition

D ata and the s	11.14	M.L.	
Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel	As specified in C.3.1
		12.2 kbps	
Power Control		<u>On</u>	
Compressed mode		<u>C.5.2 set 2</u>	As specified in C.5.
Active cell		Cell 1	
Threshold non used	dB	-18	Absolute Ec/I0 threshold for event 2C
frequency			
Reporting range	<u>dB</u>	4	Applicable for event 1A
<u>Hysteresis</u>	<u>dB</u>	<u>0</u>	
W		1	Applicable for event 1A
W non-used frequency		1	Applicable for event 2C
Reporting deactivation		<u>0</u>	Applicable for event 1A
threshold			
Time to Trigger	ms	<u>0</u>	
Filter coefficient		<u>0</u>	
Monitored cell list size		24 on channel 1	Measurement control information is
		16 on channel 2	sent before the compressed mode
			pattern starts.
<u>T1</u>	<u>S</u>	<u>10</u>	
<u>T2</u>	S	5	

Table 8.6.2.1.2: Cell Specific parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter Parameter	<u>Unit</u>	Cell 1		<u>Cel</u>	l <u>2</u>	Cell 3		
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
UTRA RF Channel Number		<u>Cha</u>	Channel 1		Channel 1		Channel 2	
CPICH Ec/lor	<u>dB</u>	<u>-10</u>		<u>-10</u>		<u>-10</u>		
PCCPCH_Ec/lor	<u>dB</u>	<u>-12</u>		<u>-12</u>		<u>-12</u>		
SCH_Ec/lor	<u>dB</u>	<u>-12</u>		<u>-12</u>		<u>-12</u>		
PICH_Ec/lor	<u>dB</u>	<u>-15</u>		<u>-15</u>		<u>-15</u>		
DPCH_Ec/lor	<u>dB</u>	<u>-17</u>		<u>N/A</u>		<u>N/A</u>		
<u>OCNS</u>		<u>-1.049</u>		<u>-0.941</u>		<u>-0.941</u>		
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>0</u>	<u>4.39</u>	-Infinity	<u>2.39</u>	<u>-1.8</u>	<u>-1.8</u>	
I _{oc}	<u>dBm/3.84</u> <u>MHz</u>	<u>-70</u>				<u>-70</u>		
CPICH_Ec/lo	<u>dB</u>	<u>-13</u>	<u>-13</u>	<u>-Infinity</u>	<u>-15</u>	<u>-14</u>	<u>-14</u>	
Propagation Condition	AWGN							

8.6.2.1.4.2 Procedure

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

- 2) The UE is switched on.
- 3) A call is set up according to the 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 PHYSICAL CHANNEL RECONFIGURATION message.
- 6) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 7) 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 seconds.
- 8) After 10 seconds, the SS shall switch the power settings from T1 to T2.
- 9) SS shall transmit a MEASUREMENT CONTROL message (intra frequency).
- 10) 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 956.2 ms.
- 11) After 5 seconds, the UE is switched off.
- 12) Repeat steps 1-11 [50] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement:

Information Element	Value/Bomark
	Value/Remark
<u>Message Type</u>	
UE Information Elements	
-RRC transaction identifier	<u>0</u>
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	240 CFN
-New U-RNII	Not Present
-New C-RN11 DDC State Indicator	Not Present
<u>-RRC State Indicator</u>	<u>VetL_DCH</u>
<u>-OTRAN DRA cycle length coefficient</u>	Not Present
-CN Information info	Not Present
LITRAN mobility information elements	Not Tresent
-LIRA identity	Not Present
RB information elements	Not resent
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Erequency info	Not Present
Uplink radio resources	
-Maximum allowed UL_TX power	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Active
<u>-TGCFN</u>	Not Present
-Transmission gap pattern sequence	
configuration parameters	
<u> </u>	FDD measurement
<u>-TGPRC</u>	Not present
-IGSN	$\frac{4}{7}$
	<u>/</u> Not Dresert
	Not Present
	S Not Present
	Mode 0
	Mode 0
-CHOICE UL/DL mode	UL and DI
-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
<u>-T Reconfirm abort</u>	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Detault DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	500
<u>Choice mode</u>	
Primary OPICH INTO	100
-Filmary scrampling code	Not Present
	Not Present

Release 1999

-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	<u>0</u>
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	<u>64</u>
-Code number	<u>63</u>
-Scrambling code change	No code change
-TPC combination index	<u>0</u>
-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 into	Not Present					
Measurement Information elements	1					
-Measurement Command (10.2.7.46)	L Modify					
-Measurement Reporting Mode (10.3.7.49)	Modify					
-Measurement Report Transfer Mode	AMRIC					
-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)	Not Present					
<u>-Inter-frequency measurement quantity (10.3.7.18)</u>						
-Intra-frequency reporting criteria						
<u>-Intra-frequency measurement quantity (10.3.7.38)</u>	0					
-CHOICE mode						
-Measurement quantity	CPICH Ec/N0					
-Inter-frequency reporting criteria						
-Filter coefficient (10.3.7.9)	0					
-CHOICE mode	FDD					
-Measurement quantity for frequency quality estimate	CPICH_Ec/N0					
-Inter-frequency reporting quantity (10.3.7.21)						
<u>UTRA Carrier RSSI</u>	FALSE					
-Frequency quality estimate	FALSE					
-Non frequency related cell reporting quantities (10.3.7.5)	No report					
-Cell synchronisation information reporting indicator	TRUE (Note 1)					
-Cell Identity reporting indicator						
-CHOICE mode	FDD					
-CPICH Ec/N0 reporting indicator	TRUE					
-CPICH RSCP reporting indicator	TRUE					
-Pathloss reporting indicator	TRUE					
-Reporting cell status (10.3.7.61)						
-CHOICE reported cell	Report all active set cells + cells within					
	monitored set on used frequency					
-Maximum number of reported cells	2 Not Present					
<u>-Wedsurement validity (10.5.7.51)</u>	Inter frequency measurement reporting					
	criteria					
-Inter-frequency measurement reporting criteria (10.3.7.19)	onona					
-Parameters required for each event	1					
-Inter-frequency event identity	Event 2C					
-Threshold used frequency	Not present					
-W used frequency	Not present					
<u>-Hysteresis</u>	<u>0 dB</u>					
<u>-Time to trigger</u>	<u>0 ms</u>					
<u>-Reporting cell status</u>	Depart all active act calls + calls within					
	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 25.33	1, clause 10.3.7.6. According to TS 25.331,					
8.6.7.7, this IE is included in MEASUREMENT REPO	RT if IE "Cell synchronisation information					
reporting indicator in IE "Cell reporting quantities" IS	25.331, clause 10.3.7.5 is set to TRUE in					
MEASUREMENT CONTROL.						

146

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	<u>0</u>
-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)	
<u>-Intra-frequency measurement objects list (10.3.7.33)</u>	Not Present
<u>-Intra-frequency measurement quantity (10.3.7.38)</u>	
-Filter coefficient (10.3.7.9)	
<u>-CHOICE mode</u>	FDD
-Measurement quantity	CPICH_EC/NU
-intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	Manual Annual
-SEN-SEN observed time difference reporting indicator	TDUE (Note 1)
Cell Identity reporting indicator	
CPICH Ex/N0 reporting indicator	
CPICH EC/NO reporting indicator	
-CFICITINGCE TEPOTIINg Indicator	
-Reporting quantities for monitored set cells (10.3.7.5)	
-SEN-SEN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	3
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
	<u>criteria</u>
-Intra-frequency measurement reporting criteria (10.3.7.39)	
<u>-Parameters required for each event</u>	<u>1</u>
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Active set cells and monitored set cells
-Reporting Range Constant	<u>4 dB</u>
-Cells forbidden to affect Reporting Range	Not Present
<u>-CHOICE mode</u>	FDD
-Primary CPICH info (10.3.6.60)	
<u>W</u>	<u>1.0</u>
<u>-riysteresis</u>	U OB Not Present
- Intestiola used inequency Reporting departituation threshold	
-reporting deactivation threshold Repleasement activation threshold	U Not Present
Time to trigger	0 mg
-Amount of reporting	
-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

	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 25.33	1, clause 10.3.7.6. According to TS 25.331,
	8.6.7.7, this IE is included in MEASUREMENT REPO	RT 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 reportir	na

MEASUREMENT REPORT message for Inter frequency test cases

MEASUREMENT REPORT message for Intra frequency test cases

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

8.6.2.1.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, with a confidence level of [FFS]% of the cases.

<u>Note:</u> 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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¥	34.12	21 CR 1	153	жrе	• V -	ж	Current vers	sion: 3.8	.0 ^ж
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Source: ೫	T1-RF								
Work item code: ೫							<i>Date:</i>	23/05/20	02
Category: # F Release: # R99 Use one of the following categories: Use one of the following releases: F (correction) 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can be found in 3GPP TR 21.900. REL-5 (Release 5)								y releases: e 2) 996) 997) 998) 999)	
Reason for change	Reason for change: # Test case description of 'Correct reporting of neighbours in Fading propagation conditions – Inter frequency case' has been removed from 25.133 (doc. R4-020563)								ropagation oc. R4-
Summary of change: # Removal of test case 'Correct reporting of neighbours in Fading propagation conditions – Inter frequency case'.							agation		
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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6.2.2 Correct reporting of neighbours in Fading propagation condition

Void

8.6.3 TDD measurements

8.6.3.1 Correct reporting of TDD neighbours in AWGN propagation condition

Void

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 \geq -114 dBm.

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

Table 8.7.1.1.1.1: CPICH_RSCP Intra frequency absolute accuracy

		Accur	acy [dB]	Conditions
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dBm	±6	±9	-9470
	dBm	±8	±11	-7050

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.1 and A.9.1.1.2.

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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.

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 significant path of the corresponding downlink DPCCH/DPDCH frame. 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 significant path of the corresponding downlink DPCCH/DPDCH frame is received plus T₀ chips. T₀ is defined in TS25.211 [19].

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 ¹/₄ chip per 200_ms. In particular, within any given $\frac{200-800*d}{200ms}$ ms period, the UE transmit timing shall not change in excess of $\frac{\pm 1/4}{\pm 1/4}$ chip from the timing at the beginning of this $\frac{200ms}{800*d}$ ms period, where $0 \le d \le 1/4$.

The normative reference for this requirement is TS 25.133 [2] clause 7.1.2.

8.5.1.3 Test purpose

The purpose of this test is to verify that the UE initial transmit timing accuracy, maximum amount of timing change in one adjustment, minimum and maximum adjustment rate are within the limits specified in 8.5.1.2.

8.5.1.4 Method of test

8.5.1.4.1 Initial conditions

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

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

For this test, two cells on the same frequency are used.

- 1) Connect the test system to the UE antenna connector as shown in figure A.1.
- 2) A call is set up with Cell 1 according to the Generic call setup procedure. The test parameters are set up according to table 8.5.1.1.

Parameter	Unit	Level
DPCH_Ec/ lor, Cell 1 and Cell 2	dB	-17
CPICH_Ec/ lor, Cell 1 and Cell 2	dB	-10
PCCPH_Ec/ lor, Cell 1 and Cell 2	dB	-12
SCH_Ec/ lor, Cell 1 and Cell 2	dB	-12
PICH_Ec/ lor, Cell 1 and Cell 2	dB	-15
OCNS_Ec/ lor, Cell 1 and Cell 2	dB	-1.05
Î _{or,} Cell 1	dBm/3.84 MHz	-96
Î _{or,} Cell 2	dBm/3.84 MHz	-99
Information data rate	kbps	12.2
Relative delay of path received from cell	μs	+/-2
2 with respect to cell 1		
Propagation condition	A	WGN

Table 8.5.1.1: Test parameters for UE Transmit Timing requirements

8.5.1.4.2 Procedure

- a) After a connection is set up with cell 1, the test system shall verify that the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- b) Test system introduces cell 2 into the test system at delay +2 μ s from cell 1.
- c) Test system verifies that cell 2 is added to the active set.
- d) Test system shall verify that the UE transmit timing offset is still within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- e) Test system switches Tx timing of cell 2 to a delay of $-2 \,\mu s$ with respect to cell 1.
- f) Test system verifies cell 2 remains in the active set.
- g) Test system shall verify that the UE transmit timing offset is still within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- h) Test system stops sending cell 1 signals.
- i) Test system verifies that the UE does not start to adjust its Tx timing to cell 2 before it receives an active set update message notifying the UE that cell 1 is deleted from the active set.
- j) Test system verifies that UE transmit timing adjustment starts with an adjustment step size and an adjustment rate according to the requirements in section 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- k) Test system shall verify that the UE transmit timing offset stays within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- 1) Test system starts sending cell 1 signal again with its original timing.
- m) Test system verifies that cell 1 is added to the active set.
- n) Test system verifies that the UE transmit timing is still within $T_0 \pm 1.5$ chips with respect to the first significant path of the downlink DPCCH/DPDCH of cell 2.
- o) Test system stops sending cell 2 signals.
- p) Test system verifies that the UE does not start to adjust its Tx timing to cell 1 before it receives an active set update message notifying the UE that cell 2 shall be deleted from the active set.
- q) Test system verifies that UE transmit timing adjustment starts with an adjustment step size and an adjustment rate according to the requirements in section 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

r) Test system shall verify that the UE transmit timing offset stays within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

8.5.1.5 Test requirements

- 1) In step a), d) and g), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- 2) In step j), the adjustment step size and adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- 3) In step k) and n), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- 4) In step q), the adjustment step size and adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- 5) In step r), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path 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.

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Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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 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:

- <u>CPICH_RSCP1|_dBm \geq -114 dBm CPICH_RSCP1 \geq 114 dBm.</u>

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

Table 8.7.1.1.1.1: CPICH_RSCP Intra frequency absolute accuracy

		Accur	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dBm	±6	±9	-9470
	dBm	±8	±11	-7050

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.

8.7.1.1.4.1 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.

141

Paramotor	Unit	Tes	st 1	Tes	st 2	Tes	st 3
Falameter	Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Chan	Channel 1		Channel 1		inel 1
CPICH_Ec/lor	dB	-1	0	-10		-10	
PCCPCH_Ec/lor	dB	-1	2	-12		-1	2
SCH_Ec/lor	dB	-1	2	-12		-1	2
PICH_Ec/lor	dB	-15		-15		-15	
DPCH_Ec/lor	dB	-15	-	-15	-	-15	-
OCNS_Ec/lor	dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
loc	dBm/ 3.84 MHz	-75	.54	-59.98		-97.52	
Îor/loc	dB	4	0	9	0	0	-6.53
CPICH RSCP, Note 1	dBm	-81.5	-85.5	-60.98	-69.88	-107.5	-114.0
lo, Note 1	dBm/3.84 MHz	-6	9	-5	50	-9)4
Propagation condition	-	AW	GN	AW	GN	AW	'GN
NOTE 1: CPICH RSCP and lo 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.							

 Table 8.7.1.1.1.2: CPICH RSCP Intra frequency test parameters

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 8.7.1.1.1.2.

8.7.1.1.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check CPICH_RSCP value in MEASUREMENT REPORT messages. CPICH RSCP power of Cell 1 reported by UE is compared to actual CPICH RSCP power for each MEASUREMENT REPORT message.
- 4) 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 8.7.1.1.1.2 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 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 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 3) above is repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], 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	0
-Integrity check into	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Intra-frequency measurement	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	
-CHOICE mode	
-Measurement quantity	CPICH RSCP
-Intra-trequency reporting quantity	
-Reporting quantities for active set cells	
-SEN-SEN observed time difference reporting	No non ort
	No report
-Cell synchronisation information reporting	TRUE
Indicator	
-CHOICE mode	
-CPICH EC/NU reporting indicator	
-CPICH RSCP reporting indicator	
-Pathoss reporting indicator	IRUE
-Reporting quantities for monitored set cells	No report
-SFN-SFN Observed time difference reporting	потероп
Coll aurophronication information reporting	
-Cell Synchronisation mormation reporting	FALSE
Coll Identity reporting indicator	TRUE
CRICH Ec/NO reporting indicator	
CPICH PSCP reporting indicator	
-Detabless reporting indicator	
-Reporting quantities for detected set cells	Not Present
-Reporting quantities for detected set cells	Not riesent
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
Maximum number of reported cells	
-Maximum number of reported cens	Z Not Present
	Periodical reporting criteria
-Amount of reporting	
-Reporting interval	250 ms
-Measurement Reporting Mode	200 110
-Measurement Report Transfer Mode	
-Measurement Report Transfer Mode	Periodical reporting
-Additional measurements list	Not Present
Dhysical channel information elemente	
-DPCH compressed mode status info	Not Present
- or on compressed mode status into	

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

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.1.2.

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

- <u>CPICH_RSCP1,2_{dBm} \geq -114 dBmCPICH_RSCP1,2 \geq 114 dBm.</u>

$$\frac{|CPICH _RSCP1|_{in \, dBm} - CPICH _RSCP2|_{in \, dBm}| \le 20 dB}{|CPICH _RSCP1|_{in \, dB} - CPICH _RSCP2|_{in \, dB}| \le 20 dB}$$

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

Table 8.7.1.1.2.1: CPICH_RSCP Intra frequency relative accuracy

		Accuracy [dB]		Conditions
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
CPICH_RSCP	dBm	±3	±3	-9450

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.

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 8.7.1.1.1.2.

8.7.1.1.2.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) 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.
- 4) The result of step 3) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.
- 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 8.7.1.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 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, steps 3) and 4) above are 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] and in Annex A of 34.123-1 [21], 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

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.2.2.

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.

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:

Release 1999

- <u>CPICH_RSCP1,2|_dBm</u> \geq -114 dBm<u>CPICH_RSCP1,2 \geq 114 dBm</u>.

$$\frac{|CPICH _RSCP1|_{in \, dBm} - CPICH _RSCP2|_{in \, dBm}| \le 20 dB}{|CPICH _RSCP1|_{in \, dB} - CPICH _RSCP2|_{in \, dB}| \le 20 dB}.$$

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

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

Table 8.7.1.2.1.1: CPICH_RSCP Inter frequency relative accuracy

		Accur	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
CPICH_RSCP	dBm	±6	±6	-9450

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 [14 slots is FFS]. CPICH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2.1.2.

Deremeter	l Init	Tes	st 1	Te	st 2	
Parameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	
CPICH_Ec/lor	dB	-1	0	-*	10	
PCCPCH_Ec/lor	dB	-1	2	-1	12	
SCH_Ec/lor	dB	-1	2	-*	12	
PICH_Ec/lor	dB	-1	5	-*	15	
DPCH_Ec/lor	dB	-15	-	-15	-	
OCNS_Ec/lor	dB	-1.11	-0.94	-1.11	-0.94	
loc	dBm/ 3.84 MHz	-60.00	-60.00	-84.00	-94.46	
Îor/loc	dB	9.54	9.54	0	-9.54	
CPICH RSCP, Note 1	dBm	-60.46	-60.46	-94.0	-114.0	
lo, Note 1	dBm/3.84 MHz	-50.00	-50.00	-81.0	-94.0	
Propagation condition	-	AWGN AWGN				
NOTE 1: CPICH RSCP and lo 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.						

Table 8.7.1.2.1.2: CPICH RSCP Inter frequency tests parameters

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 8.7.1.2.1.2.

8.7.1.2.1.4.2 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 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.
- 6) The result of step 5) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.
- 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 8.7.1.2.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 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] and in Annex A of 34.123-1 [21], with the following exceptions:

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

Information Flement	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	U Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
	240 CEN
-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	Net Dresent
-Downlink counter synchronisation info	Not Present
	Not Present
-Maximum allowed UI_TX power	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
- I ransmission gap pattern sequence	
-TGPSI	1 Active
-TGCEN	Not Present
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	FDD measurement
-TGPRC	Not present
-TGSN	4
-TGL1	7
-IGL2	Not Present
-IGD TGPL1	
-TGPL1	3 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
-DeltaSIRatter1	3.0 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	
-Unoice mode	עט א
-Frimary CFICE INIO	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	0
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	64
-Code number	63
-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 Floment	Value/Domork
Information Element	value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Inter-frequency measurement	
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	
-Remove all inter-frequency cells	Not Present
-Remove some inter-frequency cells	Not Present
-Removed inter-frequency cells	
-Inter-frequency cell id	
-No inter-frequency cells removed	Not Present
-New inter-frequency cells	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
 Measurement quantity for frequency quality 	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-SFN-SFN observed time difference reporting	No report
indicator	
-Cell synchronisation information reporting	IRUE
indicator	
-Cell Identity reporting indicator	IRUE
-CHOICE mode	
-CPICH EC/NU reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathoss reporting indicator	IRUE
CHOICE reported coll	Poport all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	
-Measurement validity	And Present
-Inter-frequency set undate	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	Acknowledged mode RI C
-Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurements list	Not Present
Physical channel information elements	
-DPCH compressed mode status info	
-TGPS reconfiguration CFN	240
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Active
-TGCFN	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

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2.1.2.

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

8.7.2 CPICH Ec/lo

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:

- <u>CPICH RSCP1_{dBm} \geq -114 dBm CPICH_RSCP1 \geq -114 dBm.</u>

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

Table 8.7.2.1.1.1: CPICH_Ec/lo Intra frequency absolute accuracy

		Accuracy [dB]	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
CPICH_Ec/lo	dB	\pm 1,5 for -14 \leq CPICH Ec/lo \pm 2 for -16 \leq CPICH Ec/lo < -14 \pm 3 for -20 \leq CPICH Ec/lo < -16	±3	-9450

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.

Parameter	Unit	Test 1		Test 2		Test 3		
Farameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Channel number		Char	inel 1 Cha		nnel 1	Channel 1		
CPICH_Ec/lor	dB	-10		-10		-10		
PCCPCH_Ec/lor	dB	-1	-12		-12		-12	
SCH_Ec/lor	dB	-12		-12		-12		
PICH_Ec/lor	dB	-15		-15		-15		
DPCH_Ec/lor	dB	-15	-	-15	-	-6	-	
OCNS_Ec/lor	dB	-1.11	-0.94	-1.11	-0.94	.2.56	-0.94	
loc	dBm/ 3.84 MHz	-56.98		-89.07		-94.98		
Îor/loc	dB	3.0	3.0	-2.9	-2.9	-9.0	-9.0	
CPICH Ec/lo, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0	
lo, Note 1	dBm/3.84 MHz	-50 -86 -94				94		
Propagation condition	- AWGN AWGN AWGN						GN	
NOTE 1: CPICH Ec/lo and lo 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.								

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 8.7.2.1.1.2.

8.7.2.1.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) 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.
- 4) 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 8.7.2.1.1.2 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 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.2 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 3) above is repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Reported value	Measured quantity value	Unit
CPICH_Ec/No _00	CPICH Ec/lo < -24	dB
CPICH_Ec/No _01	-24 ≤ CPICH Ec/lo < -23.5	dB
CPICH_Ec/No _02	-23.5 ≤ CPICH Ec/lo < -23	dB
CPICH_Ec/No _47	-1 ≤ CPICH Ec/lo < -0.5	dB
CPICH_Ec/No _48	-0.5 ≤ CPICH Ec/lo < 0	dB
CPICH_Ec/No _49	0 ≤ CPICH Ec/lo	dB

Table 8.7.2.1.1.3: CPICH Ec/lo measurement report mapping

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] and in Annex A of 34.123-1 [21], 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	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Intra-frequency measurement	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-SEN-SEN observed time difference reporting	
indicator	No report
-Cell synchronisation information reporting	
Indicator	TRUE
-CHOICE mode	
-CPICH EC/NU reporting indicator	
-CPICH RSCP reporting indicator	
-Pathoss reporting indicator	IRUE
-Reporting quantities for monitored set cells	No report
-SFN-SFN Observed time difference reporting	No report
Coll 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	2
-Measurement validity	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	-
-Additional measurements list	Not Present
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) 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.

		Accuracy [dB]	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
CPICH_Ec/lo	dP	-2.71.5 for -14 ≤ CPICH Ec/lo -3.22 for -16 ≤ CPICH Ec/lo < -14 -4.23 for -20 ≤ CPICH Ec/lo < -16	-4.23	-9487
	aв	\pm 1.5 for -14 \leq CPICH Ec/lo \pm 2 for -16 \leq CPICH Ec/lo < -14 \pm 3 for -20 \leq CPICH Ec/lo < -16	± 3	-8750

Table 8.7.2.1.1.4: CPICH_Ec/lo Intra frequency absolute accuracy

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

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.

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:

- <u>CPICH_RSCP1,2]_{dBm} \geq -114 dBm<u>CPICH_RSCP1,2 \geq 114 dBm</u>.</u>

$$\begin{aligned} & \left| CPICH _RSCP1 \right|_{in \, dBm} - CPICH _RSCP2 \right|_{in \, dBm} \right| \le 20 dB \\ & \left| CPICH _RSCP1 \right|_{in \, dB} - CPICH _RSCP2 \right|_{in \, dB} \right| \le 20 dB. \\ - \left. \frac{I_o}{\left(\hat{I}_{or}\right)} \right|_{in \, dB} - \left(\frac{CPICH _E_c}{I_{or}} \right)_{in \, dB} \le 20 dB. \end{aligned}$$

Table 8.7.2.1.2.1: CPICH_Ec/lo Intra frequency relative accuracy

		Accuracy [dB	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dB	\pm 1,5 for -14 \leq CPICH Ec/lo		-9450
CPICH_Ec/lo		± 2 for -16 \leq CPICH Ec/lo < -14	±3	
		± 3 for $-20 \le CPICH Ec/lo < -16$		

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.

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 8.7.2.1.1.2.

8.7.2.1.2.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) 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.
- 4) The result of step 3) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
- 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 8.7.2.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.2 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 from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are 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] and in Annex A of 34.123-1 [21], 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

The CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.1.2.2.

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.

155

8.7.2.2	Inter frequency measurement accuracy
8.7.2.2.1	Absolute accuracy requirement
[TBD]	

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:

- <u>CPICH RSCP1,2</u>_{dBm} \geq -114 dBm <u>CPICH_RSCP1,2</u> \geq -114 dBm.

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

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

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

Table 8.7.2.2.2.1: CPICH_Ec/lo Inter frequency relative accuracy

		Accuracy [dB	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dB	± 1.5 for -14 \leq CPICH Ec/lo		-9450
CPICH_Ec/lo		± 2 for -16 \leq CPICH Ec/lo < -14	±3	
		± 3 for -20 \leq CPICH Ec/lo < -16		

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. 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 [14 slots is FFS]. CPICH Ec/Io inter frequency relative accuracy requirements are tested by using test parameters in Table 8.7.2.2.2.2.

Parameter	Unit	Test 1		Test 2		Test 3	
Farameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
number		0.10.10	0.100.100.2	0.10.1101	0.100.00	0.10.100	0.10.10.2
CPICH_Ec/lor	dB	-1	10	-1	10	-1	10
PCCPCH_Ec/lor	dB	-1	12	-1	12	-1	2
SCH_Ec/lor	dB	-1	12	-1	12	-1	2
PICH_Ec/lor	dB	-1	15	-1	15	-1	15
DPCH_Ec/lor	dB	-15	-	-6	-	-6	-
OCNS_Ec/lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
loc	dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	-94.46	-94.46
Îor/loc	dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/lo, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
lo, Note 1	dBm/3.84 MHz	-50	-50	-86	-86	-94	-94
Propagation condition	-	AWGN AWGN AWGN					
NOTE 1: CPICH Ec/lo and lo 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.							

Table 8.7.2.2.2.2: CPICH Ec/lo Inter frequency tests parameters

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 8.7.2.2.2.2.

8.7.2.2.2.4.2 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 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.
- 6) The result of step 5) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
- 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 8.7.2.2.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 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 8.7.2.2.2.2 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, steps 5) and 6) above are repeated.
- 8) After 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] and in Annex A of 34.123-1 [21], with the following exceptions:

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

Information Flement	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	U Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
	240 CEN
-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	Net Dresent
-Downlink counter synchronisation info	Not Present
	Not Present
-Maximum allowed UI_TX power	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
- I ransmission gap pattern sequence	
-TGPSI	1 Active
-TGCEN	Not Present
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	FDD measurement
-TGPRC	Not present
-TGSN	4
-TGL1	7
-IGL2	Not Present
-IGD TGPL1	
-TGPL1	3 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
-DeltaSIRatter1	3.0 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	
-Unoice mode	עט א
-Frimary CFICE INIO	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	0
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	64
-Code number	63
-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):

Message Type Value/Remark UE information elements -RRC transaction identifier -Interfrity check info 0 -Integrity check info Not Present Measurement Information elements 0 -Measurement Information elements 1 -Measurement Information elements 1 -Measurement Information elements 1 -Measurement Command Inter-frequency cells -Inter-frequency cell info list Not Present -Remove and linter-frequency cells Not Present -New inter-frequency cells Not Present -No inter-frequency cells Not Present -No inter-frequency cells Not Present -No inter-frequency cells Not Present -Remove and upanity for frequency quality 1 -Heasurement quantity for frequency quality Inter-frequency reporting criteria -Filter coefficient 0 -CHOICE mode PD -Measurement quantity for frequency quality TRUE -Inter-frequency reporting quantities SFN-SFN observed time difference reporting -Cell identity reporting indicator TRUE -CHOICE mode	Information Flowant	Value/Demortz
IMessage Type 0 -Integrity check info Not Present Measurement Information elements 1 -Measurement Information elements 1 -Measurement Information elements 1 -Measurement Information elements 1 -Measurement Command 1 -Inter-frequency cell info list 1 -CHOICE Inter-frequency cells Not Present -Remove some inter-frequency cells Not Present -Inter-frequency cells Not Present -Inter-frequency cells Not Present -Inter-frequency cells Not Present -New inter-frequency reporting quantity Inter-frequency reporting criteria -CHOICE mode FDD -Measurement quantity for frequency quality TRUE -Frequency quality estimate TRUE -Inter-frequency reporting quantities SFN-SFN observed time difference reporting indicator -Cell dentity reporting indicator		value/Remark
Ub: information elements 0 -RRC transaction identifier 0 Measurement Information elements 1 -Measurement Identify 1 -Inter-frequency cell info list -CHOICE Inter-frequency cell removal -Remove all inter-frequency cells Not Present -Remove all inter-frequency cells Not Present -Remove all inter-frequency cells Not Present -No inter-frequency cells Not Present -No inter-frequency cells Not Present -New inter-frequency cells Not Present -New inter-frequency cells Not Present -Inter-frequency measurement Not Present -Inter-frequency measurement Not Present -Inter-frequency eporting criteria 0 -Filter coefficient 0 -OHOICE mode FDD -Inter-frequency quality TRUE -Inter-frequency reporting quantities SFN-SFN observed time difference reporting indicator -Cell dentity reporting indicator -CHOICE mode FDD -CPICH RSCP reporting indicator TRUE -CPICH RSCP reporting indicator TRUE -CHOICE	Message Type	
RRC transaction identifier 0 -Integrity check info Not Present Measurement Information elements 1 -Measurement Command 1 -Inter-frequency cell information elements 1 -Measurement Command Modify -Inter-frequency cell information elements 1 -Measurement Command Modify -Inter-frequency cell information elements Not Present -Remove all inter-frequency cells Not Present -Remove some inter-frequency cells Not Present -No inter-frequency cells removed Not Present -No inter-frequency cells removed Not Present -New inter-frequency cells removed Not Present -New inter-frequency cells removed Not Present -Neasurement quantity -CHOICE reporting criteria -Frequency reporting quantity Inter-frequency reporting criteria -Hiter-frequency reporting quantity TRUE -Inter-frequency reporting quantities SFN-SFN observed time difference reporting indicator -Cell dentity reporting indicator TRUE -OHOICE mode FDD -CHOICE mode	UE information elements	
-Integrity Creck into Not Present Measurement Information elements 1 -Measurement Identity 1 -Inter-frequency cells Modify -Inter-frequency cell info list Modify -Inter-frequency cell info list Not Present -Remove all inter-frequency cells Not Present -Remove di inter-frequency cells Not Present -No inter-frequency cells Not Present -New inter-frequency cells Not Present -No inter-frequency cells Not Present -No inter-frequency cells Not Present -No inter-frequency cells Not Present -Cell for measurement Unter-frequency reporting criteria -Filter coefficient 0 -CHOICE mode FDD -Inter-frequency reporting quantity CPICH RSCP -Frequency quality estimate TRUE -Inter-frequency reporting indicator TRUE -Cell Identity reporting indicator TRUE -Cell Kercy reporting indicator TRUE -CPICH Ec/No reporting indicator TRUE -CHOICE reported cell Report all active set cells + cells within monitored set on used frequency	-RRC transaction identifier	
Measurement Identity 1 -Measurement Identity 1 -Measurement Identity 1 -Inter-frequency cell info list . -Inter-frequency cell info list . -Remove all inter-frequency cells Not Present -Remove some inter-frequency cells Not Present -No inter-frequency cells Not Present -New inter-frequency cells Not Present -New inter-frequency cells Not Present -New inter-frequency cells Not Present -No inter-frequency cells Not Present -No inter-frequency measurement quantity . -CHOICE reporting criteria . -Inter-frequency reporting quantity . -CHOICE mode FDD -Measurement quantity for frequency quality CPICH RSCP -Inter-frequency reporting quantities . -SFN-SFN observed time difference reporting . indicator . -Cell loentity reporting indicator . -CHOICE mode . -CPICH Ex/No reporting indicator . -CHOICE mode . -CHOICE mode cell <td< td=""><td>-Integrity check info</td><td>Not Present</td></td<>	-Integrity check info	Not Present
-Measurement (dentity 1 -Measurement Command Modify -Inter-frequency measurement Inter-frequency measurement -Inter-frequency cell info list Not Present -Remove all inter-frequency cells Not Present -Remove dinter-frequency cells Not Present -Remove dinter-frequency cells Not Present -New inter-frequency cells Not Present -New inter-frequency cells Not Present -New inter-frequency cells Not Present -Inter-frequency measurement quantity -Cell for measurement -Filter coefficient 0 -Filter coefficient 0 -Measurement quantity for frequency quality TRUE -Inter-frequency reporting quantity TRUE -Inter-frequency reporting quantities -SFN-SFN observed time difference reporting -Sell synchronisation information reporting TRUE -Cell dentity reporting indicator TRUE -Cell dentity reporting indicator TRUE -CPICH Ec/N0 reporting indicator TRUE -Pathoss reporting indicator TRUE -Reporting cell status CHOICE reporte cell -Maximum number o	Measurement Information elements	
-Measurement Command Modify -Inter-frequency measurement -Inter-frequency cell removal -Remove all inter-frequency cells Not Present -Remove some inter-frequency cells Not Present -Remove di inter-frequency cells Not Present -No inter-frequency cells Not Present -New inter-frequency cells Not Present -Cell for measurement Not Present -Cell for measurement quantity -CHOICE reporting criteria -Filter coefficient 0 -CHOICE mode FDD -Measurement quantity for frequency quality CPICH RSCP -Inter-frequency reporting quantities SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator TRUE -CPICH RSCP reporting indicator TRUE -Reporting cell status CPICH RSCP reporting indicator -Pathloss reporting indicator TRUE -Reporting cell status CPICH RSCP reporting indicator -Reporting cell status CPICH CE report cel	-Measurement Identity	1
-Inter-frequency cell removal -Remove all inter-frequency cells -Remove all inter-frequency cells -Remove dinter-frequency cells -Inter-frequency cells -No inter-frequency cells -No inter-frequency cells -New inter-frequency cells -No inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE mode -Measurement quantity for frequency quality estimate -Inter-frequency reporting quantities -SFN-SFN observed time difference reporting indicator -Cell loentity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Par	-Measurement Command	Modify
-Inter-frequency cell into list -CHOICE Inter-frequency cells -Remove all inter-frequency cells -Remove some inter-frequency cells -Remove dinter-frequency cells -No inter-frequency cells removed -No inter-frequency cells -No inter-frequency cells removed -No inter-frequency cells removed -No inter-frequency cells -Not present -Cell for measurement -Inter-frequency reporting criteria -Filter coefficient -CHOICE mode -Inter-frequency reporting quantity -UTRA Carrier RSSI -Frequency quality estimate -Non frequency reporting indicator -Cell Identity reporting indicator -Cell Identity reporting indicator -CPICH RSCP reporting indicator -CP	-Inter-frequency measurement	
-CHOICE Inter-frequency cells Not Present -Remove all inter-frequency cells Not Present -Removed inter-frequency cells Not Present -Inter-frequency cells Not Present -No inter-frequency cells Not Present -Ocell for measurement Not Present -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient Inter-frequency reporting criteria -Filter coefficient 0 -CHOICE mode FDD -Masurement quantity for frequency quality CPICH RSCP estimate -Inter-frequency reporting quantities -SFN-SFN observed time difference reporting Intelement -Cell Identity reporting indicator TRUE -CHOICE mode FDD -Cell Identity reporting indicator TRUE -CHOICE mode FDD -CHOICE mode TRUE -CHOICE mode FDD -CHOICE mode TRUE -CHOICE mode TRUE -CHOICE mode TRUE -CHOICE mode FDD -CHOICE mode TRUE -CHOICE mode FDD	-Inter-frequency cell into list	
- Remove all inter-frequency cells Not Present - Remove dinter-frequency cells Not Present - Inter-frequency cells Not Present - Now inter-frequency cells Not Present - Now inter-frequency cells Not Present - New inter-frequency cells Not Present - New inter-frequency cells Not Present - New inter-frequency cells Not Present - Cell for measurement quantity -CHOICE reporting criteria - Filter coefficient 0 - CHOICE mode FDD - Measurement quantity for frequency quality CPICH RSCP - Inter-frequency reporting quantities SFN-SFN observed time difference reporting - Frequency quality estimate TRUE - Non frequency reporting indicator TRUE - Cell ldentity reporting indicator TRUE - CHOICE mode FDD - CHOICE reporting indicator TRUE <t< td=""><td>-CHOICE Inter-frequency cell removal</td><td></td></t<>	-CHOICE Inter-frequency cell removal	
-Remove some inter-frequency cells Not Present -Removed inter-frequency cells removed Not Present -No inter-frequency cells removed Not Present -No inter-frequency cells removed Not Present -No inter-frequency cells Not Present -Cell for measurement Not Present -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient 0 -CHOICE mode FDD -Inter-frequency reporting quantity CPICH RSCP -Inter-frequency reporting quantities TRUE -SFN-SFN observed time difference reporting No report indicator -Cell lotnity reporting indicator TRUE -CHOICE mode FDD CPICH RSCP -CHOICE mode FDD Report -SFN-SFN observed time difference reporting No report indicator -Cell Identity reporting indicator TRUE -CHOICE mode FDD TRUE -CPICH RSCP reporting indicator TRUE TRUE -Pathloss reporting indicator TRUE TRUE -Reporting cell status -CHOICE reported cell Report all active set cells + cells	-Remove all inter-frequency cells	Not Present
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-CHOICE report criteria Periodical reporting criteria	-iviedSurement validity	Not Present
-CHOICE report citiena	CHOICE report criteria	Not Flesell Deriodical reporting criteria
Amount of reporting	Amount of roporting	Infinity
Properting financial 500 mg	Poporting interval	500 mc
- Reputing interval Souths	Measurement Reporting Mode	500 ms
-weasurement Papert Transfer Mede	Measurement Report Transfer Mode	Acknowledged mode PLC
Principal Princi	Poriodical Poporting / Evont Trigger Poporting	Poriodical reporting
Mode		renouical reporting
-Additional measurements list Not Present	-Additional measurements list	Not Present
Physical channel information elements	Physical channel information elements	Not i leselli
- DPCH compressed mode status info	-DPCH compressed mode status info	
TGPS reconfiguration CEN 240	-TGPS reconfiguration CEN	240
Transmission can pattern sequence	-Transmission dan nattern sequence	
		1
-TGPS Status Flag	-TGPS Status Flag	Active
-TGCEN Not present	-TGCEN	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 CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.2.2.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) 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.

		Accuracy [dB] Cond		
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
		-2.71.5 for -14 ≤ CPICH Ec/lo -3.22 for -16 ≤ CPICH Ec/lo < -14 -4.23 for -20 ≤ CPICH Ec/lo < -16	-4.23	-9487
CPICH_Ec/lo	dB	\pm 1.5 for -14 \leq CPICH Ec/lo \pm 2 for -16 \leq CPICH Ec/lo < -14 \pm 3 for -20 \leq CPICH Ec/lo < -16	± 3	-8750

Table 8.7.2.2.2.3: CPICH	_Ec/lo Inter fre	equency relative
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The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

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.

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

		Accura	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
LITDA Corrier DCCI	dBm	± 4	± 7	-9470
UTRA Camer KSSI	dBm	± 6	± 9	-7050

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 [14 slots is FFS]. UTRA Carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.3.1.2.

Paramotor	Unit	Test 1		Test 2		Test 3	
Faranieler	Unit	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/lor	dB	-1	0	-1	0	-10	
PCCPCH_Ec/lor	dB	-1	2	-1	2	-1	2
SCH_Ec/lor	dB	-1	2	-1	2	-1	2
PICH_Ec/lor	dB	-1	5	-1	5	-1	5
DPCH_Ec/lor	dB	-15	-	-6	-	-6	-
OCNS_Ec/lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
loc	dBm/ 3.84 MHz	-52.22	-52.22	-70.27	-70.27	-94.46	-94.46
Îor/loc	dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/lo, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
Io, Note 1	dBm/3.84 MHz	-50	-50	-69	-69	-94	-94
Propagation condition	- AWGN AWGN AWGN						
NOTE 1: CPICH Ec/lo and lo 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.							

Table 8.7.3.1.2: UTRA Carrier RSSI Inter frequency test parameters

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.

8.7.3.1.4.2 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 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.
- 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 8.7.3.1.2 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 5) 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 5) above is 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 default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

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

Information Element	Value/Remark
Message Type	
UE Information Elements	0
	U Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	240 CFN
-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	Not Descent
-URA identity	Not Present
RD Information elements	Not Procent
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
	1
-TGPS Status Flag	Active
-TGCFN	Not Present
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	FDD measurement
-TGPRC	Not present
-TGSN	4
-IGL1	7
-IGL2	Not Present
-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
	3.0
-DeltaSIRatter1	3.0 Not Procent
-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	
-Unoice mode Primary CPICH info	עטז
-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	0
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	64
-Code number	63
-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 Floment	Value/Bemerk
Information Element	value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Inter-frequency measurement	
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	
-Remove all inter-frequency cells	Not Present
-Remove some inter-frequency cells	Not Present
-Removed inter-frequency cells	
-Inter-frequency cell id	
-No inter-frequency cells removed	Not Present
-New inter-frequency cells	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
Monocurement quantity for frequency quality	
estimate	CFICITINGEF
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-SFN-SFN observed time difference reporting	Type 1
indicator	
-Cell synchronisation information reporting	TRUE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	IRUE
-Pathloss reporting indicator	IRUE
-Reporting cell status	Depart all active act calls y calls within
	Report all active set cells + cells within
Maximum number of reported calls	monitored set on used frequency
-Measurement validity	A Not Present
-Inter-frequency set undate	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	Acknowledged mode RLC
-Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurements list	Not Present
Physical channel information elements	
-DPCH compressed mode status info	
-TGPS reconfiguration CFN	240
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Active
-IGCEN	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) shall be added into the required accuracy defined in subclause 8.7.3.1.2 as shown in table 8.7.3.1.3.

		Accura	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dBm	-45.2	-78.2	-9487
UTRA Carrier RSSI	dBm	± 4	± 7	-8770
	dBm	± 6	± 9	-7050

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

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.

8.7.3.2 Relative measurement accuracy requirement

8.7.3.2.1 Definition and applicability

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

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

8.7.3.2.2 Minimum Requirements

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

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

[able 8.7.3.2.1: UTR/	A Carrier	RSSI Inter	frequency	relative accuracy
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		Accura	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
UTRA Carrier RSSI	dBm	± 7	± 11	-9450

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 [14 slots is FFS]. UTRA Carrier RSSI relative accuracy requirements are tested by using test parameters in table 8.7.3.1.2.

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 8.7.3.1.2.

8.7.3.2.4.2 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 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.
- 6) The result of step 5) is compared to actual power level difference of UTRA Carrier RSSI of Channel 1 and Channel 2.
- 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, 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 8.7.3.1.2 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, 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 default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], 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) shall be added into the required accuracy defined in clause 8.7.3.2.2 as shown in table 8.7.3.2.2.

168

		Accura	Conditions		
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]	
	dBm	-45.2	-78.2	-9487	
UTRA Carrier RSSI	dBm	± 4	± 7	-8770	
	dBm	± 6	± 9	-7050	

Table 8.7.3.2.2: UTRA Carrier RSSI relative accuracy

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

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.

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 $|_{dBm} \ge -114 \text{ dBm}.$

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

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

$$\frac{I_o}{\left(\hat{I}_{or}\right)}\Big|_{in\ dB} - \left(\frac{P-CCPCH_E_c}{I_{or}}\right)\Big|_{in\ dB\ is\ low}$$

 $\int_{in \ dB}$ is low enough to ensure successful SFN decoding.

Tab	ble	8.7	.4.	1	.1
		••••			

Parameter	Unit	Accuracy [chip]	Conditions lo [dBm <u>/3.84</u> <u>MHz</u>]
SFN-CFN observed time difference	chip	± 1	-9450

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	Tes	st 1	Tes	Test 2		st 3				
Farailleter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2				
UTRA RF Channel number		Char	nel 1	Channel 1		Chan	nel 1				
CPICH_Ec/lor	dB	-1	0	-10		-1	0				
PCCPCH_Ec/lor	dB	-1	2	-1	2	-1	2				
SCH_Ec/lor	dB	-1	2	-1	2	-1	2				
PICH_Ec/lor	dB	-1	15	-1	5	-15					
DPCH_Ec/lor	dB	-1	-15		-15 -15 -		-15		5		
OCNS_Ec/lor	dB	-1.	-1.11		-1.11		11				
Îor/loc	dB	10.5		10	10.5		1.5				
loc		Io -13.7 dB = Ioc,		lo –13.7	dB = loc,	lo - 13.7 dB = loc,					
100		Note 1		Note 1		Note 1					
lo	dBm <u>/3.84 MHz</u>	-5	-50		-50		-50 -72		'2	-9)4
Propagation condition	-	AWGN		AWGN		AW	GN				
NOTE 1: loc level shall be adjust	NOTE 1: loc level shall be adjusted according the total signal power lo at receiver input and the geometry factor										
Îor/loc.											
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.											

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 8.7.4.1.2.

8.7.4.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT message.
- 3) 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.
- 4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 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 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 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 from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.

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

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message for intra frequency measurement

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Intra-frequency measurement	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	
-Measurement quantity	CPICH RSCP
-intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-SEN-SEN observed time difference reporting	No report
Coll synchronization information reporting	потероп
indicator	TRUE
-Cell Identity reporting indicator	
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells	
-SFN-SFN observed time difference reporting	No report
indicator	
-Cell synchronisation information reporting	TRUE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
 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	2
	Not Present
	Periodical reporting criteria
-Amount or reporting	
-Reporting Interval	250 ms
-Measurement Reporting Mode	
-Interstitional Reporting / Event Trigger Pereting	Periodical reporting
-Additional measurements list	Not Present
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

The SFN-CFN observed time difference measurement accuracy shall meet the requirements in clause 8.7.4.1.2.

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

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 $|_{dBm} \ge -114 \text{ dBm}.$

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

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

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

Table 8.7.4.2.1

Parameter	Unit	Accuracy [chip]	Conditions Io [dBm <u>/3.84</u> <u>MHz</u>]
SFN-CFN observed time difference	chip	± 1	-9450

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. 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

Baramatar	Unit	Te	Test 1		st 2	Test 3					
Farameter	Unit	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/lor	dB	-1	-10		0	-1	0				
PCCPCH_Ec/lor	dB	-1	2	- '	-12		2				
SCH_Ec/lor	dB	-^	-12		-12		2				
PICH_Ec/lor	dB	-′	-15		-15 -15 -1		-15		5		
DPCH_Ec/lor	dB	-1	5	-15		-15					
OCNS_Ec/lor	dB	-1.	-1.11 -1.11		-1.	.11					
Îor/loc	dB	10).1	10).1	10.1					
loc	dBm/ 2.84 MHz	Io - 10.6 dB = Ioc,		Io - 10.6 dB = Ioc,		lo - 10.6 dB = loc,					
100		No	te 1	No	te 1	No	te 1				
lo	dBm <u>/3.84 MHz</u>	-50		-50		-50		-50 -72		-9	94
Propagation condition	-	AWGN		AWGN		AW	'GN				
NOTE 1: <i>loc</i> level shall be adjusted in each carrier frequency according the total signal power <i>lo</i> at receiver input and the geometry factor <i>lor/loc</i> .											

1

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.

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 8.7.4.2.2.

8.7.4.2.4.2 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 "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.
- 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 8.7.4.2.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.2.2 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, steps 4) and 5) above are repeated.
- 7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for inter frequency measurement

Message Type Use of the second seco	
UE Information Elements -RRC transaction identifier 0	
-RRC transaction identifier 0	
Integrity check info	
-Integrity protection mode info	
-Ciphering mode info	
-Activation time 240 CFN	
-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 into Not Present	
Frequency info	
Uplink radio resources	
-Maximum allowed UL TX power Not Present	
Downlink radio resources	
-CHOICE mode FDD	
-Downlink PDSCH information Not Present	
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL Not Present	
-CHOICE mode FDD	
-DPCH compressed mode info	
- Transmission gap pattern sequence	
-TGPS Status Flag	
-TGCEN Not Present	
-Transmission gap pattern sequence	
configuration parameters	
-TGMP FDD measurement	
-TGPRC Not present	
-TGSN 4	
-TGL1 7	
-IGL2 Not Present	
-TGPL1 5	
-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	
-DeltaSIR2	
-DeltaSIRafter?	
-N Identify abort	
-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	
-Filinary OFICE IIIO	
-PDSCH with SHO DCH Info	
-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	0
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	64
-Code number	63
-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		
DE Information elements	0	
	U Not Brocont	
-Integrity check into		
-Measurement Identity	1	
-Measurement Command	Modify	
-Inter-frequency measurement	Woary	
-Inter-frequency cell info list		
-CHOICE Inter-frequency cell removal		
-Remove all inter-frequency cells	Not Present	
-Remove some inter-frequency cells	Not Present	
-Removed inter-frequency cells		
-Inter-frequency cell id		
-No inter-frequency cells removed	Not Present	
-New inter-frequency cells	Not Present	
-Cell for measurement	Not Present	
-Inter-frequency measurement quantity		
-CHOICE reporting criteria	Inter-frequency reporting criteria	
-Filter coefficient	0	
-CHOICE mode		
-Measurement quantity for frequency quality	CPICH RSCP	
estimate		
-Inter-inequency reporting quantity	TRUE	
-UTRA Callier RSSI		
-Non frequency related cell reporting quantities	INDE	
-SEN-SEN observed time difference reporting	No report	
indicator		
-Cell synchronisation information reporting	TRUE	
indicator		
-Cell Identity reporting indicator	TRUE	
-CHOICE mode	FDD	
-CPICH Ec/N0 reporting indicator	TRUE	
-CPICH RSCP reporting indicator	TRUE	
-Pathloss reporting indicator	TRUE	
-Reporting cell status		
-CHOICE reported cell	Report all active set cells + cells within	
	monitored set on used frequency	
-Maximum number of reported cells		
-Measurement validity	Not Present	
-Inter-inequency set update	Not Present Derived reporting criteria	
-CHOICE report citiena		
-Amount of reporting	500 ms	
-Measurement Reporting Mode	500 ms	
-Measurement Report Transfer Mode	Acknowledged mode RLC	
-Periodical Reporting / Event Trigger Reporting	Periodical reporting	
Mode		
-Additional measurements list	Not Present	
Physical channel information elements		
-DPCH compressed mode status info		
-TGPS reconfiguration CFN	240	
-Transmission gap pattern sequence		
-TGPSI	1	
-TGPS Status Flag	Active	
-TGCFN	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

The SFN-CFN observed time difference measurement accuracy shall meet the requirements in clause 8.7.4.2.2.

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.

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 $|_{dBm} \ge -114 \text{ dBm}.$

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

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

 $\int_{in \ dB} - \left(\frac{P - CCPCH _ E_c}{I_{or}}\right)_{in \ dB}$ is low enough to ensure successful SFN decoding.

Table 8.7.5.1.1

			Conditions
Parameter	Unit	Accuracy [chip]	lo [dBm <mark>/3.84</mark>
			MHz
SFN-SFN observed time difference type1	chip	± 1	-9450

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.1
- 2) 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 8.7.5.1.2.

In this case all cells are in the same frequency. Table 8.7.5.1.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table 8.7.5.1.2: SFN-SFN observed time difference type 1 Intra frequency test parameters

Parameter	Unit	Tes	st 1	Te	st 2	Tes	st 3
Farameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1 Channel 1		Chan	nel 1
CPICH_Ec/lor	dB	-1	-10		10	-1	0
PCCPCH_Ec/lor	dB	-12		-*	2	-1	2
SCH_Ec/lor	dB	-1	-12 -12		-12		
PICH_Ec/lor	dB	-1	5	-^	15	-1	5
DPCH_Ec/lor	dB	-1	5	-^	15	-1	5
OCNS_Ec/lor	dB	-1.	11	-1	.11	-1.	11
Îor/loc	dB	10).5	10).5	10).5
	dBm/ 2.94 MUz	lo –13.7	dB = loc,	lo –13.7	dB = loc,	lo –13.7	dB = loc,
100		Not	te 1	No	te 1	Not	e 1
lo	dBm <u>/3.84 MHz</u>	-5	50	-7	72	-9)4
Propagation condition	-	AW	'GN	AW	'GN	AW	GN
NOTE 1: loc level shall be adjusted according the total signal power lo at receiver input and the geometry factor							

 NOTE 1: *loc* level shall be adjusted according the total signal power *lo* at receiver input and the geometry factor *Îor/loc*.
 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) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT message.
- 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.
- 4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.2 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 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.2 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 from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], 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	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Intra-frequency measurement	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-SFN-SFN observed time difference reporting	
indicator	Туре 1
-Cell synchronisation information reporting	
indicator	IRUE
-Cell Identity reporting indicator	
	FDD
-CPICH Ec/NU reporting indicator	TRUE
-CPICH RSCP reporting indicator	IRUE
-Pathioss reporting indicator	IRUE
-Reporting quantities for monitored set cells	Time 4
-SFN-SFN observed time difference reporting	турет
Coll avaphronization information reporting	TDUE
indicator	IROE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-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	2
-Measurement validity	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurements list	Not Present
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.

8.7.5.1.5 Test requirements

The SFN-SFN observed time difference type 1 accuracy shall meet the requirements in clause 8.7.5.1.2.

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

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

Baramotor	Unit	Accuracy [chin]	Conditions
Falailletei	Onit	Accuracy [cnip]	lo [dBm/3.84Mz]
UE RX-TX time difference	chip	± 1.5	-9450

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
- 2) 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 8.7.6.1.2 for Test 1.

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

Devenueter	l la it	Test 1	Test 2	Test 3
Parameter	Unit	Cell 1	Cell 1	Cell 1
UTRA RF Channel number		Channel 1	Channel 1	Channel 1
CPICH_Ec/lor	dB	-10	-10	-10
PCCPCH_Ec/lor	dB	-12	-12	-12
SCH_Ec/lor	dB	-12	-12	-12
PICH_Ec/lor	dB	-15	-15	-15
DPCH_Ec/lor	dB	-15	-15	-15
OCNS	dB	-1.11	-1.11	-1.11
Îor/loc	dB	10.5	10.5	10.5
les	dBm/2.84 MHz	Io - 10.9 dB = Ioc,	Io - 10.9 dB = Ioc,	Io - 10.9 dB = Ioc,
100	UDITI/ 5.04 WILIZ	Note 1	Note 1	Note 1
lo	dBm/3.84 MHz	-94	-72	-50
Propagation condition	-	AWGN	AWGN	AWGN
NOTE 1: <i>loc</i> level shall be adjusted according the total signal power spectral density <i>lo</i> at receiver input and the				
geometry factor <i>Îor/loc</i> .	-		-	

8.7.6.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT message.
- 3) 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.
- 4) The RF parameters are set up according table 8.7.6.1.2 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.
- 5) Step 3) above shall be repeated.
- 6) The RF parameters are set up according table 8.7.6.1.2 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.
- 7) Step 3) above shall be repeated.
- 8) 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] and Annex A of 34.123-1 [21] with the following exceptions:

MEASUREMENT CONTRO	_ message for Intra	a frequency measure	ement (Step 1):
--------------------	---------------------	---------------------	-----------------

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Setup
-CHOICE Measurement type	UE Internal measurement
-UE Internal measurement quantity	
-CHOICE mode	FDD
-Measurement quantity	UE Rx-Tx time difference
-Filter coefficient	0
-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
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	AMRLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
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.

8.7.6.1.5 Test requirements

The UE Rx-Tx time difference accuracy shall meet the requirements in clause 8.7.6.1.2.

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

CHANGE REQUEST				
¥	34.121 CR 156 # rev - [#] Current version: 3.8.0 [#]			
For <u>HELP</u> on u	ising this form, see bottom of this page or look at the pop-up text over the st symbols.			
Proposed change	affects: # (U)SIM ME/UE X Radio Access Network Core Network			
<i>Title:</i> ដ	Structure of subclause 8			
Source: अ	T1-RF			
Work item code: %	Date: ೫ 23 May, 2002			
Category: #	F Release: # R99 Use one of the following categories: Use one of the following releases: F (correction) 2 A (corresponds to a correction in an earlier release) R96 B (addition of feature), R97 C (functional modification of feature) R98 D (editorial modification) R99 D (editorial modification) R99 Detailed explanations of the above categories can be found in 3GPP TR 21.900. REL-4 Release 19 Release 19 e: # Subclause structure of 34.121 subclause is inconsistent with 25.133 Annex A. ge:# 1) Removal of dublicated subclause 8.3.3 and 8.3.4 2) Addition of subclause 8.4.3 Transport format combination selection in UE. 4) Addition of subclause 8.7.3A GSM Carrier RSSI 6) Addition of subclause 8.7.3B Transport channel BLER 7) Addition of subclause 8.7.3C UE transmitted power 8) Addition of subclause 8.7.3C UE transmitted power 8) Addition of subclause 8.7.5.2 SFN-SFN observed time difference type 2 9) Title of subclause 8.7.8: HSCP replaced by RSCP			
Consequences if not approved:	# I est cases are missing in 34.121.			
Clauses affected:	第 8.3, 8.4, 8.6, 8.7			
Other specs affected:	% Other core specifications % Test specifications 0&M Specifications			
Other comments:	¥			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

8.3.3 FDD/TDD Handover

Void

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 40 ms. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

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. The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms.

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	90
HANDOVER FROM UTRAN COMMAND is received	
The UE has not synchronised to the GSM cell before	190
the HANDOVER FROM UTRAN COMMAND is received	

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	40
HANDOVER FROM UTRAN COMMAND is received	
The UE has not synchronised to the GSM cell before	140
the HANDOVER FROM UTRAN COMMAND is received	

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

8.3.4.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.4.4 Method of test

8.3.4.4.1 Initial conditions

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

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

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

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

UTRAN shall send a HANDOVER FROM UTRAN COMMAND well in advance to T3 with activation time at T3. In GSM Handover command contained in that message, IE starting time shall not be included.

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel	As specified in TS 25.101 [1] section
		12.2 kbps	A.3.1
Power Control		On	
Target quality value	BLER	0.01	
compressed mode			
- GSM carrier RSSI		DL Compressed mode reference	As specified in TS 25 101 [1] section
measurement		nattern 2 in Set 2	A 5 table A 22
measurement			71.0, table 71.22
- GSM Initial BSIC		Pattern 2	As specified in section TS 25.133 [2]
identification			8.1.2.5.2.1 table 8.7.
- GSM BSIC re-		Pattern 2	As specified in section TS 25.133 [2]
confirmation			8.1.2.5.2.2 table 8.8.
Active cell		Cell 1	
Inter-RAT		GSM Carrier RSSI	
measurement			
quantity			
BSIC verification		Required	
required			
Threshold other	dBm	-80	Absolute GSM carrier RSSI threshold
system			for event 3B and 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list		24 FDD neighbours on Channel 1	Measurement control information is
SIZE		6 GSM neighbours including ARFCN 1	sent before the compressed mode
NI I da a tifa a a la a at		05	patterns starts.
N Identity abort		65	table 8.7.
T Reconfirm abort		5.0	Taken from TS 25.133 [2] 8.1.2.5.2.2
Τ1	-	20	Iduie 0.0.
T2	3	5	
12 T2	3	5	
15	3	0	

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

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/lor	dB	-10	
PCCPCH_Ec/lor	dB	-12	
SCH_Ec/lor	dB	-12	
PICH_Ec/lor	dB	-15	
DCH_Ec/lor	dB	Note 1	
OCNS_Ec/lor	dB	Note 2	
\hat{I}_{or}/I_{oc}	dB	0	
I _{oc}	dBm/3. 84 MHz	-70	
CPICH_Ec/lo	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}			

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

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

8.3.4.4.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1.
- 2) The UE is switched on
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4
- 4) The RF parameters for cell 2 are set up according to T1 and the SS configures a traffic channel
- 5) SS shall transmit a MEASUREMENT CONTROL message to cell 1
- 6) After 20 seconds, the SS shall switch the power settings from T1 to T2
- 7) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C
- 8) SS shall transmit a HANDOVER FROM UTRAN COMMAND message with activation time at T3 and indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell.
- 9) After 5 seconds, the SS shall switch the power settings from T2 to T3
- 10) UE shall transmit a burst on the traffic channel of cell 2 implying that it has switched to the GSM cell. The UE sends a HANDOVER ACCESS message. If the UE transmits access bursts on the new DCCH of the target cell less than 40 ms from the beginning of time period T3, then the number of successful tests is increased by one.

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

11) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

12)Repeat step 1-11 [TBD] times

Specific Message Contents

All messages indicated belowabove shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message (step 5):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	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	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
 Measurement quantity for UTRAN quality estimate 	
(10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH Ec/N0
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Required
-Inter-RAT reporting quantity (10.3.7.32)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within
	virtual active set or of the other RAT
-Maximum number of reported cells	2
-CHOICE report criteria	Inter-RAT measurement reporting criteria
-Inter-RAT measurement reporting criteria (10.3.7.30)	
-Parameters required for each event	1
-Inter-RAT event identity (10.3.7.24)	Event 3C
-Threshold own system	Not Present
	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
- lime 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)	Not Present

HANDOVER FROM UTRAN COMMAND message (step 8):

Information Element	Value/remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Activation time	At T3
RB information elements	
-RAB information list	1
-RAB Info	Not present
Other information elements	
-CHOICE System type	GSM
-Frequency Band	GSM/DCS 1800 Band
-GSM message	
-Single GSM message	[TBD]
-GSM message List	GSM HANDOVER COMMAND formatted
	the HANDOVER COMMAND see next
	table

HANDOVER COMMAND

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

MEASUREMENT REPORT message for Inter-RAT test cases

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

8.3.4.5 Test requirements

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

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

8.3.3 FDD/TDD Handover

Void

831	Inter-system Handover from LITRAN EDD to GSM	
0.0.4		

Void

- 8.3.5 Cell Re-selection in CELL_FACH
- 8.3.5.1 One frequency present in neighbour list

Void

8.3.5.2 Two frequencies present in the neighbour list

Void
8.3.5.3	Cell Reselection to GSM
8.3.6	Cell Re-selection in CELL_PCH
8.3.6.1 ^{Void}	One frequency present in the neighbour list
8.3.6.2 Void	Two frequencies present in the neighbour list
8.3.7	Cell Re-selection in URA_PCH
8.3.7.1 Void	One frequency present in the neighbour list
8.3.7.2 Void	Two frequencies present in the neighbour list
8.4	RRC Connection Control
8.4.1 ^{Void}	RRC Re-establishment delay
8.4.2	Random Access

8.4.2.1 Correct behaviour when receiving an ACK

8.4.2.1.1 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. A random access transmit sequence is described in clause 6.7.2 of TS 25.303.

8.4.2.1.2 Minimum Requirements

The UE shall have capability to calculate initial power according to the open loop algorithm and apply this power level at the first preamble and increase the power on additional preambles. The absolute power applied to the first preamble shall have an accuracy as specified in table 6.3 of TS 25.101 [1]. The relative power applied to additional preambles shall have an accuracy as specified in clause 6.5.2.1 of 25.101 [1].

The absolute power applied to the first preamble shall be -30 dBm with an accuracy as specified in clause 6.4.1.1 of TS 25.101 [1]. The accuracy is \pm 9dB in the case of normal condition or \pm 12dB in the case of extreme condition.

There are two relative powers, one is the power difference for preamble ramping and another is the power difference between last preamble part and message part. From the test parameter in the table 8.4.2.1.2, the test requirement of the power difference for all preamble ramping is 3dB (Power offset P0). The accuracy is ± 2 dB as specified in clause 6.5.2.1 of 25.101 [1]. The test requirement of the power difference between 10th preamble PRACH and message part is [3 dB] (note). The accuracy is $[\pm 2$ dB] as specified in clause 6.5.2.1 of 25.101 [1].

NOTE: In order to calculate the power difference between 10th preamble PRACH and message part by using Power offset P p-m in the table 8.4.2.1.2, the gain factors of PRACH message part are needed. The gain factor β_d is set to 15. The [temporary] gain factor β_c is set to [15].

The UE shall stop transmitting preambles upon a ACK on the AICH has been received and then transmit a message. The UE shall transmit 10 preambles and 1 message.

The normative reference for this requirements is TS 25.133 [2] clauses 6.3.2 and A.6.2.2.1.

8.4.2.1.3 Test purpose

The purpose of this test is to verify that the behaviour of the random access procedure is according to the requirements and that the PRACH power settings are within specified limits.

- 8.4.2.1.4 Method of test
- 8.4.2.1.4.1 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.

- Connect the SS to the UE antenna connector as shown in figure A.1 in the case of the PRACH power measurement. And in the case of the function test of the random access procedure, connect the SS to the UE antenna connector as shown in figure A.8. A spectrum analyzer is set to 0 span mode.
- 2) 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 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that an ACK on the AICH shall be transmitted after 10 preambles have been received by the SS

See TS 34.108 [3] for details regarding generic call setup procedure.

Parameter	Unit	Cell 1
UTRA RF Channel Number		Channel 1
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
Number of other transmitted Acquisition Indicators	-	0
AICH_Ec/lor	dB	-10
PICH_Ec/lor	dB	-15
OCNS_Ec/lor when an AI is not transmitted	dB	-0,941
OCNS_Ec/lor when an Al is transmitted	dB	-1,516
\hat{I}_{or}/I_{oc}	dB	0
I _{oc}	dBm/3. 84 MHz	-70
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN

 Table 8.4.2.1.1: RF Parameters for Random Access test

The test parameters "System Information Block (SIB) type 5 (ASC #0)" defined in clause 6.1 of TS 34.108 [3], shall be used in all random access tests (see note). Crucial parameters for the test requirements are repeated in tables 8.4.2.1.2 and A.8.4.3.1.3 and these overrule the parameters defined in SIB type 5.

NOTE: A parameter of AC-to-ASC mapping(AC0-9) in SIB5 of clause 6.1 of TS 34.108 [3] shall be set to 0 in the case of all random access tests. The EFACC of Type A, which is specified in clause 8.3.2.15 of TS 34.108 [3], shall be selected.

Parameter	Unit	Value
Access Service Class		
(ASC#0)		
	01	1
- Persistence value		
Maximum number of preamble		2
ramping cycles (M _{max}).		
Maximum number of		12
preambles in one preamble		
ramping cycle		
(Preamble Retrans Max)		
The backoff time T_{B01}	ms	N/A
N _{B01min=} N _{B01max}	#TTI	10
Power step when no	dB	3
acquisition indicator is		
received		
(Power offset P0)		
Power offset between the last	dB	0
transmitted preamble and the		
control part of the message		
(Power offset P p-m)		
Maximum allowed UL TX	dBm	0
power		

 Table 8.4.2.1.2: UE parameters for Random Access test

Table 8.4.2.1.3: SS parameters for Random Access test

Parameter	Unit	Value
Primary CPICH DL TX power	dBm	-8
UL interference	dBm	-102
SIR in open loop power	dB	0
control (Constant value)		
AICH Power Offset	dB	0

8.4.2.1.4.2 Procedure

- 1) 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 8.4.2.1.1.
- 2) Measure the first PRACH preamble output power, the each power difference for preamble ramping and the power difference between 10th preamble PRACH and message part of the UE according to annex B.
- 3) Measure the number of the preamble part and the message part by using a spectrum analyzer.

8.4.2.1.5 Test requirements

The absolute power and the relative power shall meet the requirements in the minimum requirements in clause 8.4.2.1.2.

The UE shall stop transmitting preambles upon a ACK on the AICH has been received and then transmit a message. The UE shall transmit 10 preambles and 1 message.

8.4.2.2 Correct behaviour when receiving an NACK

8.4.2.2.1 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 and the control of the RACH transmission is specified in clause 11.2 of TS 25.321. A random access transmit sequence is described in clause 6.7.2 of TS 25.303.

8.4.2.2.2 Minimum Requirements

The UE shall stop transmitting preambles upon a NACK on the AICH has been received and then repeat the ramping procedure when the back off timer T_{B01} expires.

The UE shall transmit 10 preambles in the first ramping cycle and no transmission shall be done by the UE within 100 ms after the NACK has been transmitted by the SS. Then the UE shall start the second preamble ramping cycle.

The normative reference for this requirements is TS 25.133 [2] clauses 6.3.2 and A.6.2.2.2.

8.4.2.2.3 Test purpose

The purpose of this test is to verify that the behaviour of the random access procedure is according to the requirements.

8.4.2.2.4 Method of test

8.4.2.2.4.1 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.

- 1) Connect the SS to the UE antenna connector as shown in figure A.8. A spectrum analyzer is set to 0 span mode.
- 2) 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 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that an NACK on the AICH shall be transmitted after 10 preambles have been received by the SS.

See TS 34.108 [3] for details regarding generic call setup procedure.

8.4.2.2.4.2 Procedure

- 1) 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 8.4.2.1.1.
- 2) Measure the number of the preamble part and the time delay between 10th preamble in the first ramping cycle and first preamble in the second ramping cycle by using a spectrum analyzer.

8.4.2.2.5 Test requirements

The UE shall stop transmitting preambles upon a NACK on the AICH has been received and then repeat the ramping procedure when the back off timer T_{B01} expires.

The UE shall transmit 10 preambles in the first ramping cycle and no transmission shall be done by the UE within 100 ms after the NACK has been transmitted by the SS. Then the UE shall start the second preamble ramping cycle.

8.4.2.3 Correct behaviour at Time-out

8.4.2.3.1 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 and the control of the RACH transmission is specified in clause 11.2 of TS 25.321. A random access transmit sequence is described in clause 6.7.2 of TS 25.303.

8.4.2.3.2 Minimum Requirements

The UE shall stop transmit preambles when reaching the maximum number of preambles allowed in a cycle. The UE shall then repeat the ramping procedure until the maximum number of preamble ramping cycles are reached. No ACK/NACK shall be sent by SS during this test.

The UE shall transmit 2 preambles cycles, consisting of 12 preambles in each preamble cycle.

The normative reference for this requirements is TS 25.133 [2] clauses 6.3.2 and A.6.2.2.3.

8.4.2.3.3 Test purpose

The purpose of this test is to verify that the behaviour of the random access procedure is according to the requirements.

8.4.2.3.4 Method of test

8.4.2.3.4.1 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 the SS to the UE antenna connector as shown in figure A.8. A spectrum analyzer is set to 0 span mode.
- 2) 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 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.

See TS 34.108 [3] for details regarding generic call setup procedure.

8.4.2.3.4.2 Procedure

- 1) 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 8.4.2.1.1.
- 2) Measure the number of the preamble part by using a spectrum analyzer.

8.4.2.3.5 Test requirements

The UE shall stop transmit preambles when reaching the maximum number of preambles allowed in a cycle. The UE shall then repeat the ramping procedure until the maximum number of preamble ramping cycles are reached. No ACK/NACK shall be sent by SS during this test.

The UE shall transmit 2 preambles cycles, consisting of 12 preambles in each preamble cycle.

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 and the control of the RACH transmission is specified in clause 11.2 of TS 25.321. A random access transmit sequence is described in clause 6.7.2 of TS 25.303.

8.4.2.4.2 Minimum Requirements

The UE shall not exceed the maximum allowed UL TX power configured by the SS. 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 + -[] dB (or + -[] dB in extreme conditions).

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 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.
- 2) 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 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.

See TS 34.108 [3] for details regarding generic call setup procedure.

8.4.2.4.4.2 Procedure

- 1) 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 8.4.2.1.1.
- 2) 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 allowed UL TX power configured by the SS. 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 + -[] dB (or + -[] dB in extreme conditions).

8.4.3 Transport format combination selection in UE

8.4.3.1 Interactive or Background, PS, UL: 64 kbps

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 significant path of the corresponding downlink DPCCH/DPDCH frame. 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 significant path of the corresponding downlink DPCCH/DPDCH frame is received plus T₀ chips. T₀ is defined in TS25.211 [19].

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 ¹/₄ chip.

The minimum adjustment rate shall be 233ns per second. The maximum adjustment rate shall be 1/4 chip per 200ms. In particular, within any given 200 ms period, the UE transmit timing shall not change in excess of $\pm 1/4$ chip from the timing at the beginning of this 200ms period.

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.

- 1) Connect the test system to the UE antenna connector as shown in figure A.1.
- 2) A call is set up with Cell 1 according to the Generic call setup procedure. The test parameters are set up according to table 8.5.1.1.

Parameter	Unit	Level
DPCH_Ec/ lor, Cell 1 and Cell 2	dB	-17
CPICH_Ec/ lor, Cell 1 and Cell 2	dB	-10
PCCPH_Ec/ lor, Cell 1 and Cell 2	dB	-12
SCH_Ec/ lor, Cell 1 and Cell 2	dB	-12
PICH_Ec/ lor, Cell 1 and Cell 2	dB	-15
OCNS_Ec/ lor, Cell 1 and Cell 2	dB	-1.05
Î _{or,} Cell 1	dBm/3.84 MHz	-96
Î _{or,} Cell 2	dBm/3.84 MHz	-99
Information data rate	kbps	12.2
Relative delay of path received from cell	μs	+/-2
2 with respect to cell 1	•	
Propagation condition	A	WGN

Table 8.5.1.1: Test parameters for UE Transmit Timing requirements

8.5.1.4.2 Procedure

- a) After a connection is set up with cell 1, the test system shall verify that the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- b) Test system introduces cell 2 into the test system at delay +2 μ s from cell 1.
- c) Test system verifies that cell 2 is added to the active set.
- d) Test system shall verify that the UE transmit timing offset is still within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- e) Test system switches Tx timing of cell 2 to a delay of $-2 \,\mu$ s with respect to cell 1.
- f) Test system verifies cell 2 remains in the active set.
- g) Test system shall verify that the UE transmit timing offset is still within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- h) Test system stops sending cell 1 signals.
- i) Test system verifies that the UE does not start to adjust its Tx timing to cell 2 before it receives an active set update message notifying the UE that cell 1 is deleted from the active set.
- j) Test system verifies that UE transmit timing adjustment starts with an adjustment step size and an adjustment rate according to the requirements in section 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- k) Test system shall verify that the UE transmit timing offset stays within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- 1) Test system starts sending cell 1 signal again with its original timing.
- m) Test system verifies that cell 1 is added to the active set.
- n) Test system verifies that the UE transmit timing is still within $T_0 \pm 1.5$ chips with respect to the first significant path of the downlink DPCCH/DPDCH of cell 2.
- o) Test system stops sending cell 2 signals.
- p) Test system verifies that the UE does not start to adjust its Tx timing to cell 1 before it receives an active set update message notifying the UE that cell 2 shall be deleted from the active set.
- q) Test system verifies that UE transmit timing adjustment starts with an adjustment step size and an adjustment rate according to the requirements in section 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

r) Test system shall verify that the UE transmit timing offset stays within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

8.5.1.5 Test requirements

- 1) In step a), d) and g), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- 2) In step j), the adjustment step size and adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- 3) In step k) and n), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.
- 4) In step q), the adjustment step size and adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.
- 5) In step r), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first significant received path 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.

8.6 UE Measurements Procedures

- 8.6.1 FDD intra frequency measurements
- 8.6.1.1 Event triggered reporting in AWGN propagation conditions

Void

8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition

Void

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

Void

8.6.1.4 Correct reporting of neighbours in fading propagation condition

Void

- 8.6.2 FDD inter frequency measurements
- 8.6.2.1 Correct reporting of neighbours in AWGN propagation condition

Void

139

8.6.2.2 Correct reporting of neighbours in Fading propagation condition

Void

8.6.3 TDD measurements

8.6.3.1 Correct reporting of TDD neighbours in AWGN propagation condition

Void

8.6.4 GSM measurements

8.6.4.1 Correct reporting of GSM neighbours in AWGN propagation condition

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 \geq -114 dBm.

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

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140

	Accura		acy [dB]	Conditions
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dBm	±6	±9	-9470
	dBm	±8	±11	-7050

Table 8.7.1.1.1.1: CPICH_RSCP Intra frequency absolute accuracy

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.

Parameter	Unit	Test 1		Test 2		Test 3	
	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/lor	dB	-1	0	-10		-1	0
PCCPCH_Ec/lor	dB	-1	2	-1	2	-1	2
SCH_Ec/lor	dB	-1	2	-1	2	-12	
PICH_Ec/lor	dB	-15		-15		-15	
DPCH_Ec/lor	dB	-15	-	-15	-	-15	-
OCNS_Ec/lor	dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
loc	dBm/ 3.84 MHz	-75.54		-59.98		-97.52	
Îor/loc	dB	4	0	9	0	0	-6.53
CPICH RSCP, Note 1	dBm	-81.5	-85.5	-60.98	-69.88	-107.5	-114.0
lo, Note 1	dBm/3.84 MHz	-69		-50		-9)4
Propagation condition	-	AW	GN	AW	GN	AW	'GN
NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They							
are not settable parameters themselves.							

Table 8 7 1 1 1 2: CPICH RSCP Intra frequency test parameters

2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests

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 8.7.1.1.1.2.

8.7.1.1.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check CPICH_RSCP value in MEASUREMENT REPORT messages. CPICH RSCP power of Cell 1 reported by UE is compared to actual CPICH RSCP power for each MEASUREMENT REPORT message.
- 4) 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 8.7.1.1.1.2 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 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 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 3) above is repeated.

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

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
LIF information elements	
-BRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Intra-frequency measurement	incury
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-SFN-SFN observed time difference reporting	
indicator	No report
-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	TRUE
-Reporting quantities for monitored set cells	
-SFN-SFN observed time difference reporting	No report
indicator	
-Cell synchronisation information reporting	FALSE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells	Not Present
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within
Maximum number of reported calls	
-Masurement validity	∠ Not Present
	Periodical reporting criteria
-Reporting interval	250 ms
-Measurement Reporting Mode	200 113
-Measurement Report Transfer Mode	AMRIC
-Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurements list	Not Present
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

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.1.2.

- NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.
- 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 \geq -114 dBm.

-
$$|CPICH _RSCP1|_{in \, dB} - CPICH _RSCP2|_{in \, dB} \le 20 dB$$

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

Table 8.7.1.1.2.1: CPICH_RSCP Intra frequency relative accuracy

		Accur	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
CPICH_RSCP	dBm	±3	±3	-9450

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.

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 8.7.1.1.1.2.

8.7.1.1.2.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.

- 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.
- 4) The result of step 3) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.
- 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 8.7.1.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 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, steps 3) and 4) above are 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] and in Annex A of 34.123-1 [21], 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

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.2.2.

- 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.
- 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 \geq -114 dBm.
- $|CPICH _RSCP1|_{in \, dB} CPICH _RSCP2|_{in \, dB}| \le 20 \, dB$.

Release 1999

- | Channel 1_Io -Channel 2_Io| ≤ 20 dB.

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

Table 8.7.1.2.1.1: CPICH_RSCP Inter frequency relative accuracy

		Accur	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
CPICH_RSCP	dBm	±6	±6	-9450

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 [14 slots is FFS]. 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 tests parameters

Parameter	Unit	Te	st 1	Test 2	
Farailleter	Onit	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/lor	dB	-1	0	-*	10
PCCPCH_Ec/lor	dB	-1	2	-*	12
SCH_Ec/lor	dB	-1	2	-*	12
PICH_Ec/lor	dB	-1	5	-*	15
DPCH_Ec/lor	dB	-15	-	-15	-
OCNS_Ec/lor	dB	-1.11	-0.94	-1.11	-0.94
loc	dBm/ 3.84 MHz	-60.00	-60.00	-84.00	-94.46
Îor/loc	dB	9.54	9.54	0	-9.54
CPICH RSCP, Note 1	dBm	-60.46	-60.46	-94.0	-114.0
lo, Note 1	dBm/3.84 MHz	-50.00	-50.00	-81.0	-94.0
Propagation condition - AWGN		AW	/GN		
NOTE 1: CPICH RSCP and lo 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.					

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 8.7.1.2.1.2.

8.7.1.2.1.4.2 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 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.
- 6) The result of step 5) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.
- 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 8.7.1.2.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 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] and in Annex A of 34.123-1 [21], with the following exceptions:

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

Information Flomont	Value/Bemark
Measage Type	value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	240 CFN
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RI	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Active
-TGCFN	Not Present
-Transmission gap pattern sequence	
configuration parameters	
-TĞMP	FDD measurement
-TGPRC	Not present
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
 Downlink compressed mode method 	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	В
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
- I Reconfirm abort	Not Present
- I X 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	500
-Unoice mode	ן רטט
-Primary CPICH Into	100
-rimary scrampling code	100 Net Present
-FUSCH code mapping	INULFIESEIIL

-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	0
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	64
-Code number	63
-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	
LIE information alamanta	
DE Information elements	0
-RRC (Id) Socion Dennier	0 Not Present
Measurement Information elements	
Measurement Identity	1
-Measurement Command	Modify
-Inter-frequency measurement	Weary
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	
-Remove all inter-frequency cells	Not Present
-Remove some inter-frequency cells	Not Present
-Removed inter-frequency cells	
-Inter-frequency cell id	
 -No inter-frequency cells removed 	Not Present
-New inter-frequency cells	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-CHOICE mode	
-measurement quantity for frequency quality	CPICHRSCP
Inter frequency reporting quantity	
	TRUE
-Erequency quality estimate	TRUE
-Non frequency related cell reporting quantities	INCE
-SEN-SEN observed time difference reporting	No report
indicator	
-Cell synchronisation information reporting	TRUE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting cell status	_
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	2 Not Descent
-ivieasurement validity	Not Present
-Inter-inequency set update	Not Present Derived reporting criteria
-CHOICE report ciliena	
-Reporting interval	500 ms
-Measurement Reporting Mode	500 ms
-Measurement Report Transfer Mode	Acknowledged mode RI C
-Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurements list	Not Present
Physical channel information elements	
-DPCH compressed mode status info	
-TGPS reconfiguration CFN	240
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Active
-TGCFN	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

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2.1.2.

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

8.7.2 CPICH Ec/lo

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 \geq -114 dBm.

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

Table 8.7.2.1.1.1: CPICH_Ec/lo Intra frequency absolute accuracy

		Accuracy [dB]	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
CPICH_Ec/lo	dB	\pm 1,5 for -14 \leq CPICH Ec/lo \pm 2 for -16 \leq CPICH Ec/lo < -14 \pm 3 for -20 \leq CPICH Ec/lo < -16	±3	-9450

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.

Baramotor	Unit	Tes	Test 1		Test 2		Test 3	
Farailleter	Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Channel number		Char	inel 1	Channel 1		Channel 1		
CPICH_Ec/lor	dB	-1	0	-10		-10		
PCCPCH_Ec/lor	dB	-1	2	-12		-12		
SCH_Ec/lor	dB	-1	2	-1	-12		2	
PICH_Ec/lor	dB	-1	5	-1	5	-1	5	
DPCH_Ec/lor	dB	-15	-	-15	-	-6	-	
OCNS_Ec/lor	dB	-1.11	-0.94	-1.11	-0.94	.2.56	-0.94	
loc	dBm/ 3.84 MHz	-56	-56.98		-89.07		.98	
Îor/loc	dB	3.0	3.0	-2.9	-2.9	-9.0	-9.0	
CPICH Ec/lo, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0	
Io, Note 1	dBm/3.84 MHz	-5	-50		-86		94	
Propagation condition	-	AWGN		AWGN		AW	GN	
NOTE 1: CPICH Ec/lo and lo 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.								

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 8.7.2.1.1.2.

8.7.2.1.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) 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.
- 4) 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 8.7.2.1.1.2 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 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.2 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 3) above is repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Reported value	Measured quantity value	Unit
CPICH_Ec/No _00	CPICH Ec/lo < -24	dB
CPICH_Ec/No _01	-24 ≤ CPICH Ec/lo < -23.5	dB
CPICH_Ec/No _02	-23.5 ≤ CPICH Ec/lo < -23	dB
CPICH_Ec/No _47	-1 ≤ CPICH Ec/Io < -0.5	dB
CPICH_Ec/No _48	-0.5 ≤ CPICH Ec/lo < 0	dB
CPICH_Ec/No _49	0 ≤ CPICH Ec/lo	dB

Table 8.7.2.1.1.3: CPICH Ec/lo measurement report mapping

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] and in Annex A of 34.123-1 [21], 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	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Intra-frequency measurement	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-SFN-SFN observed time difference reporting	
indicator	No report
-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	TRUE
-Reporting quantities for monitored set cells	
-SFN-SFN observed time difference reporting	No report
indicator	
-Cell synchronisation information reporting	FALSE
indicator	
-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 	2
-Measurement validity	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurements list	Not Present
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) 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.

		Accuracy [dB]		Conditions
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dD	-2.71.5 for -14 ≤ CPICH Ec/lo -3.22 for -16 ≤ CPICH Ec/lo < -14 -4.23 for -20 ≤ CPICH Ec/lo < -16	-4.23	-9487
	uВ	\pm 1.5 for -14 \leq CPICH Ec/lo \pm 2 for -16 \leq CPICH Ec/lo < -14 \pm 3 for -20 \leq CPICH Ec/lo < -16	± 3	-8750

Table 8.7.2.1.1.4: CPICH_Ec/lo Intra frequency absolute accuracy

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

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.

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 \geq -114 dBm.
- $|CPICH _RSCP1|_{in dB} CPICH _RSCP2|_{in dB}| \le 20 dB$.

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

Table 8.7.2.1.2.1: CPICH_Ec/lo Intra frequency relative accuracy

		Accuracy [dB]	Accuracy [dB]		
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]	
	dB	\pm 1,5 for -14 \leq CPICH Ec/lo		-9450	
CPICH_Ec/lo		± 2 for -16 \leq CPICH Ec/lo < -14	±3		
		± 3 for $-20 \le CPICH Ec/lo < -16$			

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.

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 8.7.2.1.1.2.

8.7.2.1.2.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) 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.
- 4) The result of step 3) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
- 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 8.7.2.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.2 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, steps 3) and 4) above are 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] and in Annex A of 34.123-1 [21], 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

The CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.1.2.2.

155

8.7.2.2	Inter frequency measurement accuracy
8.7.2.2.1	Absolute accuracy requirement
[TBD]	
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 \geq -114 dBm.

-
$$|CPICH _RSCP1|_{in \, dB} - CPICH _RSCP2|_{in \, dB}| \le 20 \, dB$$
.

- | Channel 1_Io -Channel 2_Io| \leq 20 dB.

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

Table 8.7.2.2.2.1: CPICH_Ec/lo Inter frequency relative accuracy

		Accuracy [dB	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dB	\pm 1.5 for -14 \leq CPICH Ec/lo		-9450
CPICH_Ec/lo		± 2 for -16 \leq CPICH Ec/lo < -14	±3	
		± 3 for -20 \leq CPICH Ec/lo < -16		

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. 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 [14 slots is FFS]. CPICH Ec/Io inter frequency relative accuracy requirements are tested by using test parameters in Table 8.7.2.2.2.2.

Parameter	Unit	Test 1		Test 2		Test 3	
Farameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
number		Charmer	Channel 2	Charmer	Onamie 2	Charmer	Channel 2
CPICH_Ec/lor	dB	-1	0	-1	0	-1	0
PCCPCH_Ec/lor	dB	-1	2	-1	2	-1	2
SCH_Ec/lor	dB	-1	2	-^	2	-1	2
PICH_Ec/lor	dB	-1	5	-1	15	-1	15
DPCH_Ec/lor	dB	-15	-	-6	-	-6	-
OCNS_Ec/lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
loc	dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	-94.46	-94.46
Îor/loc	dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/lo, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
lo, Note 1	dBm/3.84 MHz	-50	-50	-86	-86	-94	-94
Propagation condition	-	AWGN AWGN AWGN				'GN	
NOTE 1: CPICH Ec/lo and lo 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.							

Table 8.7.2.2.2.2: CPICH Ec/lo Inter frequency tests parameters

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 8.7.2.2.2.2.

8.7.2.2.2.4.2 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 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.
- 6) The result of step 5) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
- 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 8.7.2.2.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 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 8.7.2.2.2 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, steps 5) and 6) above are repeated.
- 8) After 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] and in Annex A of 34.123-1 [21], with the following exceptions:

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

Information Element	Value/Remark
	Value/Neillark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	240 CFN
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
- Transmission gap pattern sequence	
-TGPSI TGPS Status Floa	
-TGPS Status Flay	Active Net Dresent
-TGUEN Transmission gap pattorn soquence	Not Present
- mansinission gap patient sequence	
	FDD measurement
-TGPRC	Not present
-TGSN	
-TGI 1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
 -Uplink compressed mode method 	SF/2
-Downlink frame type	В
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-IN Identify abort	Not Present
- I Reconfirm abort	Not Present
	Not Present
	Not Procent
-Delauli DFOR Olisel Value	
-Downlink information for each radio link	
	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	0
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	64
-Code number	63
-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	Valuontoniant
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Inter-frequency measurement	
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	
-Remove all inter-frequency cells	Not Present
-Remove some inter-frequency cells	Not Present
-Removed Inter-frequency cells	
-Inter-frequency cells removed	Not Present
-New inter-frequency cells	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-SEN-SEN observed time difference reporting	No report
Indicator	
-Cell synchronisation information reporting	IRUE
	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	
-Reporting Interval	500 ms
Measurement Reporting Mode	Acknowledged mede PLC
-Nedsulement Report Transfer Mode	Periodical reporting
Mode	
-Additional measurements list	Not Present
Physical channel information elements	
-DPCH compressed mode status info	
-TGPS reconfiguration CFN	240
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Active
-TGCFN	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 CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.2.2.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) 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.

		Accuracy [dB]		Conditions
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
		-2.71.5 for -14 \leq CPICH Ec/lo -3.22 for -16 \leq CPICH Ec/lo < -14 -4.23 for -20 \leq CPICH Ec/lo < -16	-4.23	-9487
CPICH_Ec/lo	dB	\pm 1.5 for -14 \leq CPICH Ec/lo \pm 2 for -16 \leq CPICH Ec/lo < -14 \pm 3 for -20 \leq CPICH Ec/lo < -16	± 3	-8750

Table 8.7.2.2.2.3: CPICH	_Ec/lo Inter	frequency	y relative
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The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

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.

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

		Accur	acy [dB]	Conditions
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
LITDA Corrier DCCI	dBm	± 4	± 7	-9470
	dBm	± 6	± 9	-7050

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 [14 slots is FFS]. UTRA Carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.3.1.2.

Parameter	Unit	Test 1		Test 2		Test 3	
Farameter	Unit	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/lor	dB	-1	0	-10		-10	
PCCPCH_Ec/lor	dB	-1	2	-12		-12	
SCH_Ec/lor	dB	-1	2	-12		-12	
PICH_Ec/lor	dB	-15		-15		-15	
DPCH_Ec/lor	dB	-15	-	-6	-	-6	-
OCNS_Ec/lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
loc	dBm/ 3.84 MHz	-52.22	-52.22	-70.27	-70.27	-94.46	-94.46
Îor/loc	dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/lo, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
Io, Note 1	dBm/3.84 MHz	-50	-50	-69	-69	-94	-94
Propagation condition	-	AWGN AWGN AWGN			GN		
NOTE 1: CPICH Ec/lo and lo 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.							

Table 8.7.3.1.2: UTRA Carrier RSSI Inter frequency test parameters

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.

8.7.3.1.4.2 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 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.
- 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 8.7.3.1.2 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 5) 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 5) above is 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 default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

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

Information Element	Value/Remark
Message Type	Value/Kemark
Wessage Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	240 CFN
	Not Present
-New C-RINTI RRC State Indicator	
LITRAN DRY cycle longth coefficient	Not Procent
-OTRAN DRX cycle length coefficient	
-CN Information info	Not Present
LITRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhvCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
- I ransmission gap pattern sequence	4
-IGPSI TOPS Status Floa	1 A otivo
TOPS Status Flag	Active Not Procent
-Transmission gan nattern sequence	Not Flesent
configuration parameters	
-TGMP	FDD measurement
-TGPRC	Not present
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	
-Downlink compressed mode method	57/2 SE/2
-opiink compressed mode method	
	30
-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 Nat Dresent
-PDSCH with SHO DCH Into	Not Present
-FUSCH code mapping	NUL FIESEIIL

-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	0
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	64
-Code number	63
-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 Floment	Value/Bomark
	value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Inter-frequency measurement	
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	
-Remove all inter-frequency cells	Not Present
 Remove some inter-frequency cells 	Not Present
 Removed inter-frequency cells 	
-Inter-frequency cell id	
-No inter-frequency cells removed	Not Present
-New inter-frequency cells	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
 Measurement quantity for frequency quality 	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	IRUE
-Non frequency related cell reporting quantities	- ·
-SEN-SEN observed time difference reporting	Туре 1
Indicator	TRUE
-Cell synchronisation information reporting	IRUE
Indicator	TOUE
-CHOICE III0000	
-CFICH EC/NO reporting indicator	
-CFICH RSCF reporting indicator	
Poporting coll status	IROE
-CHOICE reported cell	Penort all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	2
-Measurement validity	Not Present
-Inter-frequency set undate	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	Acknowledged mode RI C
-Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurements list	Not Present
Physical channel information elements	
-DPCH compressed mode status info	
-TGPS reconfiguration CFN	240
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Active
-TGCFN	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) shall be added into the required accuracy defined in subclause 8.7.3.1.2 as shown in table 8.7.3.1.3.

		Accura	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dBm	-45.2	-78.2	-9487
UTRA Carrier RSSI	dBm	± 4	± 7	-8770
	dBm	± 6	± 9	-7050

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

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.

8.7.3.2 Relative measurement accuracy requirement

8.7.3.2.1 Definition and applicability

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

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

8.7.3.2.2 Minimum Requirements

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

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

Table 8.7.3.2.1: UTRA Carrier RSSI Inter frequency relative accuracy

		Accura	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
UTRA Carrier RSSI	dBm	± 7	± 11	-9450

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.

167

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 [14 slots is FFS]. UTRA Carrier RSSI relative accuracy requirements are tested by using test parameters in table 8.7.3.1.2.

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 8.7.3.1.2.

8.7.3.2.4.2 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 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.
- 6) The result of step 5) is compared to actual power level difference of UTRA Carrier RSSI of Channel 1 and Channel 2.
- 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, 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 8.7.3.1.2 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, 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 default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], 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) shall be added into the required accuracy defined in clause 8.7.3.2.2 as shown in table 8.7.3.2.2.

168

		Accur	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dBm	-45.2	-78.2	-9487
UTRA Carrier RSSI	dBm	± 4	± 7	-8770
	dBm	± 6	± 9	-7050

Table 8.7.3.2.2: UTRA Carrier RSSI relative accuracy

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

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.

8.7.3A GSM Carrier RSSI

8.7.3B Transport channel BLER

8.7.3C UE transmitted power

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 $|_{dBm} \ge -114 \text{ dBm}.$

$$\begin{aligned} \left| CPICH _RSCP1 \right|_{in \ dBm} - CPICH _RSCP2 \right|_{in \ dBm} \right| &\leq 20 dB \\ \hline \left. \frac{I_o}{\left(\hat{l}_{or} \right)} \right|_{in \ dB} \quad - \quad \left(\frac{CPICH _E_c}{I_{or}} \right)_{in \ dB} \leq 20 dB \\ \hline \left. \frac{I_o}{\left(\hat{l}_{or} \right)} \right|_{in \ dB} \quad - \quad \left(\frac{P - CCPCH _E_c}{I_{or}} \right)_{in \ dB} \text{ is low enough to ensure successful SFN decoding.} \end{aligned}$$

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Parameter	Unit	Accuracy [chip]	Conditions lo [dBm]
SFN-CFN observed time difference	chip	± 1	-9450

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 fre	quency	/ test	parameters
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		Teet 4	Test 0	Teet 2			
Parameter	Unit	Test I	Test 2	Test 3			
i arameter	•	Cell 1 Cell 2	Cell 1 Cell 2	Cell 1 Cell 2			
UTRA RF Channel number		Channel 1	Channel 1	Channel 1			
CPICH_Ec/lor	dB	-10	-10	-10			
PCCPCH_Ec/lor	dB	-12	-12	-12			
SCH_Ec/lor	dB	-12	-12	-12			
PICH_Ec/lor	dB	-15	-15	-15			
DPCH_Ec/lor	dB	-15	-15	-15			
OCNS_Ec/lor	dB	-1.11	-1.11	-1.11			
Îor/loc	dB	10.5	10.5	10.5			
100		lo - 13.7 dB = loc,	Io -13.7 dB = Ioc,	lo - 13.7 dB = loc,			
100		Note 1		Note 1			
lo	dBm	-50	-72	-94			
Propagation condition	-	AWGN	AWGN AWG				
NOTE 1: loc level shall be adjusted according the total signal power lo at receiver input and the geometry factor							
Îor/loc.							
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.							

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 8.7.4.1.2.

8.7.4.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT message.
- 3) 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.

- 4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 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 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 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 from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message for intra frequency measurement

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Intra-frequency measurement	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-SFN-SFN observed time difference reporting	
indicator	No report
-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	TRUE
 Reporting quantities for monitored set cells 	
-SFN-SFN observed time difference reporting	No report
indicator	
-Cell synchronisation information reporting	TRUE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
 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	2
-Measurement validity	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurements list	Not Present
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

The SFN-CFN observed time difference measurement accuracy shall meet the requirements in clause 8.7.4.1.2.

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

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 $|_{dBm} \ge -114 \text{ dBm}.$

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

| Channel 1_Io|_{dBm} -Channel 2_Io|_{dBm} | \leq 20 dB.

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

Table 8.7.4.2.1

Baramotor	Unit		Conditions
Farameter	Unit	Accuracy [chip]	lo [dBm]
SFN-CFN observed time difference	chip	± 1	-9450

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. Table 8.7.4.2.2 defines the limits of signal strengths and code powers, where the requirement is applicable.

Parameter	Unit	Tes	Test 1		Test 2		Test 3	
Farallieler	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
		Channel	Channel	Channel	Channel	Channel	Channel	
		1	2	1	2	1	2	
CPICH_Ec/lor	dB	-1	0	-10		-10		
PCCPCH_Ec/lor	dB	-1	2	-1	2	-1	2	
SCH_Ec/lor	dB	-1	2	-1	2	-1	2	
PICH_Ec/lor	dB	-1	5	-15		-15		
DPCH_Ec/lor	dB	-1	5	-15		-15		
OCNS_Ec/lor	dB	-1.	11	-1.11		-1.11		
Îor/loc	dB	10.1		10.1 10.1		10	.1	
loc		lo –10.6	dB = loc,	lo –10.6	dB = loc,	lo –10.6	dB = loc,	
	UDITI/ 3.04 IVII 12	Not	e 1	No	te 1	Not	e 1	
lo	dBm	-50		-50 -72		-9	4	
Propagation condition	-	AWGN AWGN AWGN			GN			
NOTE 1: loc level shall be adjusted in each carrier frequency according the total signal power lo at receiver input								
and the geometry factor <i>lor/loc</i> .								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests								

Table 8.7.4.2.2: SFN-CFN observed time difference Inter frequency tests parameters

2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

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 8.7.4.2.2.

8.7.4.2.4.2 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 "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.
- 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 8.7.4.2.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.2.2 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, steps 4) and 5) above are repeated.
- 7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for inter frequency measurement

Information Element	Value/Remark
	Value/Keinark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	240 CFN
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Active
-TGCEN	Not Present
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	FDD measurement
-TGPRC	Not present
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	В
-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	0
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	64
-Code number	63
-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	
LIE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Inter-frequency measurement	
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	
-Remove all inter-frequency cells	Not Present
-Remove some inter-frequency cells	Not Present
-Removed inter-frequency cells	
-Inter-frequency cell id	
-No inter-frequency cells removed	Not Present
-New Inter-frequency cells	Not Present
-Cell for measurement quantity	NOLFIESEIIL
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	
-CHOICE mode	FDD
-Measurement quantity for frequency quality	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-SFN-SFN observed time difference reporting	No report
indicator	
-Cell synchronisation information reporting	TRUE
Indicator	TRUE
-Cell Identity reporting indicator	
CPICH Ec/N0 reporting indicator	
-CPICH RSCP reporting indicator	
-Pathloss reporting indicator	TRUE
-Reporting cell status	INOL .
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	Acknowledged mode RLC
Mode	Periodical reporting
	Not Present
Physical channel information elements	Not resent
-DPCH compressed mode status info	
-TGPS reconfiguration CFN	240
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Active
-TGCFN	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

The SFN-CFN observed time difference measurement accuracy shall meet the requirements in clause 8.7.4.2.2.

If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied NOTE: 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 $|_{dBm} \ge -114 \text{ dBm}.$

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

$$\xrightarrow{I_o} = \left(\frac{CPICH _E_c}{CPICH _E_c} \right) \le 20 dB$$

$$\left(\hat{I}_{or} \right)_{in \ dB} \qquad \left(I_{or} \right)_{in \ dB} = 2000$$

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

 I_{or}

 $\int_{in \ dB}$ is low enough to ensure successful SFN decoding.

Table 8.7.5.1.1

Baramotor	Unit		Conditions
Faranieter	Onit	Accuracy [cliip]	lo [dBm]
SFN-SFN observed time difference type1	chip	± 1	-9450

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.1
- 2) 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 8.7.5.1.2.

In this case all cells are in the same frequency. Table 8.7.5.1.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table 8.7.5.1.2: SFN-SFN observed time difference type 1 Intra frequency test parameters

Baramatar	Unit	Test 1	Test 2	Test 3	
Farameter	Unit	Cell 1 Cell 2	Cell 1 Cell 2	Cell 1 Cell 2	
UTRA RF Channel number		Channel 1	Channel 1	Channel 1	
CPICH_Ec/lor	dB	-10	-10	-10	
PCCPCH_Ec/lor	dB	-12	-12	-12	
SCH_Ec/lor	dB	-12	-12	-12	
PICH_Ec/lor	dB	-15	-15	-15	
DPCH_Ec/lor	dB	-15	-15	-15	
OCNS_Ec/lor	dB	-1.11	-1.11	-1.11	
Îor/loc	dB	10.5	10.5	10.5	
100	dBm/2.04 MU-	Io -13.7 dB = Ioc,	Io -13.7 dB = Ioc,	lo - 13.7 dB = loc,	
100		Note 1	Note 1	Note 1	
lo	dBm	-50	-72	-94	
Propagation condition	-	AWGN	AWGN	AWGN	
NOTE 1: loc level shall be adju	isted according the to	tal signal power lo a	t receiver input and th	e geometry factor	
Îor/loc.	-	-			

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) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT message.
- 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.
- 4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.2 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 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.2 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 from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], 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	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Intra-frequency measurement	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-SFN-SFN observed time difference reporting	
indicator	Туре 1
-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	TRUE
 Reporting quantities for monitored set cells 	
-SFN-SFN observed time difference reporting	Туре 1
indicator	
-Cell synchronisation information reporting	TRUE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
 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
-iviaximum number of reported cells	Z Nat Descent
-Measurement validity	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
-Measurement Reporting Mode	
-ivieasurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurements list	Not Present
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.

8.7.5.1.5 Test requirements

The SFN-SFN observed time difference type 1 accuracy shall meet the requirements in clause 8.7.5.1.2.

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

8.7.5.2 SFN-SFN observed time difference type 2

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

Baramotor	Unit	Accuracy [chin]	Conditions
Farameter	Unit	Accuracy [chip]	lo [dBm/3.84Mz]
UE RX-TX time difference	chip	± 1.5	-9450

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
- 2) 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 8.7.6.1.2 for Test 1.

Parameter	Unit	Test 1	Test 2	Test 3	
Farameter	Unit	Cell 1	Cell 1	Cell 1	
UTRA RF Channel number		Channel 1	Channel 1	Channel 1	
CPICH_Ec/lor	dB	-10	-10	-10	
PCCPCH_Ec/lor	dB	-12	-12	-12	
SCH_Ec/lor	dB	-12	-12	-12	
PICH_Ec/lor	dB	-15	-15	-15	
DPCH_Ec/lor	dB	-15	-15	-15	
OCNS	dB	-1.11	-1.11	-1.11	
Îor/loc	dB	10.5	10.5	10.5	
les	dBm/ 2.84 MHz	lo - 10.9 dB = loc,	lo - 10.9 dB = loc,	lo - 10.9 dB = loc,	
100	UDITI/ 3.04 WITZ	Note 1	Note 1	Note 1	
lo	dBm/3.84 MHz	-94	-72	-50	
Propagation condition	-	AWGN	AWGN	AWGN	
NOTE 1: <i>loc</i> level shall be adjusted according the total signal power spectral density <i>lo</i> at receiver input and the					
geometry factor <i>lor/loc</i> .					

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

8.7.6.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT message.
- 3) 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.
- 4) The RF parameters are set up according table 8.7.6.1.2 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.
- 5) Step 3) above shall be repeated.
- 6) The RF parameters are set up according table 8.7.6.1.2 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.
- 7) Step 3) above shall be repeated.
- 8) 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] and Annex A of 34.123-1 [21] 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	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Setup
-CHOICE Measurement type	UE Internal measurement
-UE Internal measurement quantity	
-CHOICE mode	FDD
-Measurement quantity	UE Rx-Tx time difference
-Filter coefficient	0
-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
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
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.

8.7.6.1.5 Test requirements

The UE Rx-Tx time difference accuracy shall meet the requirements in clause 8.7.6.1.2.

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

8.7.7 Observed time difference to GSM cell

Void

8.7.8 P-CCPCH HRSCP

Void

3GPP

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	CHANGE REQUEST					
ж	34.121	CR 157	ж rev	- *	Current versi	on: 3.8.0 [¥]
For <u>HELP</u> on us	sing this fo	rm, see bottom	of this page or	look at the	pop-up text	over the X symbols.
Proposed change a	affects: ¥	(U)SIM	ME/UE X	Radio Acc	cess Network	Core Network
Title: ೫	Inter-syst	em Handover fr	om UTRAN F	DD to GSM		
Source: ೫	T1-RF					
Work item code: ℜ					Date: ೫	23 May, 2002
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Reason for change: # DL reference measurement channel (12.2 kbps) and DL reference compressed mode parameters are is defined in 34.121 Annex C and in 25.101 Annex A. The reference to 34.121 is preferred. Summary of change: # The references to 25.101 are replaced by references to 34.121 in table 8.3.4.3.						
Consequences if not approved:	ж <mark>Inco</mark>	nsistency with c	other test cases	<mark>s in 34.121.</mark>		
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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 <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

8.3.4 Inter-system Handover from UTRAN FDD to GSM

8.3.4.1 Definition and applicability

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

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

8.3.4.2 Minimum requirement

The hard handover delay shall be less than 40 ms. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

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. The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms.

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	90
HANDOVER FROM UTRAN COMMAND is received	
The UE has not synchronised to the GSM cell before	190
the HANDOVER FROM UTRAN COMMAND is received	

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	40
HANDOVER FROM UTRAN COMMAND is received	
The UE has not synchronised to the GSM cell before	140
the HANDOVER FROM UTRAN COMMAND is received	

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

8.3.4.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.4.4 Method of test

8.3.4.4.1 Initial conditions

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

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

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

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

UTRAN shall send a HANDOVER FROM UTRAN COMMAND well in advance to T3 with activation time at T3. In GSM Handover command contained in that message, IE starting time shall not be included.

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel	As specified in TS 25.101 [1]34.121
		12.2 kbps	section AC.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns			
- GSM carrier RSSI		DL Compressed mode reference	As specified in TS 25.101 [1]34.121
measurement		pattern 2 in Set 2	section AC.5, table A.22C.5.2
- GSM Initial BSIC identification		Pattern 2	As specified in section TS 25.133 [2] 8.1.2.5.2.1 table 8.7.
- GSM BSIC re- confirmation		Pattern 2	As specified in section TS 25.133 [2] 8.1.2.5.2.2 table 8.8.
Active cell		Cell 1	
Inter-RAT		GSM Carrier RSSI	
measurement			
quantity			
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		24 FDD neighbours on Channel 1	Measurement control information is
size		6 GSM neighbours including ARFCN 1	sent before the compressed mode patterns starts.
N Identify abort		65	Taken from TS 25.133 [2] 8.1.2.5.2.1 table 8.7.
T Reconfirm abort		5.0	Taken from TS 25.133 [2] 8.1.2.5.2.2 table 8.8.
T1	S	20	
T2	S	5	
Т3	S	5	

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

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/lor	dB	-10			
PCCPCH_Ec/lor	dB	-12			
SCH_Ec/lor	dB	-12			
PICH_Ec/lor	dB	-15			
DCH_Ec/lor	dB	Note 1			
OCNS_Ec/lor	dB	Note 2			
\hat{I}_{or}/I_{oc}	dB	0			
I _{oc}	dBm/3. 84 MHz	-70			
CPICH_Ec/lo	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 _a					

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

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

8.3.4.4.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1.
- 2) The UE is switched on
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4
- 4) The RF parameters for cell 2 are set up according to T1 and the SS configures a traffic channel
- 5) SS shall transmit a MEASUREMENT CONTROL message to cell 1
- 6) After 20 seconds, the SS shall switch the power settings from T1 to T2
- 7) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C
- 8) SS shall transmit a HANDOVER FROM UTRAN COMMAND message with activation time at T3 and indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell.
- 9) After 5 seconds, the SS shall switch the power settings from T2 to T3
- 10) UE shall transmit a burst on the traffic channel of cell 2 implying that it has switched to the GSM cell. The UE sends a HANDOVER ACCESS message. If the UE transmits access bursts on the new DCCH of the target cell less than 40 ms from the beginning of time period T3, then the number of successful tests is increased by one.

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

11) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

12)Repeat step 1-11 [TBD] times

Specific Message Contents

All messages indicated belowabove shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message (step 5):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	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	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
 Measurement quantity for UTRAN quality estimate 	
(10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH Ec/N0
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Required
-Inter-RAT reporting quantity (10.3.7.32)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within
	virtual active set or of the other RAI
-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	
-Inter-RAT event identity (10.3.7.24)	Event 3C
- I hreshold own system	Not Present
	Not Present
- I nresnold other system	-80 dBm
-Hysteresis	0 dB
- I lime to trigger	0 ms
-Keponing cell status (10.3.7.61)	Depart calls within active act any ithin
	Report cells within active set or within
-waximum number of reported cells	2
Physical channel information elements	Not Decout
-DPCH compressed mode status into (10.3.6.34)	NOT Present

HANDOVER FROM UTRAN COMMAND message (step 8):

Information Element	Value/remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Activation time	At T3
RB information elements	
-RAB information list	1
-RAB Info	Not present
Other information elements	
-CHOICE System type	GSM
-Frequency Band	GSM/DCS 1800 Band
-GSM message	
-Single GSM message	[TBD]
-GSM message List	GSM HANDOVER COMMAND formatted as BIT STRING(1512). The contents of the HANDOVER COMMAND see next table

HANDOVER COMMAND

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

MEASUREMENT REPORT message for Inter-RAT test cases

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

8.3.4.5 Test requirements

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

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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Proposed change	affects: ೫	(U)SIM	ME/UE X	Radio Ac	cess Network	Core Network
Title: ೫	UTRAN t	o GSM Cell Re-	Selection: Cha	ange of mi	nimum requirem	ents
Source: ೫	T1-RF					
Work item code: भ					Date: ೫ 2	<mark>3 May, 2002</mark>
Category: ₩	F Use <u>one</u> of F (cor A (cor B (add C (fur D (edi Detailed ex be found in	the following cate rection) responds to a co dition of feature), ctional modification planations of the 3GPP <u>TR 21.900</u>	egories: rrection in an ea on of feature) n) above categorie).	<i>rlier release</i> s can	Release: # R Use one of the 2 (GS 8) R96 (Re R97 (Re R98 (Re R99 (Re R2 (Re R98 (Re R99 (Re REL-4 (Re REL-5 (Re	299 following releases: SM Phase 2) elease 1996) elease 1997) elease 1998) elease 1999) elease 4) elease 5)
Reason for change: # The test requirements have been changed in 25.133 A.4.3 (25.133 CR328) Summary of change: # 1) Subclause 8.2.3.1.2: Missing space character is added. 2) Subclause 8.2.3.2.2 is Updated according to 25.133. 3) Subclause 8.2.3.2.4.2 step 5): UE response time is increased from 6 to 8.5						
Consequences if not approved:	¥ 25.1	33 and 34.121	are inconsister	nt		
Clauses affected:	೫ <mark>8.2.3</mark>	3				
Other specs affected:	# O T O	ther core specif est specificatior &M Specificatic	ications # Is Ins	8		
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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 <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2.3 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 $26 \text{ s} + T_{BCCH}$, where T_{BCCH} is the maximum time allowed to read BCCH data from GSM cell TS 05.08 [20].

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

NOTE: The cell re-selection delay can be expressed as: $4 \text{ * } T_{\text{measureGSM}} + T_{\text{BCCH}}$, where:

TmeasureGSMSee Table 4.1 in TS 25.133 [2] clause 4.2.2.TBCCHMaximum time allowed to read BCCH data from GSM cell TS 05.08 [20].According to [20], the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.

This gives a total of 25.6 s + T_{BCCH} , allow 26 s + T_{BCCH} in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2 and A.4.3.1.

8.2.3.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.3.1.4 Method of test

8.2.3.1.4.1 Initial conditions

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

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

This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected. 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: General tes	parameters for UTRAN to	GSM Cell Re-selection
------------------------------	-------------------------	-----------------------

Pa	arameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cell		Cell2	
Final	Active cell		Cell2	
condition				
DRX cycle	length	S	1.28	
T1		S	[TBD]	
T2		S	[TBD]	

Parameter	Unit	Cell 1 (UTRA)	
		T1	TŹ
UTRA RF Channel Number		Channel 1	
CPICH_Ec/lor	dB	-10	
PCCPCH_Ec/lor	dB	-12	
SCH_Ec/lor	dB	-12	
PICH_Ec/lor	dB	-15	
OCNS_Ec/lor	dB	-0.941	
\hat{I}_{or}/I_{oc}	dB	0	-5
I _{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/lo	dB	-13	-16.2
CPICH_RSCP	dBm	-80	-85
Propagation Condition		AWGN	
Cell_selection_and_ reselection_quality_measure		CPICH E _c /N	No
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
Qoffset1 _{s, n}	dB	C1, C2: 0	
Qhyst1	dB	0	
PENALTY_TIME	S	C2: 0	
TEMPORARY_OFFSET1	dB	C2: 0	
Treselection	S	0	
Ssearch _{RAT}	dB	not sent	

Table 8.2.3.1.2: Cell re-selection UTRAN to GSM cell case (cell 1)

Table 8.2.3.1.3: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
Farameter	Unit	T1	T2
Absolute RF Channel Number		ARFCN 1	1
RXLEV	dBm	-90	-75
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	3

8.2.3.1.4.2 Procedure

- 1) The SS activates cell 1 and 2 with T1 defined parameters and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) The SS waits for random access requests from the UE on cell 1.
- 4) After T1 s, the parameters are changed as described for T2.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 28 s then the number of successful tests is increased by one.
- 6) After T2 s, the parameters are changed as described for T1.
- 7) The SS waits for random access requests from the UE on cell 1.
- 8) Repeat step 4) to 7) [TBD] times.

8.2.3.1.5 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 [FFS]%.

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 $4-\underline{6.5}$ s + T_{BCCH}, where T_{BCCH} is the maximum time allowed to read BCCH data from GSM cell TS 05.08 [20].

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

NOTE: The cell re-selection delay can be expressed as: $Max(3*T_{measureFDD}, T_{measureGSM}) + T_{BCCH}$, where:

TmeasureFDDSee Table 4.1 in TS 25.133 [2] clause 4.2.2.TmeasureGSMSee Table 4.1 in TS 25.133 [2] clause 4.2.2.TBCCHMaximum time allowed to read BCCH data from GSM cell TS 05.08 [20].According to [20], the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.

This gives a total of $\frac{3.846.4}{5.8}$ s + T_{BCCH}, allow 4-6.5 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. 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.

Pa	arameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cell		Cell2	
Final condition	Active cell		Cell2	
DRX cycle	length	S	1.28	
T1		S	45	
T2		S	10	

Table 8.2.3.2.1: General test parameters for UTRAN to GSM Cell Re-selection

Table 8.2.3.2.2: Cell re-selection UTRAN to GSM cell case (c	ell '	1))
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Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/lor	dB	-10	
PCCPCH_Ec/lor	dB	-12	
SCH_Ec/lor	dB	-12	
PICH_Ec/lor	dB	-15	
OCNS_Ec/lor	dB	-0.941	
\hat{I}_{or}/I_{oc}	dB	20	-9
I _{oc}	dBm/3.84 MHz	-81	
CPICH_Ec/lo	dB	-10.0	-19.5
CPICH_RSCP	dBm	-70	-100
Propagation Condition		AWGN	
Cell_selection_and_ reselection_guality_measure		CPICH E	/N ₀
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
Qoffset1 _{s, n}	dB	C1, C2: 0	
Qhyst1	dB	0	
PENALTY_TIME	S	C2: 0	
TEMPORARY_OFFSET1	dB	C2: 0	
Treselection	S	0	
Ssearch _{RAT}	dB	not sent	

Table 8.2.3.2.3: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2	(GSM)
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-80	-80
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

8.2.3.2.4.2 Procedure

- 1) The SS activates cell 1 and 2 with T1 defined parameters and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) The SS waits for random access requests from the UE on cell 1.
- 4) After 45 s, the parameters are changed as described for T2.

- 5) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 6-8.5 s then the number of successful tests is increased by one.
 - 6) After 10 s, the parameters are changed as described for T1.
 - 7) The SS waits for random access requests from the UE on cell 1.
 - 8) Repeat step 4) to 7) [TBD] times.

8.2.3.2.5 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 [FFS]%.

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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		C (fun	ctional	modificati	ion of featu	re)			F	298	(Rel	ease	1998)	
		D (edi	torial m	odificatio	n)	,			F	299	(Rel	ease	1999)	
	Deta	iled ex	olanatio	ns of the	above cate	eaorie	s can		F	REL-4	(Rel	ease	4)	
	be fo	und in	3GPP 1	FR 21.900	0.).	gene	0 00		F	REL-5	(Rel	ease	5)	
										_	1 -		- /	
Reason for chang	e: #	Test	Requir	ements	are missi	na.								
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Summary of chan	ge: Ж	Test	Requi	rements	are includ	led.								
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Consequences if	ж	Test	could	tail "good	d UEs" be	cause	eTes	t Re	quirem	ents c	lifter	rom 1	the M	inimum
not approved:		Requ	uireme	nts										
Clauses affected	9 0	820)											
Giauses arrecteu.	ማ	0.2.2												
Other specs	ж	0	ther co	re speci	fications	Ħ								

Other comments: # Isolated Impact Analysis: Does not affect implementation of the UE.

Test specifications

O&M Specifications

How to create CRs using this form:

affected:

3GPP TSG-T1 Meeting #15

Lund, Sweden, 2002-05-24

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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
- 8.2 Idle Mode Tasks
- 8.2.1 Cell Selection

Void.

- 8.2.2 Cell Re-Selection
- 8.2.2.1 Scenario 1: Single carrier case

8.2.2.1.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the RRC CONNECTION REQUEST message to perform a Location Registration on the new cell.

The requirements and this test apply to the FDD UE.

8.2.2.1.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

TevaluateFDD	See Table 4.1 in TS 25.133 [2] clause 4.2.2.
Tsi	Maximum repetition period of relevant system info blocks that needs to be received
	by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2.2 and A.4.2.1.

8.2.2.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.2.1.4 Method of test

8.2.2.1.4.1 Initial conditions

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

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

This scenario implies the presence of 1 carrier and 6 cells as given in tables 8.2.2.1.1 and 8.2.2.1.2. The UE is requested to monitor neighbouring cells on 1 carrier. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.1.1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter	Unit	Value	Comment
Access Service Class (ASC#0)			Selected so that no additional delay is
- Persistence value	-	1	caused by the random access
			procedure. The value shall be used for
			all cells in the test.
DRX cycle length	S	1,28	The value shall be used for all cells in
			the test.
T1	S	15	T1 need to be defined so that cell re-
			selection reaction time is taken into
			account.
T2	S	15	T2 need to be defined so that cell re-
			selection reaction time is taken into
			account.

Table 8.2.2.1.2: Test parameters for Cell re-selection single carrier multi cell

Parameter	Unit	C	ell 1	Cell 2		Cell 3		Cell 4		Ce	II 5	Cell 6		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		
Number		Channel I				Channel 1								
CPICH_Ec/lor	dB	-10		-10		-10		-10		-10		-10		
PCCPCH_Ec/lor	dB	-12		-12		-12		-12		-12		-12		
SCH_Ec/lor	dB	-12		-12		-12		-12		-12		-12		
PICH_Ec/lor	dB	-15		-15		-15		-15		-15		-15		
OCNS_Ec/lor	dB	-0,94		-0,941		-0,94	1	-0,941		-0,941		-0,941		
\hat{I}_{or}/I_{oc}	dB	7,3	10,27	10,27	7,3	0,27		0,27		0,27	0,27		0,27	
I _{oc}	dBm / 3,84 MHz	-70	-70											
CPICH_Ec/lo	dB	-16	-13	-13	-16	-23	-23			-23		-23		
Propagation							۵\۸/	2N						
Condition							~~~							
Cell_selection_and_														
reselection_quality_		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH	E _c /N ₀	
measure														
Qqualmin	dB	-	20	-20		-20		-20		-20		-20		
Qrxlevmin	dBm	-*	-115 -115		15	- '	115	-115		-115		-115		
UE_TXPWR_MAX_ RACH	dB	:	21 21		1		21	21		21		21		
		C1, C2: 0 C2, C1: 0		C3, C1: 0 C4		C4, 0	C4, C1: 0 C5, C1: 0		C1: 0	C6, C1: 0				
		C1,	1, C3: 0 C2, C3: 0		C3: 0	C3, C2: 0		C4, C2: 0		C5, C2: 0		C6, C2: 0		
Qoffset2 _{s, n}	dB	C1,	C4: 0	C2, C4: 0		C3,	C4: 0	C4, C3: 0		C5, C3: 0		C6, C3: 0		
		C1,	C5: 0	C2, C5: 0		C3,	C3, C5: 0 C4, C5: 0		C5: 0	C5, C4: 0		C6, C4: 0		
		C1,	C1, C6: 0 C2, C6: 0		C3, C6: 0 C4		C4, 0	C4, C6: 0		C5, C6: 0		C6, C5: 0		
Qhyst2	dB		0	0		0		0		0		0		
PENALTY_TIME	S		0	0		0		0		0		0		
TEMPORARY_OFF SET2	dB	0		0		0		0		0		0		
Treselection	S		0	0			0		0		0)	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not	sent	not sent		
8.2.2.1.4.2 Procedure

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.2.2.1.3 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) The SS waits for random access requests from the UE on cell 2.
- 4) After 15 s, the parameters are changed as described for T2 in table 8.2.2.1.3.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 1 within 8 s then the number of successful tests is increased by one.
- 6) After another 15 s, the parameters are changed as described for T1 in table 8.2.2.1.3.
- 7) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 8 s then the number of successful tests is increased by one.
- 8) Repeat step 4) to 7) [TBD] times.

8.2.2.1.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of [FFS]% of the cases.

Parameter	Unit	Ce	ell 1	Ce	<u>ll 2</u>	Ce	ell <u>3</u>	Cell	4	C	ell <u>5</u>	Ce	ell 6
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
<u>UTRA RF Channel</u> Number		Chan	nel 1	Channe	<u>el 1</u>	Chanr	<u>nel 1</u>	Channel 1		Chan	<u>nel 1</u>	Chan	<u>nel 1</u>
CRICH Ec/lor	dB	-10.1	-9.9	-9.9	-10.1	-10		-10		-10		-10	
PCCPCH Ec/lor	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/lor	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/lor	dB	-15		-15		-15		-15		-15		-15	
OCNS_Ec/lor	dB	-0.928	-0.953	-0.953	-0.928	-0.941	-	-0.941		-0.94	<u>1</u>	-0.941	_
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>7</u>	<u>10.57</u>	<u>10.57</u>	<u>7</u>	<u>0.27</u>		<u>0.27</u>		<u>0.27</u>		<u>0.27</u>	
I _{oc}	<u>dBm /</u> <u>3.84 MHz</u>	<u>-70</u>	<u>-70</u>										
CPICH_Ec/lo	<u>dB</u>	<u>-16.4</u>	<u>-12.7</u>	<u>-12.7</u>	<u>-16.4</u>	<u>-23.1</u>		<u>-23.1</u>		-23.1		<u>-23.1</u>	
Propagation Condition			AWGN										
Cell_selection_and		CDIC		СЛІСЦ		CDICL			= /NL	CDIC		CDICI	
measure			<u>n e_c/in</u> 0		$\underline{L}_{\underline{c}/\underline{IN}\underline{0}}$		$\underline{T} \underline{C}/\underline{IN}_{0}$		<u>=c/IN0</u>		$\square \square \square \square \square \square$		$\underline{T} \underline{C}/\underline{IN}_{0}$
<u>Qqualmin</u>	<u>dB</u>	-	<u>20</u>	-2	20		<u>20</u>	<u>-20</u>		-	- <u>20</u>	-	<u>20</u>
<u>Qrxlevmin</u>	<u>dBm</u>	-1	1 <u>15</u>	-1	<u>15</u>	-1	<u>15</u>	-11	5	-	<u>115</u>	<u>-1</u>	15
<u>UE_TXPWR_MAX_</u> RACH	<u>dB</u>	4	<u>21</u>	2	<u>:1</u>	2	<u>21</u>	<u>21</u>			<u>21</u>	4	<u>21</u>
		<u>C1,</u>	<u>C2: 0</u>	<u>C2,</u>	<u>C1: 0</u>	<u>C3,</u>	<u>C1: 0</u>	<u>C4, C</u>	<u>1:0</u>	<u>C5,</u>	<u>C1: 0</u>	<u>C6,</u>	<u>C1: 0</u>
Ooffeet2	dB	$\frac{C1}{C1}$	$\frac{C3:0}{C4:0}$	$\frac{02}{2}$	<u>23:0</u> 24:0	$\frac{U3}{C2}$	$C_{2:0}$	$\frac{C4, C}{C4, C}$	<u>2:0</u> 2:0	<u>C5</u>	$\frac{02:0}{02:0}$	<u>C6</u>	$\frac{02:0}{02:0}$
<u>QUIISELZs, n</u>		$\frac{O1}{C1}$	$\frac{04.0}{05.0}$	$\frac{02}{C2}$	$\frac{04.0}{5.0}$	$\frac{0.3}{0.3}$	$C_{5} 0$	$\frac{C4, C}{C4, C}$	<u>5.0</u> 5.0	<u>C5</u>	$C4 \cdot 0$	<u>C6</u>	$C4 \cdot 0$
		<u>C1.</u>	<u>C6: 0</u>	C2.	<u>C6: 0</u>	<u>C3.</u>	<u>C6: 0</u>	C4. C0	<u>5: 0</u> 5: 0	<u>C5.</u>	C6: 0	<u>C6.</u>	C5: 0
Qhyst2	dB		0	0			0	0			0		0
PENALTY_TIME	S		0	()		0	0			0		0
TEMPORARY_OFF SET2	<u>dB</u>		<u>0</u>	9	<u>)</u>		<u>0</u>	<u>0</u>			<u>0</u>		<u>0</u>
Treselection	<u>s</u>		0	(2		0	0			0		0
Sintrasearch	dB	<u>n</u> ot	sent	not	sent	not	sent	not se	ent	not	t sent	<u>not</u>	sent

Table 8.2.2.1.3: Test parameters for Cell re-selection single carrier multi cell.

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.

8.2.2.2 Scenario 2: Multi carrier case

8.2.2.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the RRC CONNECTION REQUEST message to perform a Location Registration on the new cell.

The requirements and this test apply to the FDD UE.

8.2.2.2.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

TevaluateFDD	See Table 4.1 in TS 25.133 [2] clause 4.2.2.
T _{SI}	Maximum repetition period of relevant system info blocks that needs to be received by
	the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2.3 and A.4.2.2.

8.2.2.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.2.2.4 Method of test

8.2.2.2.4.1 Initial conditions

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

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

This scenario implies the presence of 2 carriers and 6 cells as given in tables 8.2.2.2.1 and 8.2.2.2.2. The UE is requested to monitor neighbouring cells on 2 carriers. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.2.1: General test parameters for Cell Re-selection in multi carrier case

Parameter	Unit	Value	Comment
Access Service Class (ASC#0)			Selected so that no additional delay is caused by
 Persistence value 	-	1	the random access procedure. The value shall be
			used for all cells in the test.
DRX cycle length	S	1,28	The value shall be used for all cells in the test.
T1	S	30	T1 need to be defined so that cell re-selection
			reaction time is taken into account.
T2	S	15	T2 need to be defined so that cell re-selection
			reaction time is taken into account.

Parameter	Unit	Cel	11	Cel	12	Cel	13	Ce	ell 4	Cel	15	Ce	ell 6
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Chan	Channel 1 Channel		nel 2	Channel 1		Channel 1		Chan	nel 2	Chai	nnel 2
CPICH_Ec/lor	dB	-1	0	-1	0	-1	0	-	10	-10		-10	
PCCPCH_Ec/lor	dB	-1	2	-1	2	-1	2		12	-1	2	-	12
SCH_Ec/lor	dB	-1	2	-1	2	-1	2		12	-1	2	-	12
PICH_Ec/lor	dB	-1	5	-1	5	-1	5		15	-1	5	-	15
OCNS_Ec/lor	dB	-0.9	41	-0.9	41	-0.9	941	-0	941	-0.9	941	-0.	941
\hat{I}_{or}/I_{oc}	dB	-3.4	2.2	2.2	-3.4	-7.4	-4.8	-7.4	-4.8	-4.8	-7.4	-4.8	-7.4
I _{oc}	dBm / 3.84 MHz		-70										
CPICH_Ec/lo	dB	-16	-13	-13	-16	-2	0	-	20	-2	0	-2	20
Propagation Condition			AWGN										
Cell_selection_and_ reselection_quality_ measure		CPICH	E _c /N ₀	CPICH	E _c /N ₀	CPICH	E _c /N ₀	CPIC	H E₀/N₀	CPICH	E _c /N ₀	CPICI	Η E _c /N₀
Qqualmin	dB	-2	0	-2	0	-2	0	-20		-2	0	-	20
Qrxlevmin	dBm	-11	5	-11	5	-11	15	-1	15	-11	15	-1	15
UE_TXPWR_MAX_ RACH	dB	2′	1	2'	1	2'	1		21	2	1	2	21
		C1, C	2:0	C2, C	:1:0	C3, C	21:0	C4, C1: 0		C5, C	C1: 0	C6,	C1: 0
		C1, C	3: 0	C2, C	3: 0	C3, C	2:0	C4, C2: 0		C5, C	2: 0	C6,	C2: 0
Qoffset2 _{s, n}	dB	C1, C	:4:0	C2, C	24: 0	C3, C	24: 0	C4,	C3: 0	C5, C	3: 0	C6,	C3: 0
		C1, C	5: 0	C2, C	5: 0	C3, C	25: 0	C4,	C5: 0	C5, C	24: 0	C6,	C4: 0
		C1, C	6: 0	C2, C	6: 0	C3, C	6: 0	C4,	C6: 0	C5, C	C6: 0	C6,	<u>C5: 0</u>
Qhyst2	dB	0		0		0			0	0			0
PENALTY_TIME	S	0		0		0			0	0			0
TEMPORARY_OFF	dB	0		0		0)		0	0)		0
Treselection	S	0		0		0			0	0			0
Sintrasearch	dB	not s	sent	not s	sent	not s	sent	not	sent	not s	sent	not	sent
Sintersearch	dB	not s	ent	not s	ent	not s	sent	not	sent	not s	sent	not	sent

Table 8.2.2.2.2: Test parameters for Cell re-selection multi carrier multi cell

8.2.2.2.4.2 Procedures

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.2.2.2.3 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) The SS waits for random access requests from the UE on cell 2.
- 4) After 30 s, the parameters are changed as described for T2 in table 8.2.2.2.3.
- 5) The SS waits for random access request from the UE. If the UE responds on cell 1 within 8 s then the number of successful tests is increased by one.
- 6) After another 15 s, the parameters are changed as described for T1 in table 8.2.2.2.3.
- 7) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 8 s then the number of successful tests is increased by one.
- 8) Reduce T1 to 15 s and repeat step 4) to 7) [TBD] times.
- NOTE: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

8.2.2.2.5 Test requirements

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

Table 8.2.2.2.3: Test parameters for Cell re-selection multi carrier multi cell

	Parameter	Unit	Ce	1	Ce	11 2	Ce	3	Ce	4	Ce	11.5	Ce	11.6
	<u>r urumotor</u>	<u></u>	T1	T2	T1		T1	T2	T1	T2	T1		T1	T2
UT	RA RF Channel		Q							1.4				1.0
Nu	mber		Char	inel 1	Char	inel 2	Char	inel 1	<u>Channel 1</u>		Char	inel 2	<u>Channel Z</u>	
CP	ICH_Ec/lor	<u>dB</u>	<u>-10.1</u>	<u>-9.9</u>	<u>-9.9</u>	<u>-10.1</u>	-	1 <u>0</u>	<u>`</u>	1 <u>0</u>		1 <u>0</u>	<u>-10</u>	
PC	CPCH_Ec/lor	<u>dB</u>		<u>12</u>	_^	1 <u>2</u>	-	<u>12</u>	-	<u>12</u>		<u>12</u>	<u>-12</u>	
SC	H_Ec/lor	<u>dB</u>		<u>12</u>	<u>-'</u>	<u>12</u>		<u>12</u>		<u>12</u>		<u>12</u>		<u>12</u>
<u>PI0</u>	CH_Ec/lor	<u>dB</u>		<u>15</u>		1 <u>5</u>	-	<u>15</u>		1 <u>5</u>	- ^	1 <u>5</u>	-*	1 <u>5</u>
00	NS_Ec/lor	<u>dB</u>	-0.9 <u>28</u>	-0.953	-0.953	-0.9 <u>28</u>	<u>-0.</u>	<u>941</u>	<u>-0.9</u>	<u>941</u>	<u>-0.9</u>	<u>941</u>	<u>-0.9</u>	<u>941</u>
Î	./I _{oc}	<u>dB</u>	<u>-3.7</u>	<u>2.5</u>	<u>2.5</u>	<u>-3.7</u>	<u>-7.4</u>	<u>-4.8</u>	<u>-7.4</u>	<u>-4.8</u>	<u>-4.8</u>	<u>-7.4</u>	<u>-4.8</u>	<u>-7.4</u>
I_{oc}	<u>-</u>	<u>dBm / 3.84</u> <u>MHz</u>		<u></u> <u>70</u>										
CP	ICH_Ec/lo	dB	-16.3	-12.8	-12.8	-16.3	-19.9	-20.2	-19.9	-20.2	-20.2	-19.9	-20.2	-19.9
Pro Co	pagation ndition		<u>AWGN</u>											
<u>Ce</u> res me	I selection and election_quality_ asure		<u>CPICH</u>	<u>I E_c/N₀</u>		<u>I E_c/N₀</u>	<u>CPICH</u>	<u>I E_c/N₀</u>	<u>CPICH</u>	<u>I E_c/N₀</u>		<u>I E_c/N₀</u>		<u>I E_c/N₀</u>
Qq	ualmin	dB	-2	20	-2	20	-2	20	-20		-2	20	-2	20
Qr	devmin	dBm	-1	15	-1	15	-1	15	-115		-115		-1	15
UE RA	_TXPWR_MAX_ CH	<u>dB</u>	2	: <u>1</u>	2	<u>1</u>	2	: <u>1</u>	<u>2</u>	<u>:1</u>	2	<u>:1</u>	2	<u>1</u>
<u>Qo</u>	ffset2 _{s, n}	<u>dB</u>	<u>C1, 0</u> <u>C1, 0</u> <u>C1, 0</u> <u>C1, 0</u> <u>C1, 0</u>	C2: 0 C3: 0 C4: 0 C5: 0 C6: 0	<u>C2, 0</u> <u>C2, 0</u> <u>C2, 0</u> <u>C2, 0</u> <u>C2, 0</u>	<u>C1: 0</u> C3: 0 C4: 0 C5: 0 C6: 0	<u>C3, 0</u> <u>C3, 0</u> <u>C3, 0</u> <u>C3, 0</u> <u>C3, 0</u>	C1: 0 C2: 0 C4: 0 C5: 0 C6: 0	<u>C4, 0</u> <u>C4, 0</u> <u>C4, 0</u> <u>C4, 0</u> <u>C4, 0</u>	C1: 0 C2: 0 C3: 0 C5: 0 C6: 0	<u>C5, 0</u> <u>C5, 0</u> <u>C5, 0</u> <u>C5, 0</u> <u>C5, 0</u>	C1: 0 C2: 0 C3: 0 C4: 0 C6: 0	<u>C6, 0</u> <u>C6, 0</u> <u>C6, 0</u> <u>C6, 0</u> <u>C6, 0</u>	C1: 0 C2: 0 C3: 0 C4: 0 C5: 0
Qh	<u>yst2</u>	<u>dB</u>	(<u>)</u>	()	(<u>)</u>	()	()	()
PE	NALTY_TIME	<u>s</u>	(<u>0</u> <u>0</u>		(<u>)</u>	()	()	()	
<u>TE</u> SE	<u>MPORARY_OFF</u> T	<u>dB</u>	<u>(</u>	<u>)</u>	<u>(</u>	<u>)</u>	<u>(</u>	<u>)</u>	<u>(</u>	<u>)</u>	<u>(</u>	<u>)</u>	<u>(</u>	<u>)</u>
Tre	selection	<u>S</u>	(<u>)</u>	()	(<u>)</u>	()	<u>0</u>		()
Sin	trasearch	<u>dB</u>	not	sent	not	<u>sent</u>	not	<u>sent</u>	not	<u>sent</u>	not	<u>sent</u>	not	<u>sent</u>
Sin	tersearch	<u>dB</u>	not	<u>sent</u>	not	<u>sent</u>	<u>not</u>	<u>sent</u>	not sent		not	<u>sent</u>	not	<u>sent</u>

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.

CHANGE REQUEST								
ж	34.	<mark>121</mark> CR	160	ж ге \	- #	Current vers	sion: 3.8.0. [#]	
For HELP on using this form, see bottom of this page or look at the pop-up text over the # symbols.								
Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network								
Title:	ដ <mark>្ឋ Deri</mark>	vation of T	est Requir	ements for c	ell resellec	tion in idle mo	de (Annex F.4)	
Source:	<mark>អ T1R</mark>	F						
Work item code:	ж					Date: ೫	2002-05-22	
Category:%FRelease: %R99Use one of the following categories:Use one of the following releases:F (correction)2(GSM Phase 2)A (corresponds to a correction in an earlier release)R96(Release 1996)B (addition of feature),R97(Release 1997)C (functional modification of feature)R98(Release 1998)D (editorial modification)R99(Release 1999)Detailed explanations of the above categories canREL-4(Release 4)be found in 3GPP TR 21.900.REL-5(Release 5)								
Reason for chang	ge: ೫	Derivation	of Test R	Requirements	are missir	ng.		
Summary of char	nge: ೫	Derivation	of Test R	equirements	are include	ed.		
Consequences if not approved:	F X	Test could Requirem	l fail "good ents	UEs" becau	se Test Re	equirements di	iffer from the Minim	um
Clauses affected	: ¥	Annex F.4						
Other specs affected:	æ	Other of Test sp	ore specifi ecification pecificatio	ications s ns	Ħ			
Other comments	: X	Isolated Ir	npact Ana	lysis: Does r	ot affect in	plementation	of the UE.	

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.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.

Test	Test Minimum Requirement in TS		Test Requirement in TS 34.121
	25.101	Tolerance	
5.2 Maximum Output	Power class 1 (33 dBm)	(II) 0.7.dB	Formula: Upper Tolerance limit + TT
Power	Tolerance = $+1/-3$ dB	0.7 00	Lower Tolerance limit – TT
	Power class 2 (27 dBm)		For power classes 1-3:
	Tolerance = $+1/-3$ dB		Upper Tolerance limit = +1.7 dB
	Power class 3 (24 dBm)		Lower Tolerance limit = -3.7 dB
	Tolerance = $+1/-3$ dB		For power class 4:
	Power class 4 (21 dBm)		Upper Tolerance limit = +2.7 dB
	Tolerance = $\pm 2 \text{ dB}$		Lower Tolerance limit = -2.7 dB
5.3 Frequency Error	The UE modulated carrier frequency shall be accurate to	10 Hz	Formula: modulated carrier frequency error + TT
	carrier frequency received from the Node B.		modulated carrier frequency error = $\pm(0.1 \text{ ppm} + 10 \text{ Hz})$.
5.4.1 Open loop power control in the uplink	Open loop power control tolerance ±9 dB (Normal)	1.0 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT
	Open loop power control		For Normal conditions:
	tolerance ±12 dB (Normal)		Upper Tolerance limit = $+10 \text{ dB}$
			Lower Tolerance limit = -10 dB
			For Extreme conditions:
			Upper Tolerance limit = +13 dB
			Lower Tolerance limit = -13 dB
5.4.2 Inner loop power	See table 5.4.2.1 and 5,4,2,2	0.25dB	Formula: Upper Tolerance limit + TT
control in uplink		0.15 dB	Lower Tolerance limit – TT
		0.2 dB	
		[0.3 dB]	
5.4.3 Minimum Output	UE minimum transmit power	1.0 dB	Formula:
Power	shall be less than -50 dBm		UE minimum transmit power + 11
			UE minimum transmit power = −49 dBm

Table F.4.1: Derivation of Test Requirements (Transmitter tests)

Test	Minimum Requirement in TS	Test	Test Requirement in TS 34.121
	25.101		
5.4.4 Out-of- synchronisation handling of output power:	$\frac{DPCCH _ E_c}{I_{or}} \text{ levels}$ AB: -22 dB BD: -28 dB DE: -24 dB EF: -18 dB transmit ON/OFF time 200ms $\frac{DPDCH _ E_c}{I_{or}} = -16.6 \text{ dB}$ $\hat{I}_{or} / I_{oc} = -1 \text{ dB}$	Iolerance (TT) 0.4 dB for <u>DPCCH_E</u> I _{or} 0 ms for timing measurem ent	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 $\frac{DPDCH_E_c}{I_{or}} = -16.6 \text{ dB}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$ $\frac{DPCCH_E_c}{I_{or}} \text{ levels:}$ $AB: -21.6 \text{ dB}$ 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
5.5.1 Transmit OFF	Transmit OFF power shall be	1.0 dB	Formula: Transmit OFF power + TT
power (static case)	less than -56 dBm		Transmit OFF power = -55 dBm.
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
5 7 Down #	Variaua		Lower limit = -9.3 dB
o./ Power setting in uplink compressed mode	various	(Subset of 5.4.2)	עטו

Test	Minimum Require	ment in TS	Test	Test Requirement in	TS 34.121		
	25.101		(TT)				
5.8 Occupied Bandwidth	The occupied chanr bandwidth shall be I MHz based on a chi	nel ess than 5 p rate of	0 kHz	Formula: occupied channe TT	l bandwidth: +		
5.0 Spoctrum omission	3.84 Mcps.	nt dofinad in	1.5.dB	occupied channel bandwid	th = 5.0 MHz		
mask	TS25.101 Table 6.1 The lower limit shall / 3.84 MHz or which higher.	0. be –50 dBm ever is	1.5 08	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)	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: Mi Add zero to Requireme		Formula: Minimum Request Add zero to all the values Requirements in table 5 5.11.1b.	Ilmum Requirement+ 11 Il the values of Minimum hts in table 5.11.1a and 5.11.1b.		
	Frequency Band	Minimum Requireme nt		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.			
5.13.1 Transmit modulation: EVM	The measured EVM exceed 17.5%.	shall not	0%	Formula: EVM limit + TT EVM limit = 17.5 %			

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
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 Requi 25.10	rement in TS 01	Test Tolerance	Test Requirement in	TS 34.121	
6.2 Reference sensitivity level	for = -106.7 dBm / DPCH_Ec = -117 MHz BER limit = 0.001	/ 3.84 MHz dBm / 3.84	(TT) 0.7 dB	Formula: Îor+ TT DPCH_Ec + TT BER limit unchanged Îor = -106 dBm / 3.84 MHz DPCH_Ec = -116.3 dBm / 3.84 MHz		
6.3 Maximum input level	-25 dBm lor -19 dBc DPCH_E	c/lor	0.7 dB	Formula: lor-TT lor = -25.7 dBm		
6.4 Adjacent Channel Selectivity	lor = -92.7 dBm / 3.84 MHz DPCH_Ec = -103 dBm / 3.84 MHz loac (modulated) = -52 dBm/3.84 MHz BER limit = 0.001		0 dB	Formula: lor unchanged DPCH_Ec unchanged loac – TT BER limit unchanged loac = -52 dBm/3.84 MHz		
6.5 Blocking Characteristics	See Table 6.5.3 and 6.5.4. in TS34.121 BER limit = 0.001		0 dB	Formula: I _{blocking} (modulated) - TT (dBm/3.84MHz) I _{blocking} (CW) - TT (dBm) BER limit unchanged		
6.6 Spurious Response	Iblocking(CW) –44 Fuw: Spurious response BER limit = 0.001	4 dBm e frequencies	0 dB	Formula: I _{blocking} (CW) - TT (dBm) Fuw unchanged BER limit unchanged I _{blocking} (CW) = -44 dBm		
6.7 Intermodulation Characteristics	louw1 (CW) -46 dBm louw2 (modulated) -46 dBm / 3.84 MHz Fuw1 (offset) 10 MHz Fuw2 (offset) 20 MHz lor = -103.7 dBm/3.84 MHz DPCH_Ec = -114 dBm/3.84 BER limit = 0.001		0 dB	Formula: lor + TT DPCH_Ec + TT louw1 level unchanged louw2 level unchanged BER limit unchanged. lor = -114 dBm		
6.8 Spurious Emissions				Formula: Maximum level + Add zero to all the values of Level in table 6.8.1.	TT of Maximum	
	Frequency Band	Maximum level		Frequency Band	Maximum level	
	9kHz ≤ f < 1GHz	-57dBm /100kHz	0 dB	9kHz ≤ f < 1GHz	-57dBm /100kHz	
	1GHz ≤ f ≤ 12.75GHz	-47dBm /1MHz	0 dB	1GHz ≤ f ≤ 2.2GHz	-47dBm /1MHz	
			0 dB	2.2GHz < f ≤ 4GHz	-47dBm /1MHz	
			0 dB	4GHz < f ≤ 12.75GHz	-47dBm /1MHz	
1920MHz ≤ 1980MHz		-60dBm /3.84MHz	0 dB	$1920MHz \le f \le 1980MHz$	-60dBm /3.84MHz	
	2110MHz ≤ f ≤ 2170MHz	-60dBm /3.84MHz	0 dB	$2110MHz \le f \le 2170MHz$	-60dBm /3.84MHz	

Table F.4.2: Derivation of	Test Requirements	(Receiver tests)

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

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

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

Test	Minimum Requirement in TS 25 101	Test Tolerance	Test Requirement in TS 34.121
	20.101	(TT)	
7.6.1 Demodulation of DPCH in transmit diversity propagation conditions	$\frac{DPCH_E_c}{I_{or}} \text{ -16.8 dB}$	0.1 dB for $\frac{DPCH_E_c}{I}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	$I_{oc} = -60 \text{ dBm}$	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	\hat{I}_{or}/I_{oc} = 9 dB	0.8 dB for \hat{I}_{or}/I_{oc}	I_{oc} unchanged
			\hat{I}_{or}/I_{oc} = 9.8 dB
			$rac{DPCH_E_c}{I_{or}}$ -16.7 dB:
7.6.2 Demodulation of DCH in closed loop Transmit diversity	$\frac{DPCH_E_c}{I_{or}}$ -18 to -18.3 dB	0.1 dB for \underline{DPCH}_E_c	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
mode	<i>I_{oc}</i> = - 60 dBm	I_{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.8 dB for \hat{I}_{or}/I_{oc}	I_{oc} unchanged
			\hat{I}_{or}/I_{oc} = 9.8 dB
			$\frac{DPCH_E_c}{I_{or}}$ -17.9 to -18.2 dB:
7.6.3, Demodulation of DCH in site selection diversity Transmission	$rac{DPCH_E_c}{I_{or}}$ -7.5 to -9.2 dB	0.1 dB for $DPCH_E_c$	Formulas: $\frac{DPCH_E_c}{I_{cr}} = \text{ratio} + \text{TT}$
power control mode	<i>I_{oc}</i> = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = 0$ to -3 dB	0.8 dB for \hat{I}_{or}/I_{oc}	I_{oc} unchanged
			\hat{I}_{or}/I_{oc} = 0.8 to -2.2 dB
			$\frac{DPCH_E_c}{I_{or}}$ -7.4 to -9.1 dB:
7.7.1 Demodulation in inter-cell soft Handover	$\frac{DPCH_E_c}{I_{or}} \text{ -5.5 to -15.2 dB}$	0.1 dB for $DPCH_E_c$	Formulas: $\frac{DPCH_E_c}{I} = \text{ratio} + \text{TT}$
	<i>I_{oc}</i> = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = \text{lor2/loc} = 6 \text{ to 0 dB}$	0.8 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = 6.8 to 0.8 dB
			$\frac{DPCH_E_c}{I_{or}}$ -5.4 to -15.4 dB:
7.7.2 Combining of			To be completed
7.7.2 Combining of			To be completed
TPC commands Test 2		1	

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.8.1 Power control in downlink constant BLER target	$\frac{DPCH_E_c}{I_{or}}$ -9 to -16 dB	0.1 dB for $\underline{DPCH_E_c}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	<i>I_{oc}</i> = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	\hat{I}_{or}/I_{oc} = 9 to -1 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = 9.6 to -0.4 dB
			$\frac{DPCH_E_c}{I_{or}}$ -8.9 to -15.9 dB:
7.8.2, Power control in downlink initial convergence	$\frac{DPCH_E_c}{I_{or}}$ -8.1 to -18.9 dB	0.1 dB for $\underline{DPCH_E_c}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	I_{oc} = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	\hat{I}_{or}/I_{oc} = -1 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = -0.4 dB
			$\frac{DPCH_E_c}{I_{or}}$ -8.0 to -18.8 dB:
7.8.3, Power control in downlink: wind up effects	$\frac{DPCH_E_c}{I_{or}}$ -13.3 dB	0.1 dB for $\underline{DPCH_E_c}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
	<i>I_{oc}</i> = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = 5 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	I_{oc} unchanged
			\hat{I}_{or}/I_{oc} = 5.6 dB
			$\frac{DPCH_E_c}{I_{or}}$ -13.2 dB:
7.9 Downlink compressed mode	$\frac{DPCH_E_c}{I_{or}}$ -15.4 dB	0.1 dB for DPCH_E	Formulas: $\frac{DPCH_E_c}{I} = \text{ratio} + \text{TT}$
	<i>I_{oc}</i> = - 60 dBm	I_{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = 9.6 dB
			$\frac{DPCH_E_c}{I_{or}}$ -15.3 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.10 Blind transport format detection Tests 1, 2, 3	$\frac{DPCH_E_c}{I_{or}} -17.7 \text{ to } -18.4 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$	$\begin{array}{c} 0.1 \text{ dB} \\ \text{for} \\ \underline{DPCH_E_c} \\ I_{or} \end{array}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$
	\hat{I}_{or}/I_{oc} = -1 dB	0.3 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = -0.7 dB
			$\frac{DPCH_E_c}{I_{or}}$ -17.6 to -18.3 dB:
7.10 Blind transport format detection Tests 4, 5, 6	$\frac{DPCH_E_c}{I_{or}}$ -13.0 to -13.8 dB	0.1 dB for \underline{DPCH}_E_c	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
	<i>I_{oc}</i> = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = -3 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = -2.4 dB
			$\frac{DPCH_E_c}{I_{or}}$ -12.9 to -13.7 dB:

Table F.4.4: Derivation of Test Requirements (RRM tests)			
Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2 Idle Mode Tasks			
8.2.2 Cell Re-Selection			
8.2.2.1 Scenario 1: Single carrier case	$\frac{CPICH_{-}E_{c} = -10 \text{ dB}}{I_{or}}$ $\frac{I_{oc} = -70 \text{ dBm}}{I_{or}}$ $\frac{I_{oc} = 7.3 \text{ dB}}{I_{or}}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	$\frac{0.1 \text{ dB for}}{CPICH_E_c}$ I_{or} 0.3 dB for lor/loc	Formulas:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$	$\frac{0.1 \text{ dB for}}{CPICH_E_c}$	$\frac{Formulas:}{CPICH_{-}E_{c}} = ratio + TT$
	<u>I_{oc} = - 70 dBm</u>	0.3 dB for lor/loc	$\frac{I_{or}}{1 \text{ lor/loc} = \text{ratio} + \text{TT}}$
	<u>lor/loc = 10.27 dB</u> <u>Note: Parameters are valid</u>		loc unchanged
	for cell 1 at time 12 and cell 2 at time T1		$\frac{\text{lor/loc} = 10.57 \text{ dB}}{CPICH} = 0.0 \text{ dB}$
			$\frac{I_{or}}{I_{or}}$
8.2.2.2 Scenario 2: Multi carrier case	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$	$\frac{0.1 \text{ dB for}}{CPICH_E_c}$	$\frac{Formulas:}{CPICH} = rotio TT$
	<u>I_{oc} = - 70 dBm</u>	$\frac{I_{or}}{0.3 \text{ dB for lor/loc}}$	$\frac{I_{or}}{I_{or}} = \frac{I_{alo} - TT}{I_{or}}$
	lor/loc = -3.4 dB		loc unchanged
	Note: Parameters are valid for cell 1 at time T1 and cell		loc ratio unchanged
			lor/loc = -3.7 dB
			$\frac{CPICH_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH_{-}E_{c}}{L_{c}} = -10 \text{ dB}$	$\frac{0.1 \text{ dB for}}{CPICH _ E_c}$	Formulas:
	I _{oc} = - 70 dBm	$\frac{I_{or}}{0.3 \text{ dB for lor/loc}}$	$\frac{CPICH_E_c}{I_{or}} = ratio + TT$
	$\frac{1}{1000} = 2.2 \text{ dB}$		$\frac{\text{lor/loc} = \text{ratio} + \text{TT}}{\text{loc} \text{unchanged}}$
	Note: Parameters are valid		loc ratio unchanged
	<u>2 at time T1</u>		lor/loc = 2.5 dB
			$\frac{CPICH_E_c}{I_{or}} -9.9 \text{ dB:}$
8.2.3 UTRAN to GSM	TBD		
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	TBD		
8.2.3.2 Scenario 2: Only UTRA level changed	TBD		
8.2.4 FDD/TDD cell re- selection	TBD		
8.3 UTRAN Connected Mode Mobility	TBD		
8.3.1 FDD/FDD Soft Handover	TBD		
8.3.2 FDD/FDD Hard Handover	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.3 FDD/TDD	TBD		
Handover			
Handover form UTRAN			
FDD to GSM			
8.3.5 Cell Re-selection	TBD		
IN CELL FACH			
8.3.5.1 One frequency	IBD		
neighbour list			
8.3.5.2 Two	TBD		
frequencies present in the neighbour list			
8.3.6 Cell Re-selection	TBD		
in CELL_PCH			
8.3.6.1 One frequency	IBD		
neighbour list			
8.3.6.2 Two	TBD		
frequencies present in			
the neighbour list			
8.3.7 Cell Re-selection	IBD		
8.3.7.1 One frequency	TBD		
present in the			
neighbour list			
8.3.7.2 Two	TBD		
trequencies present in			
8 4 RRC Connection	TBD		
Control			
8.4.1 RRC Re-	TBD		
establishment delay			
8.4.2 Random Access	TBD		
8.5 Timing and	IBD		
Characteristics			
8.5.1 UE Transmit	TBD		
Timing			
8.6 UE Measurements	TBD		
Procedures 8.6.1 EDD intro			
frequency			
measurements			
8.6.1.1 Event triggered	TBD		
reporting in AWGN			
8.6.1.2 Event triggered	TBD		
reporting of multiple			
neighbours in AWGN			
propagation condition			
8.6.1.3 Event triggered	TBD		
detectable neighbours			
in AWGN propagation			
condition			
8.6.1.4 Correct	TBD		
reporting of neighbours			
condition			
8.6.2 FDD inter	TBD		
frequency			
measurements			

Test	Test Parameters in TS 25 133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.6.2.1 Correct		<u></u>	
reporting of neighbours			
in AWGN propagation			
condition			
8 6 2 2 Correct	TBD		
reporting of neighbours			
in Fading propagation			
condition			
8 6 3 TDD	TBD		
measurements	<u></u>		
8 6 3 1Correct	TBD		
reporting of TDD	<u></u>		
neighbours in AWGN			
propagation condition			
8.7 Measurements	TBD		
Performance			
Requirements			
8.7.1 CPICH RSCP	TBD		
8.7.1.1 Intra frequency	TBD		
measurements			
accuracy			
8.7.1.2 Inter frequency	TBD		
measurement accuracy			
8.7.2 CPICH Ec/lo	TBD		
8.7.1.1 Intra frequency	TBD		
measurements			
accuracy			
8.7.1.2 Inter frequency	TBD		
measurement accuracy			
8.7.3 UTRA Carrier	TBD		
<u>RSSI</u>			
8.7.4 SFN-CFN	TBD		
observed time			
<u>difference</u>			
<u>8.7.5 SFN-SFN</u>	TBD		
observed time			
difference			
8.7.6 UE Rx-Tx time	TBD		
difference to GSM cell	עסו		
8.7.8 P-CCPCH RSCP	ТВД		
8.7.6 UE Rx-Tx time difference 8.7.7 Observed time difference to GSM cell 8.7.8 P-CCPCH RSCP	TBD TBD TBD		

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		0 to 500 Hz
5.4.1 Open leap power control in uplink		42.7 dBm to 25 dBm
5.4.2 Inner loop power control in the	±0.1 dB relative over a 1.5 dB range	+25 dBm to
uplink – single step	± 0.15 dB relative over a 3.0 range	–50 dBm
	±0.2 dB relative over a 4.5 dB range	
5.4.2 Inner loop power control in the uplink – seven and ten steps	±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	±0.1 dB uncertainty in DPCCH_Ec/lor ratio	Ratio from –16.6 dB to –28 dB
output power: $\frac{DPCCH_E_c}{I_{or}}$		
5.5.1 Transmit ON/OFF Power: UE	Not critical	-56 dBm (static power)
transmit OFF 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	19 to 25 dBm at 5 MHz offset for results between 40 dB and 50
	10 MHz offset ± 0.8 dB	dB.
		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	±1.0dB	For readings between -10 dB to
domain error		–20 dB.

F.5.2 Receiver measurements

Table F.5.2: Equipment accuracy for receiver measurements

Clause	Equipment accuracy	Test conditions
6.2 Reference sensitivity level	Not critical	
6.3 Maximum input level:	Not critical	
6.4 Adjacent channel selectivity	Not critical	
6.5 Blocking characteristics	Not critical	
6.6 Spurious Response	Not critical	
6.7 Intermod Characteristics	Not critical	
6.8 Spurious emissions	Not critical	

F.5.3 Performance measurements

Table G.3: Equipment accuracy for performance measurements

Clause	Equipment accuracy	Test conditions
7.2 to 7.10	$\frac{DPCH_E_c}{I_{or}} = \pm 0.1 \text{ dB}$	-2.2 to -18.9 dB

													CR-F	orm-v5.1
			С	HAN	GE	REC	UE	ST						
¥	34	<mark>.121</mark>	CR 1	61	9	rev	-	ж	Current	versi	on:	<mark>3.8.</mark>	D. [#]	
For <u>HELP</u> on	using	this for	m, see l	bottom c	of this p	bage or	look	at th	e pop-up	text	over	the X	symbo	ols.
Proposed change	Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network													
Title:	ж <mark>Те</mark>	<mark>st Req</mark>	uiremen	ts for UT	TRAN t	<mark>o GSM</mark>	Cell	Re-	Selection					
Source:	<mark>೫ T1</mark>	RF												
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Summary of chai	nge: ೫	Test	Require	ements a	are incl	uded.								
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Clauses affected	: ¥	8.2.3	3											
Other specs	ж	0	ther core	e specifi	cations	s Э	8							

Other comments: # Isolated Impact Analysis: Does not affect implementation of the UE.

Test specifications

O&M Specifications

How to create CRs using this form:

affected:

3GPP TSG-T1 Meeting #15

Lund, Sweden, 2002-05-24

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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 reques

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 $26 \text{ s} + T_{BCCH}$, where T_{BCCH} is the maximum time allowed to read BCCH data from GSM cell TS 05.08 [20].

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

NOTE:	The cell re-selection d	lelay can b	e expressed as: 4*	T _{measureGSM} +	T _{BCCH} , where:
-------	-------------------------	-------------	--------------------	---------------------------	----------------------------

T _{measureGSM}	See Table 4.1 in TS 25.133 [2] clause 4.2.2.
T _{BCCH}	Maximum time allowed to read BCCH data from GSM cell TS 05.08 [20]. According to [20], the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.

This gives a total of 25.6 s + T_{BCCH} , allow 26 s + T_{BCCH} in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2 and A.4.3.1.

8.2.3.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.3.1.4 Method of test

8.2.3.1.4.1 Initial conditions

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

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

This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected. 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: General test parameters for UTRAN to GSM Cell Re-selection

Pa	arameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cell		Cell2	
Final	Active cell		Cell2	
condition				
DRX cycle	length	S	1.28	
T1		S	[TBD]	
T2		S	[TBD]	

Parameter	Unit	Cell 1 (UTRA)		
		T1	T2	
UTRA RF Channel Number		Channel 1		
CPICH_Ec/lor	dB	-10		
PCCPCH_Ec/lor	dB	-12		
SCH_Ec/lor	dB	-12		
PICH_Ec/lor	dB	-15		
OCNS_Ec/lor	dB	-0.941		
\hat{I}_{or}/I_{oc}	dB	0	-5	
I _{oc}	dBm/3.84 MHz	-70		
CPICH_Ec/lo	dB	-13	-16.2	
CPICH_RSCP	dBm	-80	-85	
Propagation Condition		AWGN		
Cell_selection_and_ reselection_quality_measure		CPICH E _c /I	No	
Qqualmin	dB	-20		
Qrxlevmin	dBm	-115		
UE_TXPWR_MAX_RACH	dBm	21		
Qoffset1 _{s, n}	dB	C1, C2: 0		
Qhyst1	dB	0		
PENALTY_TIME	S	C2: 0		
TEMPORARY_OFFSET1	dB	C2: 0		
Treselection	S	0		
Ssearch _{RAT}	dB	not sent		

Table 8.2.3.1.2: Cell re-selection UTRAN to GSM cell case (cell 1)

Table 8.2.3.1.3: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)		
Farameter	Unit	T1	T2	
Absolute RF Channel Number		ARFCN 1		
RXLEV	dBm	-90	-75	
RXLEV_ACCESS_MIN	dBm	-104		
MS_TXPWR_MAX_CCH	dBm	3	3	

8.2.3.1.4.2 Procedure

- 1) The SS activates cell 1 and 2 with T1 defined parameters in tables 8.2.3.1.4 and 8.2.3.1.5 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) The SS waits for random access requests from the UE on cell 1.
- 4) After T1 s, the parameters are changed as described for T2 in tables 8.2.3.1.4 and 8.2.3.1.5.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 28 s then the number of successful tests is increased by one.
- 6) After T2 s, the parameters are changed as described for T1 in tables 8.2.3.1.4 and 8.2.3.1.5.
- 7) The SS waits for random access requests from the UE on cell 1.
- 8) Repeat step 4) to 7) [TBD] times.

8.2.3.1.5 Test requirements

Parameter	Unit	Cell 1	Cell 1 (UTRA)		
		<u>T1</u>	<u>T2</u>		
UTRA RF Channel Number		Channel	<u>1</u>		
CPICH_Ec/lor	<u>dB</u>	<u>-9.9</u>	<u>-10.1</u>		
PCCPCH_Ec/lor	<u>dB</u>	<u>-12</u>			
<u>SCH_Ec/lor</u>	<u>dB</u>	<u>-12</u>			
PICH_Ec/lor	<u>dB</u>	<u>-15</u>			
OCNS_Ec/lor	<u>dB</u>	<u>-0.953</u>	<u>-0,928</u>		
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>0.3</u>	<u>-5.3</u>		
<u><i>I</i>_{oc} (Note 1)</u>	<u>dBm/3.84</u> <u>MHz</u>	<u>-70</u>			
CPICH_Ec/lo (Note 2)	<u>dB</u>	<u>-12.8</u>	-16.5		
CPICH_RSCP (Note2)	<u>dBm</u>	-79.6	-85.4		
Propagation Condition		AWGN			
Cell_selection_and_		<u>CPICH E</u>	<u>c/N</u> 0		
Qqualmin	dB	-20			
Qrxlevmin	dBm	-115			
UE_TXPWR_MAX_RACH	dBm	21			
<u>Qoffset1_{s, n}</u>	<u>dB</u>	<u>C1, C2: 0</u>	<u>)</u>		
<u>Qhyst1</u>	<u>dB</u>	<u>0</u>			
PENALTY_TIME	<u>s</u>	<u>C2: 0</u>			
TEMPORARY_OFFSET1	<u>dB</u>	<u>C2: 0</u>			
Treselection	<u>S</u>	0			
SsearchRAT	dB	not sent			

Table 8.2.3.1.4: Cell re-selection UTRAN to GSM cell case (cell 1)

Table 8.2.3.1.5: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2	Cell 2 (GSM)		
Farameter	Onit	<u>T1</u>	<u>T2</u>		
Absolute RF Channel Number		ARFCN	<u>1</u>		
RXLEV (Note 1)	<u>dBm</u>	-90	<u>-75</u>		
RXLEV_ACCESS_MIN	<u>dBm</u>	<u>-1(</u>	04		
MS_TXPWR_MAX_CCH	<u>dBm</u>	3	3		

Note 1: For T1 the the ratio $(Ioc/Rxlev)_{test requirement} = (Ioc/Rxlev)_{minimum requirement} + 0.3 dB$

For T2 the the ratio $(Ioc/Rxlev)_{test requirement} = (Ioc/Rxlev)_{minimum requirement} - 0.3 dB$

Note 2: 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 [FFS]%.

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.

3GPP TS aa.bbb vX.Y.Z (YYYY-MM)

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 $4 \text{ s} + T_{BCCH}$, where T_{BCCH} is the maximum time allowed to read BCCH data from GSM cell TS 05.08 [20].

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

NOTE: The cell re-selection delay can be expressed as: $3* T_{measureFDD} + T_{BCCH}$, where:

TmeasureFDDSee Table 4.1 in TS 25.133 [2] clause 4.2.2.TBCCHMaximum time allowed to read BCCH data from GSM cell TS 05.08 [20].According to [20], the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.

This gives a total of 3.84 s + T_{BCCH} , allow 4 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. 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: General test parameters for UTRAN to GSM Cell Re-selection

Pa	arameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cell		Cell2	
Final	Active cell		Cell2	
condition				
DRX cycle	length	S	1.28	
T1		S	45	
T2		s	10	

Parameter	Unit	Cell 1	(UTRA)
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/lor	dB	-10	
PCCPCH_Ec/lor	dB	-12	
SCH_Ec/lor	dB	-12	
PICH_Ec/lor	dB	-15	
OCNS_Ec/lor	dB	-0.941	
\hat{I}_{or}/I_{oc}	dB	20	-9
I _{oc}	dBm/3.84 MHz	-81	
CPICH_Ec/lo	dB	-10.0	-19.5
CPICH_RSCP	dBm	-70	-100
Propagation Condition		AWGN	
Cell_selection_and_ reselection_quality_measure			/N ₀
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
Qoffset1 _{s, n}	dB	C1, C2: 0	
Qhyst1	dB	0	
PENALTY_TIME	S	C2: 0	
TEMPORARY_OFFSET1	dB	C2: 0	
Treselection	S	0	
Ssearch _{RAT}	dB	not sent	

Table 8.2.3.2.2: Cell re-selection UTRAN to GSM cell case (cell 1)

Table 8.2.3.2.3: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2	(GSM)
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-80	-80
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

8.2.3.2.4.2 Procedure

- 1) The SS activates cell 1 and 2 with T1 defined parameters in tables 8.2.3.2.4 and 8.2.3.2.5 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) The SS waits for random access requests from the UE on cell 1.
- 4) After 45 s, the parameters are changed as described for T2 in tables 8.2.3.2.4 and 8.2.3.2.5.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 6 s then the number of successful tests is increased by one.
- 6) After 10 s, the parameters are changed as described for T1 in tables 8.2.3.2.4 and 8.2.3.2.5.
- 7) The SS waits for random access requests from the UE on cell 1.
- 8) Repeat step 4) to 7) [TBD] times.

8.2.3.2.5 Test requirements

Parameter Unit Cell 1 (UTRA) **T1** T2 UTRA RF Channel Number Channel 1 CPICH_Ec/lor dB -9.9 -10.1 PCCPCH_Ec/lor dB -12 SCH_Ec/lor dB -12 PICH_Ec/lor dB <u>-15</u> OCNS_Ec/lor dB -0.953 -0.941 \hat{I}_{or}/I_{oc} dB 20.3 -9.3 dBm/3.84 I oc (Note1) -81 MHz CPICH_Ec/lo (Note2) -9.9 dB -19.9 CPICH_RSCP (Note2) -100.4 dBm -70.6 **Propagation Condition** AWGN Cell_selection_and CPICH Ec/No reselection_quality_measure dB -20 Qqualmin -115 Qrxlevmin dBm UE_TXPWR_MAX_RACH dBm 21 C1, C2: 0 Qoffset1_{s, n} dB Qhyst1 dB 0 PENALTY_TIME C2: 0 <u>s</u> TEMPORARY OFFSET1 dB C2: 0 Treselection <u>s</u> 0 Ssearch_{RAT} dB not sent

Table 8.2.3.2.4: Cell re-selection UTRAN to GSM cell case (cell 1)

Table 8.2.3.2.5: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	<u>Unit</u>	Cell 2	2 (GSM)
		<u>T1</u>	<u>T2</u>
Absolute RF Channel			1
<u>Number</u>		ARECN	<u>1</u>
RXLEV (Note1)	<u>dBm</u>	<u>-80</u>	<u>-80</u>
RXLEV_ACCESS_MIN	<u>dBm</u>	<u>-104</u>	
MS_TXPWR_MAX_CCH	<u>dBm</u>	<u>33</u>	
ratio (Ioa/Dylay) = (Ioo/Dylay)		0 2 dD

Note 1: For T1 the the ratio $(Ioc/Rxlev)_{test requirement} = (Ioc/Rxlev)_{minimum requirement} + 0.3 dB$

For T2 the the ratio $(Ioc/Rxlev)_{test requirement} = (Ioc/Rxlev)_{minimum requirement} - 0.3 dB$

Note 2: 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 [FFS]%.

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.

T1-020245

3GPP	TSG-T1 N	leeting #1	5
Lund,	Sweden,	2002-05-2	24

CHANGE REQUEST					
¥	34.121 CR 162 # rev - # Current version: 3.8.0. #				
For <u>HELP</u> on u	ising this form, see bottom of this page or look at the pop-up text over the $#$ symbols.				
Proposed change	affects: # (U)SIM ME/UE X Radio Access Network Core Network				
Title: #	Derivation of Test Requirements for UTRAN to GSM cell resellection in idle mode (Annex F.4)				
Source: ೫	T1RF				
Work item code: %	Date: # 2002-05-22				
Category: # F Release: # R99 Use one of the following categories: Use one of the following releases: F (correction) 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can be found in 3GPP TR 21.900. REL-5 (Release 5)					
Reason for change: # Derivation of Test Requirements are missing.					
Summary of change: # Derivation of Test Requirements are included.					
Consequences if not approved: * Test could fail "good UEs" because Test Requirements differ from the Minimum Requirements					
Clauses affected:	# Annex F.4				
Other specs affected:	# Other core specifications # Test specifications 0&M Specifications				
Other comments:	% Isolated Impact Analysis: Does not affect implementation of the UE.				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.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.

Test	Minimum Requirement in TS	Test	Test Requirement in TS 34.121
	25.101	Tolerance	
		(TT)	
5.2 Maximum Output	Power class 1 (33 dBm)	0.7 dB	Formula: Upper Tolerance limit + TT
Power	Tolerance = $+1/-3$ dB		Lower Tolerance limit – TT
	Power class 2 (27 dBm)		For power classes 1-3:
	Tolerance = $+1/-3$ dB		Upper Tolerance limit = +1.7 dB
	Power class 3 (24 dBm)		Lower Tolerance limit = -3.7 dB
	I olerance = $+1/-3$ dB		For power class 4:
	Power class 4 (21 dBm)		Upper Tolerance limit = +2.7 dB
	$1 \text{ olerance} = \pm 2 \text{ dB}$	40.11	Lower Tolerance limit = -2.7 dB
5.3 Frequency Error	The UE modulated carrier	10 Hz	Formula: modulated carrier frequency
	frequency shall be accurate to		error + 11
	within ± 0.1 ppm compared to the		
	carrier frequency received from		modulated carrier frequency error = $\pm (0.1)$
	the Node B.		ppm + 10 Hz).
5 4 1 Open loop newer	Open leep power control	1 0 dP	Formulas Unner Talerenes limit - TT
control in the unlink	tolerance +9 dB (Normal)	1.0 UD	Formula. Upper Tolerance limit + 11
			Lower Tolerance limit – TT
	Open loop power control		For Normal conditions:
	tolerance +12 dB (Normal)		Lipper Tolerance limit $= \pm 10 \text{ dB}$
			Lower Tolerance limit – -10 dB
			For Extreme conditions:
			Upper Tolerance limit = +13 dB
			Lower Tolerance limit = -13 dB
5.4.2 Inner loop power	See table 5.4.2.1 and 5,4,2,2	0.25dB	Formula: Upper Tolerance limit + TT
control in uplink		0.15 dB	Lower Tolerance limit – TT
		0.2 dB	
		[0.3 dB]	
5.4.3 Minimum Output	UE minimum transmit power	1.0 dB	Formula:
Power	shall be less than –50 dBm		UE minimum transmit power + TT
			UE minimum transmit power = -49 dBm

Table F.4.1: Derivation of Test Requirements (Transmitter tests)

25.4 Out-of- synchronisation handling of output power: $DPCCH_{-E_c}$ levels L_c AB: 22 dB DE: 24 dB $DE: 24$ dB $I_{\infty} = -60$ dBm $I_{\infty} = -24$ dB $DE: -2$	Test	Minimum Requirement in TS	Test	Test Requirement in TS 34.121	
5.4.4 Out-of- synchronisation handling of output power:DPCCH $-E_c$ levels I_c bD - 28 dB DD - 28 dB DE - 24 dB EF: -18 dB d transmit ON/OFF time 200msFormulas: Ratio between A and B + TT Ratio between D and E - TT Ratio B - TT Rati		25.101	Tolerance		
5.4.4 Out-of- synchronisation handling of output power: $DPCCH = F_c$ levels L_c 0.4 dB for $DE: -22$ dB $DE: -22$ dB $DE: -24$ dB $EF: 18 dBtransmit ON/OFF time200ms0.4 dBforDE: -24 dBEF: 18 dBtransmit ON/OFF time1_wDPCCH = F_cI_w1000000000000000000000000000000000000$			(TT)		
Synchronisation power: L_{μ} manding of output power: L_{μ} DE: 22 dB BD: 28 dB D: 28 dB D: 28 dB EF: 14 dB transmit ON/OFF time 200msDifference DE: 24 dB transmit ON/OFF time 200msDifference DE: 24 dB transmit ON/OFF time 200msDifference DE: 24 dB transmit ON/OFF time transmit ON/OFF time transmit ON/OFF time 200msDifference DE: 26 dB transmit ON/OFF time transmit ON/OFF time 200msDifference transmit ON/OFF time transmit ON/OFF time 200msDifference transmit ON/OFF time transmit ON/OFF time 200msDifference transmit ON/OFF time transmit ON/OFF time 200msDifference transmit ON/OFF time transmit ON/OFF power transmit ON/OFF time mask (dynamic <td>5.4.4 Out-of-</td> <td>$\underline{DPCCH}_{-}E_{c}$ levels</td> <td>0.4 dB</td> <td>Formulas:</td>	5.4.4 Out-of-	$\underline{DPCCH}_{-}E_{c}$ levels	0.4 dB	Formulas:	
naming of output power:AB: -22 dB Tansmit ONOFF time 200ms $\frac{DPCH - E_c}{24 dB}$ 	synchronisation	I _{or}	tor	Ratio between A and B + 11	
power:DD: -28 dB DE: -24 dB EF: -16 dB transmit ONOFF time 200ms I_w 0 ms for measurem entRatio between E and F + TT transmit ONOFF time + TT timing measurem ent $DPDCH_{-E_v} = -16.6 dB$ I_w $DPDCH_{-E_v} = -16.6 dB$ I_w $DPDCH_{-E_v} = -16.6 dB$ I_w $DPDCH_{-E_v} = -16.6 dB$ I_w $DPDCH_{-E_v} = -1 dB$ $I_{oc} - 60 dBm$ $I_w / I_w = -1 dB$ $DPCCH_{-E_v} = -16.6 dB$ $I_w - 60 dBmI_{oc} - 60 dBmI_w / I_w = -1 dBI_{oc} - 60 dBmI_w / I_w = -1 dBI_{oc} - 1 dBDPCCH_{-E_v} = -16.6 dBI_w / I_w = -1 dBDPCCH_{-E_v} = -16.6 dBI_w / I_w = -1 dBDPCCH_{-E_v} = -16.6 dBI_w / I_w = -1 dBI_{oc} - 60 dBmI_{oc} / I_w = -1 dBI_{oc} - 60 dBmI_w / I_w = -1 dBI_{oc} - 1 dBDPCCH_{-E_v} = -16.6 dBI_w / I_w = -16.6 dBI_{oc} - 1 dBDPCCH_{-E_v} = -16.6 dBI_w / I_w = -16.6 dBI_{oc} - 1 dBDPCCH_{-E_v} = -16.6 dBI_w / I_w = -16.6 dBI_{oc} - 1 dBI_{oc} - 10 dBI_{oc} - 1 dBI_{oc} - 10 dBI_{oc} - 1 dBI_{oc} - 10 dBI_{oc} - 1 dBI_{oc}$	nandling of output	AB: -22 dB	$\underline{DPCCH}_{\underline{H}}$	Ratio between B and D – 11	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	power:	BD: -28 dB	I _{or}	Ratio between D and E – 11	
EF: -18 dB transmit ONOFF time 200ms0 ms for timing measurem ent0 ms for timing measurem timing timing timing timing timing timing0 ms for timing timing timing timing timing timing timing timing timing timing timing0 ms for timing ti		DE: -24 dB		Ratio between E and F + 11	
transmit OPF DOP L_x = -1 dBtransmit OFF L_x = -1 dB $DPCH_{-E_x} = -16.6 dB$ L_x = -1 dB $DPCH_{-E_x} = -16.6 dB$ L_x = -1 dB $I_{ac} - 60 dBm$ $I_{ac} / L_x = -1 dB$ $I_{ac} - 60 dBm$ $I_{ac} / L_x = -1 dBDPCH_{-E_x} = -1 dBDPCH_{-E_x} = -1 dBI_{ac} / L_x = -1 dBI_{ac} / L_x = -1 dBDPCH_{-E_x} = -1 dBDPCH_{-E_x} = -16.6 dBL_x = -1 dBI_{ac} / L_x = -1 dBI_{ac} - 60 dBmL_x = -1 dBDPCH_{-E_x} = -16.6 dBL_x = -1 dBI_{ac} / L_x = -1 dBDPCH_{-E_x} = -16.6 dBDCH_{-E_x} = -16.6 dBI_{ac} / L_x = -1 dBI_{ac} / L_x = -1 dBI_{ac} / L_x = -1 dBDPCH_{-E_x} = -16.6 dBDCH_{-E_x} = -16.6 dBI_{ac} / L_x = -1 dBI_{ac} / L_x = -1 dBI_{ac} / L_x = -1 dBDPCH_{-E_x} = -16.6 dBDCH_{-E_x} = -16.6 dBI_{ac} / L_x = -1 dBI_{ac} / L_x = -1 dBI_{ac} / L_x = -1 dBDPCH_{-E_x} = -16.6 dBDPCH_{-E_x} dBDPCH_{-E_x$		EF: -18 dB	0 ms for	transmit ON/OFF time + 11 timing	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		transmit ON/OFF time	timing		
ent $\frac{DPDCH_{-E_{c}}}{I_{w}} = -16.6 \text{ dB}$ $I_{oc} - 60 \text{ dBm}$ $I_{oc} - 1 \text{ dB}$ $\frac{DPCCH_{-E_{c}}}{I_{w}} = -1 \text{ dB}$ $DPCCH$		200ms	measurem	DPDCH E (A A ID	
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$I_{oc} - 60 \text{ dBm}$ $I_{oc} - 60 \text{ dBm}$ $I_{oc} - 60 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} - 80 \text{ dBm}$ $\hat{I}_{oc} / I_{oc} - 80 \text{ dBm}$ <td></td> <td></td> <td></td> <td></td>					
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$i_{or}/t_{oc} = -1 dB$ $\frac{DPCCH = E_c}{t_o}$ levels: t_o $AB: -21.6 dB$ BD: -28.4 dB DE: -24.4 dB EF: -17.6 dB $AB: -21.6 dB$ BD: -28.4 dB DE: -24.4 dB EF: -17.6 dB $5.5.1 Transmit OFF$ power (static case)Transmit OFF power shall be less than -56 dBm $1.0 dB$ $5.5.2 Transmit ON/OFF$ time mask (dynamic case)Transmit OFF power shall be the s.5.2 Transmit ON power shall be the less than -56 dBm $1.0 dB$ $5.5.2 Transmit ON/OFFtime mask (dynamiccase)Transmit OFF power shall be theless than -56 dBm0 n powerto power toto nowerthe state the nominal TX powerrange from Table 5.5.2 then apply table 5.7.1(only if there has been a transmist) ON power targetvalue range take the nominal TX powerrange from Table 5.5.2 then apply table 5.7.1(only if there has been a transmist) ON power targetvalue range take the nominal TX powerrange from Table 5.5.2 then apply table 5.7.1(only if there has been a transmist) of Power TTTransmit OFF power + Off power TTTo calculate Transmit OFF power TTo calculate Transmit OFF power TTo calculate Transmit OFF power TTo calculate Transmit OFF power TTTo calculate Transmit OFF power TTTo calculate Transmit OFF power TTTo calculate Transmit OFF power TTTransmit OFF power + Off power TTTrans$				$I_{or}/I_{oc} = -1$ db	
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5.6 Change of TFC: TFC step size = +5 to +9 dB 0.3 dB Formula: Upper Tolerance limit + TT 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 Upper limit = -9.3 dB 5.7 Power setting in Various TBD TBD uplink compressed 5.4 20 Formula: Upper limit = -9.3 dB				Transmit OFF power + Off power TT	
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power control step size Lower Tolerance limit – TT Upper limit = -4.7 dB Upper limit = -4.7 dB Lower limit = -9.3 dB TBD 5.7 Power setting in uplink compressed Various 5.4 2) 5.4 2)	5.6 Change of IFC:	$I \vdash C$ step size = +5 to +9 dB	0.3 dB	Formula: Upper Tolerance limit + TT	
5.7 Power setting in uplink compressed Various TBD (Subset of 5.4.2) TBD	power control step size			Lower Tolerance limit – TT	
5.7 Power setting in uplink compressed Various TBD (Subset of 5.4.2) TBD					
5.7 Power setting in uplink compressed Various TBD TBD 5.7 Power setting in uplink compressed (Subset of 5.4.2)				Upper IImit = -4.7 dB	
uplink compressed (Subset of 5.4.2)	5 7 Dower cotting in	Various			
	Unlink compressed	valious			
	mode		(Subset 0) 5 4 2)		
Test	Minimum Require	ement in TS	Test	Test Requirement in	TS 34.121
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	25.101				
5.8 Occupied Bandwidth	The occupied chanr bandwidth shall be I MHz based on a chi	nel ess than 5 ip rate of	0 kHz	Formula: occupied channe TT	l bandwidth: +
5.9 Spectrum emission mask	Minimum requireme TS25.101 Table 6.1 The lower limit shall / 3.84 MHz or which higher.	nt defined in 0. be –50 dBm ever is	1.5 dB	Formula: Minimum required Lower limit + TT Add 1.5 to Minimum required in TS25.101 Table 6.10. Zero test tolerance is appli Additional requirements for to FCC regulatory required The lower limit shall be -48	ment + TT ement entries ed for Band II due hents. 3.5 dBm / 3.84
5.10 Adjacent Channel Leakage Power Ratio (ACLR)	Power Classes 3 an UE channel +5 MHz ACLR limit: 33 dB UE channel +10 MH MHz, ACLR limit: 43	id 4: : or -5 MHz, iz or -10 3 dB	0.8 dB	Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 N limit: 32.2 dB UE channel +10 MHz or -1 limit: 42.2 dB	MHz, ACLR 0 MHz, ACLR
5.11 Spurious Emissions				Formula: Minimum Requ Add zero to all the values Requirements in table 5 5.11.1b.	irement+ TT s of Minimum 5.11.1a and
	Frequency Band	Minimum Requireme nt		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	$\begin{array}{c} 1805 \text{ MHz} \leq \text{f} \leq 1880 \\ \text{MHz} \end{array}$	–71dBm /100kHz
5.12 Transmit Intermodulation	Intermodulation Pro 5MHz -31 dBc 10MHz -41 dBc CW Interferer level	duct = -40 dBc	0 dB	Formula: CW interferer level Intermod Products limits re unchanged. CW interferer level = -40 d	el – TT/2 main Bc
5.13.1 Transmit modulation: EVM	The measured EVM exceed 17.5%.	l shall not	0%	Formula: EVM limit + TT EVM limit = 17.5 %	

Test	Minimum Requirement in TS	Test	Test Requirement in TS 34.121
	25.101	Tolerance	
		(TT)	
5.13.2 Transmit	The measured Peak code	1.0 dB	Formula: Peak code domain error + TT
modulation: peak code	domain error shall not exceed		Peak code domain error = -14 dB
domain error	-15 dB.		

Test	Minimum Requi 25.10	rement in TS 01	Test Tolerance (TT)	Test Requirement in	TS 34.121
6.2 Reference sensitivity level	for = -106.7 dBm / DPCH_Ec = -117 MHz BER limit = 0.001	/ 3.84 MHz dBm / 3.84	0.7 dB	Formula: Îor+ TT DPCH_Ec + TT BER limit unchanged Îor = -106 dBm / 3 DPCH_Ec = -116.3 dBm /	3.84 MHz / 3.84 MHz
6.3 Maximum input level	-25 dBm lor -19 dBc DPCH_E	c/lor	0.7 dB	Formula: lor-TT lor = -25.7 dBm	
6.4 Adjacent Channel Selectivity	for = -92.7 dBm / : DPCH_Ec = -103 MHz Ioac (modulated) : dBm/3.84 MHz BER limit = 0.001	3.84 MHz dBm / 3.84 = -52	0 dB	Formula: Îor unchanged DPCH_Ec unchanged Ioac – TT BER limit unchanged Ioac = -52 dBm/3.84 MHz	
6.5 Blocking Characteristics	See Table 6.5.3 a TS34.121 BER limit = 0.001	nd 6.5.4. in	0 dB	Formula: I blocking (modulated) - TT (d I blocking (CW) - TT (dBm) BER limit unchanged	Bm/3.84MHz)
6.6 Spurious Response	Iblocking(CW) –44 Fuw: Spurious response BER limit = 0.001	4 dBm e frequencies	0 dB	Formula: I _{blocking} (CW) - TT Fuw unchanged BER limit unchanged I _{blocking} (CW) = -44 dBm	(dBm)
6.7 Intermodulation Characteristics	louw1 (CW) louw2 (modulated 3.84 MHz Fuw1 (offset) 10 Fuw2 (offset) 20 lor = -103.7 dBm/3 DPCH_Ec = -114 BER limit = 0.001	-46 dBm) –46 dBm / MHz MHz 3.84 MHz dBm/3.84	0 dB	Formula: lor + TT DPCH_Ec + TT louw1 level unchanged louw2 level unchanged BER limit unchanged. lor = -114 dBm BER limit. = 0.001	
6.8 Spurious Emissions				Formula: Maximum level + Add zero to all the values o	TT of Maximum
	Frequency Band	Maximum level		Frequency Band	Maximum level
	9kHz ≤ f < 1GHz	-57dBm /100kHz	0 dB	9kHz ≤ f < 1GHz	-57dBm /100kHz
	1GHz ≤ f ≤ 12.75GHz	-47dBm /1MHz	0 dB	1GHz ≤ f ≤ 2.2GHz	-47dBm /1MHz
			0 dB	$2.2GHz < f \le 4GHz$	-47dBm /1MHz
			0 dB	$4GHz < f \le 12.75GHz$	-47dBm /1MHz
	1920MHz ≤ f ≤ 1980MHz	-60dBm /3.84MHz	0 dB	$1920MHz \le f \le 1980MHz$	-60dBm /3.84MHz
	2110MHz ≤ f ≤ 2170MHz	-60dBm /3.84MHz	0 dB	$2110MHz \le f \le 2170MHz$	-60dBm /3.84MHz

Table F.4.2: Derivation of T	est Requirements	(Receiver tests)

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

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

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

3GPP TS aa.bbb vX.Y.Z (YYYY-MM)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.6.1 Demodulation of DPCH in transmit diversity propagation conditions	$\frac{DPCH_E_c}{I_{or}} - 16.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.8 \text{ dB}$
			$\frac{DPCH_E_c}{I_{or}} \text{ -16.7 dB:}$
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\frac{DPCH_E_c}{I_{or}} -18 \text{ to } -18.3 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$
			$\hat{I}_{or}/I_{oc} = 9.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}}$ -17.9 to -18.2 dB:
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\frac{DPCH_E_c}{I_{or}} -7.5 \text{ to } -9.2 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 0 \text{ to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$
			$\hat{I}_{or}/I_{oc} = 0.8 \text{ to } -2.2 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -7.4 \text{ to } -9.1 \text{ dB}:$
7.7.1 Demodulation in inter-cell soft Handover	$\frac{DPCH_E_c}{I_{or}} -5.5 \text{ to } -15.2 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = \log/\log = 6 \text{ to } 0 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.8 \text{ to } 0.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -5.4 \text{ to } -15.4 \text{ dB}:$
7.7.2 Combining of TPC commands Test 1 7.7.2 Combining of			To be completed To be completed
TPC commands Test 2			

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.8.1 Power control in downlink constant BLER target	$\frac{DPCH_E_c}{I_{or}}$ -9 to -16 dB	0.1 dB for \underline{DPCH}_E_c	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
	<i>I_{oc}</i> = - 60 dBm	I_{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	\hat{I}_{or}/I_{oc} = 9 to -1 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = 9.6 to -0.4 dB
			$\frac{DPCH_E_c}{I_{or}}$ -8.9 to -15.9 dB:
7.8.2, Power control in downlink initial convergence	$\frac{DPCH_E_c}{I_{or}}$ -8.1 to –18.9 dB	0.1 dB for \underline{DPCH}_E_c	Formulas: $\frac{DPCH_{-}E_{c}}{I_{cr}} = \text{ratio} + \text{TT}$
	I_{oc} = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	\hat{I}_{or}/I_{oc} = -1 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = -0.4 dB
			$\frac{DPCH_{-}E_{c}}{I_{or}}$ -8.0 to -18.8 dB:
7.8.3, Power control in downlink: wind up effects	$\frac{DPCH_E_c}{I_{or}}$ -13.3 dB	0.1 dB for \underline{DPCH}_E_c	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
	<i>I_{oc}</i> = - 60 dBm	I_{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = 5 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = 5.6 dB
			$\frac{DPCH_E_c}{I_{or}} \text{ -13.2 dB:}$
7.9 Downlink compressed mode	$rac{DPCH_E_c}{I_{or}}$ -15.4 dB	0.1 dB for DPCH_E _c	Formulas: $\frac{DPCH_{-}E_{c}}{I} = \text{ratio} + \text{TT}$
	<i>I_{oc}</i> = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = 9.6 dB
			$\frac{DPCH_{-}E_{c}}{I_{or}}$ -15.3 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance	Test Requirement in TS 34.121
7.10 Blind transport format detection Tests 1, 2, 3	$\frac{DPCH_E_c}{I_{or}} - 17.7 \text{ to } -18.4 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.3 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$
			$\hat{I}_{or}/I_{oc} = -0.7 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}}$ -17.6 to -18.3 dB:
7.10 Blind transport format detection Tests 4, 5, 6	$\frac{DPCH_E_c}{I_{or}} -13.0 \text{ to } -13.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$
	$\hat{I}_{or}/I_{oc} = -3 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	I_{oc} unchanged \hat{I}_{or}/I_{oc} = -2.4 dB
			$\frac{DPCH_{-}E_{c}}{I_{or}}$ -12.9 to -13.7 dB:

	Table F.4.4: Derivation of Test Requirements (RRM tests)				
Ì	Test	<u>Test Parameters in</u> TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121	
	8.2 Idle Mode Tasks				
	8.2.2 Cell Re-Selection				
	8.2.2.1 Scenario 1: Single carrier case				
I					
1					

Test	Test Parameters in	Test Tolerance	Test Requirement in TS 34.121
9.0.0.0 Secondria Di	<u>TS 25.133</u>	<u>(TT)</u>	
8.2.2.2 Scenario 2: Multi carrier case			
Mail carrier case			
823 UTRAN to GSM			
Cell Re-Selection			
8.2.3.1 Scenario 1:	$CPICH_E_c = -10 \text{ dB}$	0.1 dB for	Formulas:
Both UTRA and GSM		$CPICH _E_c$	
level changed		I_or	$\underline{CPICH_E_c}$ = ratio + TT
	lor/loc = 0 dB	0.3 dB for lor/loc	I _{or}
			lor/loc = ratio + TT
		0.3 dB for	
		loc/RXLEV	(loc/Rxlev) _{test requirement} =
			(IOC/RXIEV) _{minimum requirement} + 11
			lor/loc = 0.3 dB
			$CPICH_E_c = -9.9 \text{ dB}^{\circ}$
			0r
	CPICH E 40 dD	0.1 dB for	Formulas:
	$\frac{CHCH_{L}}{L} = -10 \text{ dB}$	CPICH E	<u>remade.</u>
		$\frac{c}{I}$	$CPICH_{-}E_{c} = ratio - TT$
	lor/loo – EdP	$\frac{1}{0}$	
	101/100 = -300	0.3 00 101 101/100	$\frac{1}{10000000000000000000000000000000000$
		0.3 dB for	
		loc/RXLEV	(loc/Rxlev) _{test requirement} =
			(loc/Rxlev) _{minimum requirement} - TT
			lor/loo = 5.2 dP
			101/10C = -5.5 dB
			$CPICH_E_{-10,1,dB}$
			$\frac{1}{I}$
			or
8 2 3 2 Scenario 2	CPICH E to ID	0.1 dB for	Formulas:
Only UTRA level	$\frac{CHCH_{L_c}}{L} = -10 \text{ dB}$	CPICH E	
changed		$\frac{U_c}{I}$	$CPICH_{-}E_{c} = ratio + TT$
	lor/loo 20 dB	$\frac{1}{0}$	
	$\frac{101/10C = 20 \text{ dB}}{101/10C = 20 \text{ dB}}$	0.3 dB for 10f/10C	$\frac{\partial r}{\partial r}$
		0.3 dB for	
		loc/RXLEV	(loc/Rxlev) _{test requirement} =
			(loc/Rxlev) _{minimum requirement} + TT
			$\frac{101/100 = 20.3 \text{ GB}}{101/100 = 20.3 \text{ GB}}$
			CPICH E = 0.0 dB
			$\frac{1}{I}$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $1000000000000000000000000000000000000$	$ \begin{array}{r} 0.1 \text{ dB for} \\ \underline{CPICH_E_c} \\ \overline{I_{or}} \\ \underline{0.3 \text{ dB for lor/loc}} \\ 0.3 \text{ dB for} \\ \end{array} $	Formulas: $CPICH _ E_c$ = ratio - TT I_{or} I_{or} Ior/loc = ratio - TT
		loc/RXLEV	(loc/Rxlev) _{test requirement} = (loc/Rxlev) _{minimum requirement} - TT
			$\frac{CPICH - E_c}{I_{or}} - 10.1 \text{ dB:}$
8.2.4 FDD/TDD cell re-	TBD		
8.3 UTRAN Connected	TBD		
8.3.1 FDD/FDD Soft Handover	TBD		
8.3.2 FDD/FDD Hard Handover	TBD		
8.3.3 FDD/TDD Handover	TBD		
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD		
8.3.5 Cell Re-selection in CELL_FACH	TBD		
8.3.5.1 One frequency present in the neighbour list	TBD		
8.3.5.2 Two frequencies present in the neighbour list	TBD		
8.3.6 Cell Re-selection in CELL PCH	TBD		
8.3.6.1 One frequency present in the neighbour list	TBD		
8.3.6.2 Two frequencies present in the neighbour list	TBD		
8.3.7 Cell Re-selection in URA_PCH	TBD		
8.3.7.1 One frequency present in the neighbour list	TBD		
8.3.7.2 Two frequencies present in the neighbour list	TBD		
8.4 RRC Connection Control	TBD		
8.4.1 RRC Re- establishment delay	TBD		
8.4.2 Random Access	TBD		
8.5 Timing and Signalling Characteristics	TBD		
8.5.1 UE Transmit Timing	TBD		
8.6 UE Measurements Procedures	TBD		

Test	Test Parameters in TS 25 133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.6.1 EDD intra	TBD	<u>111</u>	
frequency			
measurements			
8.6.1.1 Event triggered	TBD		
reporting in AWGN			
propagation conditions			
8.6.1.2 Event triggered	TBD		
reporting of multiple			
neighbours in AWGN			
propagation condition	TRR		
8.6.1.3 Event triggered	TRD		
detectable neighbours			
in AWGN propagation			
condition			
8.6.1.4 Correct	TBD		
reporting of neighbours			
in fading propagation			
<u>condition</u>			
8.6.2 FDD inter	TBD		
trequency			
measurements	TRD		
eporting of peighbours			
in AWGN propagation			
condition			
8.6.2.2 Correct	TBD		
reporting of neighbours			
in Fading propagation			
<u>condition</u>			
<u>8.6.3 TDD</u>	TBD		
measurements	TDD		
8.6.3. ICOILECI	160		
neighbours in AWGN			
propagation condition			
8.7 Measurements	TBD		
Performance			
Requirements			
8.7.1 CPICH RSCP	TBD		
8.7.1.1 Intra frequency	TBD		
measurements			
accuracy			
8.7.1.2 Inter frequency	TRD		
8.7.2 CPICH Ec/lo	TBD		
8.7.1.1 Intra frequency	TBD		
measurements			
accuracy			
8.7.1.2 Inter frequency	TBD		
measurement accuracy			
8.7.3 UTRA Carrier	TBD		
RSSI			
8.7.4 SFN-CFN	<u>IBD</u>		
difference			
observed time			
difference			
8.7.6 UE Rx-Tx time	TBD		
difference			
8.7.7 Observed time	TBD		
difference to GSM cell			
8.7.8 P-CCPCH RSCP	TBD		

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

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 – single step 5.4.2 Inner loop power control in the	± 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 +25 dBm to -50 dBm
uplink - seven and ten steps		
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/lor 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 \pm 0.8 dB 10 MHz offset \pm 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.

Table F.5.1:	Equipment	accuracy f	or transmitter	measurements
	Equipmont	abbanaby		mououromonito

F.5.2 Receiver measurements

Table F.5.2: Equipment accuracy for receiver measurements

Clause	Equipment accuracy	Test conditions
6.2 Reference sensitivity level	Not critical	
6.3 Maximum input level:	Not critical	
6.4 Adjacent channel selectivity	Not critical	
6.5 Blocking characteristics	Not critical	
6.6 Spurious Response	Not critical	
6.7 Intermod Characteristics	Not critical	
6.8 Spurious emissions	Not critical	

F.5.3 Performance measurements

Table G.3: Equipment accuracy for performance measurements

Clause	Equipment accuracy	Test conditions
7.2 to 7.10	$\frac{DPCH_E_c}{I_{or}} = \pm 0.1 \text{ dB}$	-2.2 to –18.9 dB

CHANGE REQUEST									
ж	<mark>34.12</mark> ′	CR 163	ж re	v -	ж	Current versi	^{on:} 3.	8.0	ж
For <u>HELP</u> on usi	ing this fo	orm, see bottor	n of this page	or look a	at the	e pop-up text	over the	ж syn	nbols.
Proposed change at	ffects: a	t (U)SIM	ME/UE	Radi	io Ace	cess Network	Co	ore Ne	twork
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Clauses affected:	ж <mark>8.3</mark>	2							
Other specs affected:	¥	Other core spec Fest specification D&M Specification	cifications ons ions	ж					
Other comments:	ж								

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.2 FDD/FDD Hard Handover

8.3.2.1 FDD/FDD Hard Handover to intra-frequency cell

8.3.2.1.1 Definition and applicability

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

The requirements and this test apply to the FDD UE.

8.3.2.1.2 Minimum requirement

The hard handover delay shall be less than 70 ms in CELL_DCH state in the single carrier case. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

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

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

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

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

where

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

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

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

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

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

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

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

8.3.2.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.2.1.4 Method of test

8.3.2.1.4.1 Initial conditions

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

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

The test parameters are given in Table 8.3.2.1.1 and 8.3.2.1.2 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used, and that CPICH Ec/Io and SFN-CFN observed timed difference shall be reported together with Event 1A. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a PHYSICAL CHANNEL RECONFIGURATION with activation time at beginning of T3 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined in TS 25.13325.331 [28].

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

Para	meter	Unit	Value	Comment
DCH parameters			DL Reference Measurement	As specified in TS 25.10134.121 section
			Channel 12.2 kbps	A <u>C</u> .3.1
Power Contro			On	
Target quality DTCH	value on	BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbourin		Cell 2	
	g cell			
Final	Active cell		Cell 2	
condition				
Reporting rang	ge	dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting dea	ctivation		0	Applicable for event 1A
threshold				
Time to Trigge	er	ms	0	
Filter coefficie	nt		0	
T1		S	5	
T2		S	5	
T3		S	5	

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

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
CPICH_Ec/lor	DB		-10			-10	•
PCCPCH_Ec/lor	DB		-12			-12	
SCH_Ec/lor	DB		-12			-12	
PICH_Ec/lor	DB		-15			-15	
DPCH_Ec/lor	DB	Note1	Note1	Note1Note3	N/A	N/A	Note1
OCNS		Note2	Note2	Note2	-0.941	-0.941	Note2
\hat{I}_{or}/I_{oc}	DB	0 6.97			-Infinity 5.97		
Lag	dBm/	-70					
00	3.84						
	MHz						
CPICH_Ec/lo	DB		-13		-Infinity	-	14
Propagation		AWGN					
Condition							
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							
Note 3: The DPCH may not be power controlled by the power control loop.							

8.3.2.1.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.

- [Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds, the SS shall switch the power settings from T1 to T2
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1A
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3
- 8) After 5 seconds, the SS shall switch the power settings from T2 to T3
- 9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCCH to cell 2 less than 70 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11)Repeat step 1-10 [TBD] times

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	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	
-Measurement quantity	CPICH_EC/NU
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.5.7.5)	No report
-Cell synchronisation information reporting indicator	TPLIE (Note 1)
-Cell Identity reporting indicator	
	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-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	TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Demant all active act calls a calls within
-CHOICE reported cell	Report all active set cells + cells within
Maximum number of reported calls	nonitored set on used frequency
-Maximum number of reported cens	Z Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	onona
-Parameters required for each event	2
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
-W	1.0
-Hysteresis	U dB
- Inresnoid used frequency	Not Present
-Reporting deactivation threshold	U Not Brocont
Time to triager	not Fresent
- Amount of reporting	Infinity
-Amount of reporting -Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triagering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE mode	FDD

Information Element/Group name	Value/Remark			
-Primary CPICH info (10.3.6.60)				
-W	1.0			
-Hysteresis	0 dB			
-Threshold used frequency	Not Present			
-Reporting deactivation threshold	Not Present			
-Replacement activation threshold	Not Present			
-Time to trigger	0 ms			
-Amount of reporting	Not Present			
-Reporting interval	Not Present			
-Reporting cell status	Not Present			
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	ng			

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RN11	Not Present
	Not Present
-RRC State Indicator	CELL_DCH
-UIRAN DRX cycle length coefficient	Not Present
CN Information Elements	Not Dropont
-CN Information alements	Not Fresent
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
>RB with PDCP information list	Not Present
>>RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE mode	FDD
-UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 2
-UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE channel requirement	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE mode	FDD
-DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
	10B
-CHOICE mode	FDD
-Scrambling code type	
-Scrambling code number	0 (0 t0 10777215) Not Drocont(1)
-NUMBER OF DEDCH	Not Present(1) SE is reference to TS24.109 clause 6.10
-Spreading racion	SF is reference to 1334.106 clause 0.10
TECLovistopco	
Number of ERI bit	Not Procent(0)
-Puncturing Limit	Reference to TS3/ 108 clause 6 10
	Parameter Set
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-DPC mode	0 (single)
-CHOICE mode	FDD
-Power offset P _{Pilot-DPDCH}	TBD
-DL rate matching restriction information	Not Present
-Spreading factor	Reference to TS34.108 clause 6.10
	Parameter Set
-Fixed or Flexible Position	Flexible
-TFCI existence	TRUE
-CHOICE SF	Not Present
-Number of bits for Pilot bits(SF=128,256)	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info (10.3.6.33)	Not Present

Information Element	Value/Remark
-TX Diversity mode (10.3.6.86)	None
-SSDT information (10.3.6.77)	Not Present
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
-Primary scrambling code	350
-PDSCH with SHO DCH info (10.3.6.47)	Not Present
-PDSCH code mapping (10.3.6.43)	Not Present
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	0 chips
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	1
-Spreading factor	Reference to TS34.108 clause 6.10
	Parameter Set
-Code number	SF-1(SF is reference to TS34.108 clause
	6.10 Parameter Set)
-Scrambling code change	No change
-TPC combination index	0
- SSDT Cell Identity	-a
 Closed loop timing adjustment mode 	Not Present
- SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

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

8.3.2.1.5 Test requirements

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

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

8.3.2.2 FDD/FDD Hard Handover to inter-frequency cell

8.3.2.2.1 Definition and applicability

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

The requirements and this test apply to the FDD UE.

8.3.2.2.2 Minimum requirement

The hard handover delay shall be less than 100 ms in CELL_DCH state in the dual carrier case. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

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

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

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

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

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

The phase reference is the primary CPICH.

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

8.3.2.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.2.2.4 Method of test

8.3.2.2.4.1 Initial conditions

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

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

The test parameters are given in Table 8.3.2.2.1 and 8.3.2.2.2 below. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 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. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a PHYSICAL CHANNEL RECONFIGURATION with activation time at beginning of T3 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined in TS 25.13325.331 [28].

Parameter		Unit	Value	Comment			
DCH parameters			DL Reference Measurement	As specified in TS 25.10134.121			
		Channel 12.2 kbps		section AC.3.1			
Power Cont	rol		On				
Target quali DTCH	ty value on	BLER	0.01				
Compressed	d mode		A.22 set 1	As specified in TS <u>25.10134.121</u> section A <u>C</u> .5.			
Initial	Active cell		Cell 1				
conditions	Neighbour cell		Cell 2				
Final conditions	Final Active cell conditions		Cell 2				
Threshold n frequency	on used	dB	-18	Absolute Ec/I0 threshold for event 2C			
Reporting ra	ange	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 de threshold	eactivation		0	Applicable for event 1A			
Time to Trigger		ms	0				
Filter coefficient			0				
T1		S	5				
T2		S	10				
T3		S	5				

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

Parameter	Unit		Cell 1		Cell 2					
		T1 T2		T3	T1	Т3				
UTRA RF Channel			Channel 1	•		Channel 2				
Number										
CPICH_Ec/lor	dB		-10			-10				
PCCPCH_Ec/lor	dB		-12			-12				
SCH_Ec/lor	dB		-12			-12				
PICH_Ec/lor	dB		-15			-15				
DPCH_Ec/lor	dB	Note1	Note1	Note1Note3	N/A	N/A	Note1			
OCNS		Note2	Note2	Note2	-0.941	-0.941	Note2			
\hat{I}_{or}/I_{oc}	dB		0		-1.8-Infinity	-1.8	-1.8			
Inc	dBm/			-7	70					
00	3.84									
	MHz									
CPICH_Ec/lo	dB		-13		-Infinity	-1	4			
Propagation		AWGN								
Condition										
Note 1: The DPCH level is controlled by the power control loop										
Note 2: The power of	Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I									
Note 3: The DPCH may not be power controlled by the power control loop.										

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

8.3.2.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 with Compressed mode parameters as in Table 8.3.2.2.1.
- 4) SS shall transmit two MEASUREMENT CONTROL messages, one for each event type.
- 5) After 5 seconds, the SS shall switch the power settings from T1 to T2
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3
- 8) After 10 seconds, the SS shall switch the power settings from T2 to T3
- 9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCCH to cell 2 less than 100 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

11)Repeat step 1-10 [TBD] times

Specific Message Contents

All messages indicated belowabove shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

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

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	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	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	Not Dropont
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
-Inter-frequency measurement quantity (10.3.7.10)	Inter-frequency reporting criteria
-Inter-frequency reporting criteria	
-Filter coefficient	0
-CHOICE mode	
-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)	
-SFN-SFN observed time difference reporting indicator	Type 1
-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	TRUE
-Reporting cell status (10.3.7.61)	Depart calls within monitored act on non
	Report cells within monitored set on non-
Maximum number of reported calls per reported populsed	
frequency	
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set undate (10.3.7.22)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting
	criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity (10.3.7.14)	Event 2C
-Threshold used frequency	Not Present
-W used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within monitored set on non-
A first strength and first antical calls non-montral son used	used frequency
-Maximum number of reported cells per reported non-used	1
Trequency	
-Parameters required for each non-used mequency	
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

Second MEASUREMENT CONTROL message, event 1A (step 4):

Message Type (10.217) Constraint UE information elements 0 ARC transaction identifier 0 Integrity check info Not Present Messurement Information elements 1 Messurement Information elements 1 Messurement Identify 1 Messurement Reporting Mode (10.3.7.49) Modify -Additional measurements ist (10.3.7.16) Inter-frequency measurement objects list (10.3.7.13) -Inter-frequency measurement objects list (10.3.7.18) Inter-frequency reporting criteria -Hiter-frequency guality estimate FDD -CHOICE mode CPICH Ec/NO -Inter-frequency reporting indicator True -Reporting criteria field FALSE -For CHOICE reporting indicator TRUE -CPICH Ec/NO reporting indicator TRUE -CPICH Ec/NO reporting indicator TRUE -CP	Information Element/Group name	Value/Remark
UE information elements 0 NRC transaction identifier 0 Measurement Information elements 1 Measurement Identify 1 Measurement Identify 1 Measurement Identify 1 Measurement Report Transfer Mode - -Additional measurements list (10.3.7.16) - -Inter-frequency measurement objects list (10.3.7.13) - -Inter-frequency measurement objects list (10.3.7.18) - -CHOICE Measurement guantity (10.3.7.18) - -CHOICE Trequency measurement objects list (10.3.7.18) - -CHOICE Trequency measurement objects list (10.3.7.18) - -CHOICE Trequency propring criteria - -Inter-frequency reporting criteria - -Inter-frequency quality estimate CPICH Ec/N0 -Inter-frequency reporting indicator Type 1 -Cell admity reporting indicator TRUE -CPICH Ec/N0 Ecroporting indicator TRUE </td <td>Message Type (10.2.17)</td> <td>T dido i toniani</td>	Message Type (10.2.17)	T dido i toniani
-REC transaction identifier 0 -Integrity check info Not Present -Measurement Information elements 1 -Measurement Report Transfer Mode - AM RLC -Measurement Report Transfer Mode - AM RLC -Periodical Reporting / Event Trigger Reporting Mode - AM RLC -Prevent regort Transaction identity - Massurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode - Massurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode - M RLC -Inter-frequency measurement 10.3.7.16) - Inter-frequency measurement quantity (10.3.7.18) -Inter-frequency reporting criteria - -Inter-frequency reporting quantity (10.3.7.21) - -UTRA Carrier RSSI FALSE -Frequency quality estimate - -Not Present ing indicator - -CHOICE mode - -Not Present ing indicator - -Producery porting indicator - -Producery quality estimate - -Not Present - -Not Present - -Producery quality estimate <t< td=""><td>UE information elements</td><td></td></t<>	UE information elements	
Integrity check info Not Present Measurement Information elements 1 Measurement Reporting Mode (10.3.7.49) 1 Measurement Reporting Mode (10.3.7.49) AM RLC -Periodical Reporting Mode (10.3.7.4) AM RLC -CHOICE Measurement Reporting Mode (10.3.7.1) Not Present -Inter-frequency measurement bigets list (10.3.7.13) Inter-frequency measurement objects list (10.3.7.13) -Inter-frequency measurement objects list (10.3.7.13) Inter-frequency reporting criteria -Inter-frequency reporting criteria 0 -Fiter coefficient 0 -CHOICE mode CPICH EcNO -Inter-frequency reporting quantity (10.3.7.21) Inter-frequency reporting criteria -Fiter coefficient 0 -Foreurency quality restimate FALSE -Foreurency quality restimg indicator True -CHOICE mede FDD -CHOICE mede FDD -CHOICE mede FDD -CHOICE mede FDD -CHOICE mode True -CHOICE mode FDD -CHOICE mode FDD -CHOICE mode	-RRC transaction identifier	0
Measurement Identity 1 Measurement Identity 1 Measurement Reporting Mode 1 Measurement Reporting Mode 4 -Additional measurement Reporting Mode Event trigger -Additional measurement pro- denting Mode Not Present -Additional measurement (10.3.7.46) Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement (10.3.7.16) Inter-frequency measurement (10.3.7.13) -Inter-frequency measurement quantity (10.3.7.13) Inter-frequency reporting criteria -Inter-frequency measurement quantity (10.3.7.13) Inter-frequency reporting criteria -Inter-frequency reporting criteria 0 -Reporting Mode FALSE -Frequency reporting indicator Type 1 -Cell dentity reporting indicator TRUE -CPICH RC/N reporting indicator TRUE -CPICH RC/N reporting indicator TRUE -Partose reporting indicator TRUE -Partose reporting indicator TRUE -CPICH RC/N reporting indicator TRUE -Partose reporting indicator TRUE -Reporting Range Constant A	-Integrity check info	Not Present
Measurement Comman (10.3.7.46) 1 Measurement Comman (10.3.7.46) Modify Measurement Report Trager Reporting Mode AM RLC Periodical Reporting / Event Trigger Reporting Mode AM RLC -Additional measurement list (10.3.7.16) Inter-frequency measurement objects list (10.3.7.13) -Inter-frequency measurement objects list (10.3.7.13) Inter-frequency measurement objects list (10.3.7.13) -Inter-frequency measurement objects list (10.3.7.13) Inter-frequency reporting criteria -Inter-frequency reporting criteria 0 -Fiter coefficient 0 -CHOICE mode CPICH Ec/N0 -Inter-frequency reporting quantity (10.3.7.21) FALSE -Frequency quality estimate 0 -Oell synchronisation information reporting indicator Type 1 -Cell object light of the propring indicator TRUE -CPICH Ec/N0 reporting indicator TRUE -Partiolos reporting indicator TRUE <t< td=""><td>Measurement Information elements</td><td></td></t<>	Measurement Information elements	
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-Measurement Report Transfer Mode AMR LC -Periodical Reporting / Event Trigger Reporting Mode AMR LC -Additional measurements list (10.3.7.1) Not Present -CHOICE Measurement type Inter-frequency measurement objects list (10.3.7.13) -Inter-frequency measurement objects list (10.3.7.13) Not Present -Inter-frequency measurement objects list (10.3.7.13) Inter-frequency reporting criteria -Inter-frequency reporting criteria 0 -CHOICE mode 0 -Measurement quality (10.3.7.21) -UTRA Carrier RSSI -Inter-frequency reporting quantity (10.3.7.21) -UTRA Carrier RSSI -Frequency quality estimate FALSE -Non frequency reporting indicator TRUE -Cell dentity reporting indicator TRUE -CHOICE mode TRUE -CHOICE mode TRUE -CHOICE mode TRUE -CHOICE mode TRUE -CHOICE reporting indicator TRUE -CHOICE reporting indicator TRUE -CHOICE reporting indicator TRUE -Measurement validity (10.3.7.51) Not Present -Inter-frequency seea	-Measurement Command (10.3.7.46)	Modify
-Measurement Report Transfer Mode AM RLC -Periodical Reporting / Event Trigger Reporting Mode Not Present -CHOICE Measurement Ist (10.3.7.16) Inter-frequency measurement quantity (10.3.7.13) -Inter-frequency measurement quantity (10.3.7.13) Inter-frequency measurement quantity (10.3.7.13) -Inter-frequency measurement quantity (10.3.7.13) Inter-frequency reporting criteria -Inter-frequency measurement quantity for frequency quality estimate 0 -CHOICE mode FDD -Measurement quantity for frequency quality estimate FALSE -Inter-frequency reporting quantity (10.3.7.21) FALSE -Frequency quality estimate FALSE -Nor frequency reporting indicator TRUE -Cell ldentity reporting indicator TRUE -Cell ldentity reporting indicator TRUE -CPICH ECNO reporting indicator TRUE -Reporting cell status (10.3.7.21) Report cells within monitored set on non-used frequency -CPICH ECNO reporting indicator TRUE -CPICH ECNO report criteria TRUE -Reporting cell status (10.3.7.22) Not Present -Intra-frequency end teclls per reported non-used frequency Not Present	-Measurement Reporting Mode (10.3.7.49)	
-Periodical Reporting / Event Trigger Reporting Mode Event trigger -Additional measurements list (10.3.7.16) Not Present -Inter-frequency measurement objects list (10.3.7.13) Inter-frequency measurement -Inter-frequency measurement quantity (10.3.7.18) Not Present -CHOICE mode 0 -Hiter-frequency reporting criteria 0 -Inter-frequency reporting quantity (10.3.7.21) Inter-frequency reporting quantity (10.3.7.51) -Inter-frequency reporting quantity (10.3.7.51) FALSE -Non frequency reporting indicator Type 1 -Reporting citeria TRUE -SPN-SFN baserved time difference reporting indicator TRUE -CPICH Ec/N0 TRUE -CPICH RSCP reporting indicator TRUE -CPICH RSCP reporting indicator TRUE -CPICH RSCP reporting indicator TRUE -CPICH reported cell ser reported non-used frequency Report cells within monitored set on non-used frequency -Massument validity (10.3.7.51) Not Present -Inter-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event -Inter-frequency measurement reporting criteria (10.3.7.39) 1 <	-Measurement Report Transfer Mode	AM RLC
-Additional measurements list (10.3.7.1) Not Present -CHOICE Measurement type Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement quantity (10.3.7.13) Inter-frequency measurement quantity (10.3.7.13) -Inter-frequency measurement quantity (10.3.7.13) Inter-frequency reporting criteria -Inter-frequency reporting criteria 0 -CHOICE mode FDD -Measurement quantity for frequency quality estimate CPICH Ec/N0 -Inter-frequency reporting quantities (10.3.7.51) FALSE -Non frequency reporting indicator TRUE -Cell synchronisation information reporting indicator TRUE -Cell lightly reporting indicator TRUE -OPICH Ec/No reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -PAROMER (Conting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -PAROMER (Conting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE <td>-Periodical Reporting / Event Trigger Reporting Mode</td> <td>Event trigger</td>	-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
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I-Inter-frequency measurement 0[0.3.7.16] -Inter-frequency measurement 0[0.3.7.13] -Inter-frequency measurement operits list (10.3.7.13) -Inter-frequency reporting criteria -Inter-frequency reporting criteria -Inter-frequency reporting quantity (10.3.7.18) -CHOICE mode -Neasurement quantity for frequency quality estimate -Inter-frequency reporting quantity (10.3.7.21) -ITRA Carrier RSSI -Frequency quality estimate -Non frequency reporting quantity (10.3.7.21) -Frequency quality estimate -Non frequency reporting quantities (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell dentity reporting indicator -CPICH Ec/NO estimate -Non frequency reporting indicator -CPICH Ec/NO reporting indicator -Pathloss reporting indicator -Pathloss reporting indicator -Maximum number of reported cells per reported non-used frequency -Maximum number of reported cells per reported non-used frequency -Maximum number of reported cells per reported non-used frequency -Maximum number of reported cells per reported non-used frequency weasurement reporting criteria (10.3.7.39) -Parameters required for each event -Intra-frequency event identity -Trigofing condition 2 -Reporting Range Constant -Oells forbiden to affect Reporting Range -CHOICE mode -Primary CPICH into (10.3.6.60) -W -W -Hystear Ecal status -Threshold used frequency -Reporting deactivation threshold -Reporting deactivation threshold -Reporting deactivation threshold -Reporting interval -Reporting interval -Reporting cal status -DPCH compressed mode status info (10.3.6.34) Not Present Not Present Not Present Not Present Not Present Not Present Not Present Not Present Not Present Not	-CHOICE Measurement type	Inter-frequency measurement
-Inter-frequency measurement objects list (10.3.7.13) Not Present -Inter-frequency reporting criteria Inter-frequency reporting criteria -Inter-frequency reporting criteria 0 -CHOICE mode FDD -Measurement quantity for frequency quality estimate CPICH Ec/N0 -Inter-frequency reporting quantity (10.3.7.21) FALSE -Inter-frequency reporting quantity (10.3.7.51) FALSE -Non frequency reporting indicator TRUE -Cell synchronisation information reporting indicator TRUE -CPICH Ec/No Perporting indicator TRUE -OPICH RSCP reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -Measurement validity (10.3.7.51) Not Present -Measurement validity (10.3.7.22) Not Present -Mainum number of reported cells per reported non-used frequency -Mainum number of reported cells per reporting intra-frequency measurement reporting criteria Not Present -Intra-frequency measurement reporting criteria (10.3.7.39) Parameters required for each event 1 -Intra-frequency event identity Event 1A Active set cells and moniltored set cells -	-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency reporting criteria Inter-frequency reporting criteria -Filter coefficient 0 -CHOICE mode FDD -Inter-frequency reporting quantity (10.3.7.21) FALSE -Inter-frequency reporting quantity (10.3.7.21) FALSE -Trequency quality estimate CPICH Ec/N0 -Cell spectro quality estimate FALSE -Non frequency reporting indicator TRUE -Cell spectromostation information reporting indicator TRUE -CHOICE mode FDD -CHOICE mode FDD -CHOICE mode FDD -CHOICE mode TRUE -CHOICE mode TRUE -CHOICE mode TRUE -CHOICE mode TRUE -CHOICE reported cell Report cells within monitored set on non-used frequency -Maximum number of reported cells per reported non-used frequency -Maximum number of reported cells per reporting criteria (10.3.7.39) Not Present -Inter-frequency event identity Event 1A -CHOICE report criteria 1.0 -CHOICE report oriteria 0 dB -Primary CPICH Into (10.3.6.60) Not Present -Pr	-Inter-frequency measurement objects list (10.3.7.13)	Not Present
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-Inter-requency reporting chilena 0 -Filter coefficient 0 -CHOICE mode FDD -Measurement quantity for frequency quality estimate CPICH Ec/N0 -Inter-frequency reporting quantity (10.3.7.21) FALSE -Trequency quality estimate FALSE -Non frequency related cell reporting quantities (10.3.7.5) FXFNSFN observed time difference reporting indicator -Cell synchronisation information reporting indicator TRUE -CHOICE mode FDD -OPICH Ec/N0 reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -Maximum number of reported cells per reported non-used Report cells within monitored set on non-used frequency -Maximum number of reported cells per reported non-used 1 Inter-frequency measurement reporting criteria (10.3.7.39) 1 -Parameters required for each event 1 -Intra-frequency event identity 4 dB -CHOICE mode FDD -Primary CPICH into (10.3.6.60) -W -W 1.0 -Reporting deactivation threshold 0 dB	-CHOICE reporting criteria	Inter-frequency reporting criteria
Ther Generation 0 -CHOICE mode FDD -Inter-frequency reporting quantity (10.3.7.21) FALSE -UTRA Carrier RSSI FALSE -Frequency quality estimate FALSE -Non frequency related cell reporting quantities (10.3.7.5) FSN-SFN observed time difference reporting indicator -Cell letentity reporting indicator TRUE -Cell letentity reporting indicator TRUE -CHOICE mode FDD -CPICH RSCP reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -PARDICE reported cell Report cells within monitored set on non-used frequency -Maximum number of reported cells per reported non-used frequency 1 -Measurement validity (10.3.7.51) Not Present -Intra-frequency event identity 1 -Intra-frequency event identity 1 -Triggering condition 2 Active set cells and monitored set cells -Reporting Range Constant 0 -CHOICE mode FDD -Primary CPICH info (10.3.6.60) Not Present -W 0 -Triggering deactivation threshold <t< td=""><td>-Inter-inequency reporting criteria</td><td>0</td></t<>	-Inter-inequency reporting criteria	0
OLDCE mode FDU -Measurement quantity for frequency quality estimate CPICH Ec/N0 -Inter-frequency reporting quantity (10.3.7.21) FALSE -Trequency related cell reporting quantities (10.3.7.5) FALSE -SFN-SFN observed time difference reporting indicator Type 1 -Cell dentity reporting indicator TRUE -CHOICE mode FDD -CPICH Ec/N0 reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -CHOICE reported cell Reporting oell status (10.3.7.61) -CHOICE reported cell Report cells within monitored set on non-used frequency -Maximum number of reported cells per reported non-used frequency -Measurement validity (10.3.7.51) -Inter-frequency set update (10.3.7.22) Not Present -Intra-frequency event identity Event 1A -Triggering condition 2 Active set cells and monitored set cells -Reporting Range Constant -Cells forbidden to affect Reporting Range -DD -CHOICE mode FDD Not Present -Tringering deactitation threshold 0		
-Inter-frequency reporting quantity (0.3.7.21) -UTRA Carrier RSSI -Inter-frequency reporting quantities (10.3.7.5) FALSE -Non frequency related cell reporting quantities (10.3.7.5) FALSE -SFN-SFN observed time difference reporting indicator Type 1 -Cell synchronisation information reporting indicator TRUE -Cell conclement TRUE -CHICH EC/NO FALSE -CHICH EC/NO FALSE -CHICH EC/NO FALSE -CHICH EC/NO FALSE -CHICH EC/NO reporting indicator TRUE -CHICH EC/NO reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -Asymmetric ell status (10.3.7.61) Report cells within monitored set on non-used frequency -Maximum number of reported cells per reported non-used Not Present -Intra-frequency measurement reporting criteria (10.3.7.29) Not Present -Intra-frequency event identity Event 1A -Trigering condition 2 Active set cells and monitored set cells -Reporting Range Constant 1 -OCHOICE mode FDD <td>Measurement quantity for frequency quality estimate</td> <td></td>	Measurement quantity for frequency quality estimate	
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-SFN-SFN observed time difference reporting indicator Type 1 -Cell synchronisation information reporting indicator TRUE -Cell identity reporting indicator TRUE -CHOICE mode FDD -CPICH Ec/N0 reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting cell status (10.3.7.61) Report cells within monitored set on non-used frequency -Maximum number of reported cells per reported non-used frequency Not Present -Measurement validity (10.3.7.51) Not Present -Intra-frequency set update (10.3.7.22) Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event 1 -Intra-frequency measurement reporting Range 1 -Cells forbidden to affect Reporting Range 1.0 -Primary CPICH info (10.3.6.60) W -W 1.0 -Reporting date dativation threshold 0 -Reporting date dativation threshold 0 -Primary CPICH info (10.3.6.60) W -W Not Present -Threshold used frequency Not Present -Reporting date datin threshold	-Non frequency related cell reporting quantities (10.3.7.5)	
-Cell synchronisation information reporting indicator TRUE -Cell Identity reporting indicator TRUE -CHOICE mode FDD -CPICH EXN0 reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -Asymmut and the system of t	-SFN-SFN observed time difference reporting indicator	Type 1
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-CHOICE mode FDD -CPICH Ec/N0 reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -Pathloss reporting indicator TRUE -Reporting cell status (10.3.7.61) Report cells within monitored set on non-used frequency -Maximum number of reported cells per reported non-used frequency 1 -Maximum number of reported cells per reported non-used frequency set update (10.3.7.22) Not Present -Inter-frequency weasurement reporting criteria (10.3.7.39) Parameters required for each event -Intra-frequency vent identity Event 1A -Triggering condition 2 Active set cells and monitored set cells -Reporting Range Constant 4 dB -Cells forbidden to affect Reporting Range Ot Present -CHOICE mode FDD -Primary CPICH info (10.3.6.60) Not Present -W 0 -Reporting deactivation threshold Not Present -Time to trigger 0 dB -Threshold used frequency Not Present -Threshold used frequency Not Present -Threshold used frequency Not Present -Threshold used frequency	-Cell Identity reporting indicator	TRUE
-CPICH Ec/N0 reporting indicator TRUE -Pathloss reporting indicator TRUE -Reporting cell status (10.3.7.61) Report cells within monitored set on non-used frequency -Maximum number of reported cells per reported non-used frequency Not Present -Measurement validity (10.3.7.51) Not Present -Inter-frequency set update (10.3.7.22) Not Present -CHOICE report criteria Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event 1 -Intra-frequency measurement reporting criteria (10.3.7.39) 1 -Intra-frequency measurement reporting criteria (10.3.7.39) 1 -Parameters required for each event 1 -Intra-frequency measurement reporting criteria (10.3.7.39) 1 -Parameters required for each event 1 -Intra-frequency measurement reporting criteria (10.3.7.39) 1 -Parameters required for each event 1 -CHOICE mode 5DD -Primary CPICH info (10.3.6.60) 1 -W 1.0 -Hysteresis 0 dB -Threshold used frequency 0 dB -Time to trigger 0 ms -Amount of reporting <td< td=""><td>-CHOICE mode</td><td>FDD</td></td<>	-CHOICE mode	FDD
-CPICH RSCP reporting indicator TRUE -Reporting cell status (10.3.7.61) TRUE -CHOICE reported cell Report cells within monitored set on non- used frequency -Maximum number of reported cells per reported non-used frequency 1 -Masurement validity (10.3.7.51) Not Present -Intra-frequency set update (10.3.7.22) Not Present -CHOICE report criteria Intra-frequency measurement reporting criteria -Intra-frequency measurement reporting criteria (10.3.7.39) 1 -Parameters required for each event 1 -Intra-frequency event identity Event 1A -Triggering condition 2 Active set cells and monitored set cells -Reporting Range Constant 4 dB -Cells forbidden to affect Reporting Range Not Present -Primary CPICH info (10.3.6.60) 1.0 -W 4 dB -Threshold used frequency Not Present -Reporting deactivation threshold 0 -Reporting interval 0 ms -Reporting cell status Not Present -Tribe to trigger 0 ms -Active set Not Present -Reporting interval 0 ms -Re	-CPICH Ec/N0 reporting indicator	TRUE
Pathloss reporting indicator TRUE Reporting cell status (10.3.7.61) -CHOICE reported cell Report cells within monitored set on non-used frequency Maximum number of reported cells per reported non-used frequency 1 Not Present Measurement validity (10.3.7.51) Not Present 1 Inter-frequency set update (10.3.7.22) Not Present 1 Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event 1 Intra-frequency event identity Event 1A Active set cells and monitored set cells Reporting Range Constant 4 dB Not Present -CHOICE mode -Primary CPICH info (10.3.6.60) 1.0 -W Hysteresis 0 dB -Threshold used frequency Not Present 0 -Reporting deactivation threshold 0 Not Present -Time to trigger 0 0 Not Present -Reporting interval 0 Not Present 0 -Reporting cell status Not Present 0 Not Present -CHOICE mode -Primary CPICH info (10.3.6.60) Not Present 0 -Reporting cleativation threshold 0 </td <td>-CPICH RSCP reporting indicator</td> <td>TRUE</td>	-CPICH RSCP reporting indicator	TRUE
-Reporting cell status (10.3.7.61) Report cells within monitored set on non-used frequency -Maximum number of reported cells per reported non-used frequency 1 -Measurement validity (10.3.7.51) Not Present -Intra-frequency set update (10.3.7.22) Not Present -CHOICE report criteria Intra-frequency measurement reporting criteria (10.3.7.39) -Parameters required for each event 1 -Intra-frequency west uddattity 1 -Intra-frequency event identity 1 -Triggering condition 2 Active set cells and monitored set cells -Reporting Range Constant 4 dB -Cells forbidden to affect Reporting Range Not Present -Primary CPICH info (10.3.6.60) 1.0 -W 1.0 -Hysteresis 0 dB -Tinger to trigger Not Present -Amount of reporting Not Present -Reporting deactivation threshold 0 -Reporting cell status Not Present -Threshold used frequency Not Present -Reporting deactivation threshold 0 -Reporting cell status Not Present -Time to trigger 0 Not Present	-Pathloss reporting indicator	TRUE
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-Intra-frequency event identity Event 1A -Triggering condition 2 Active set cells and monitored set cells -Reporting Range Constant 4 dB -Cells forbidden to affect Reporting Range Not Present -CHOICE mode FDD -Primary CPICH info (10.3.6.60) 1.0 -W 1.0 -Hysteresis 0 dB -Threshold used frequency Not Present -Reporting deactivation threshold 0 -Replacement activation threshold 0 -Time to trigger 0 ms -Amount of reporting Not Present (Note 1) -Reporting cell status Not Present Physical channel information elements Not Present -DPCH compressed mode status info (10.3.6.34) Not Present Note 1: This IE is not needed as "Intra-frequency reporting criteria" is included in the IE "Inter-frequency measurement" Note 2: Reporting interval = 0 ms means no periodical reporting	-Parameters required for each event	1
-Triggering condition 2 Active set cells and monitored set cells -Reporting Range Constant 4 dB -Cells forbidden to affect Reporting Range Not Present -CHOICE mode FDD -Primary CPICH info (10.3.6.60) 1.0 -W 1.0 -Hysteresis 0 dB -Trime shold used frequency Not Present -Reporting deactivation threshold 0 -Reporting interval 0 ms -Amount of reporting Not Present -Reporting cell status Not Present Physical channel information elements Not Present -DPCH compressed mode status info (10.3.6.34) Not Present Note 1: This IE is not needed as "Intra-frequency reporting criteria" is included in the IE "Inter-frequency measurement" Note 2: Reporting interval = 0 ms means no periodical reporting	-Intra-frequency event identity	Event 1A
-Reporting Range Constant 4 dB -Cells forbidden to affect Reporting Range Not Present -CHOICE mode FDD -Primary CPICH info (10.3.6.60) 1.0 -W 0 dB -Threshold used frequency Not Present -Reporting deactivation threshold 0 -Replacement activation threshold 0 -Time to trigger 0 ms -Amount of reporting Not Present (Note 1) -Reporting interval 0 ms (Note 2) -Reporting cell status Not Present Physical channel information elements Not Present -DPCH compressed mode status info (10.3.6.34) Not Present Note 1: This IE is not needed as "Intra-frequency reporting criteria" is included in the IE "Inter-frequency measurement" Note 2: Reporting interval = 0 ms means no periodical reporting	-Triggering condition 2	Active set cells and monitored set cells
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-Threshold used frequency Not Present -Reporting deactivation threshold 0 -Replacement activation threshold Not Present -Time to trigger 0 ms -Amount of reporting Not Present (Note 1) -Reporting interval 0 ms (Note 2) -Reporting cell status Not Present Physical channel information elements Not Present -DPCH compressed mode status info (10.3.6.34) Not Present Note 1: This IE is not needed as "Intra-frequency reporting criteria" is included in the IE "Inter-frequency measurement" Note 2: Reporting interval = 0 ms means no periodical reporting	-Hysteresis	0 dB
-Reporting deactivation threshold 0 -Replacement activation threshold 0 -Time to trigger 0 ms -Amount of reporting Not Present -Amount of reporting 0 ms -Reporting interval 0 ms (Note 1) -Reporting cell status 0 ms (Note 2) -Reporting cell status info (10.3.6.34) Not Present Physical channel information elements -DPCH compressed mode status info (10.3.6.34) Note 1: This IE is not needed as "Intra-frequency reporting criteria" is included in the IE "Inter-frequency measurement" Note 2: Reporting interval = 0 ms means no periodical reporting	-Threshold used frequency	Not Present
-Replacement activation threshold Not Present -Time to trigger 0 ms -Amount of reporting Not Present (Note 1) -Reporting interval 0 ms (Note 2) -Reporting cell status Not Present Physical channel information elements Not Present -DPCH compressed mode status info (10.3.6.34) Not Present Note 1: This IE is not needed as "Intra-frequency reporting criteria" is included in the IE "Inter-frequency measurement" Note 2: Reporting interval = 0 ms means no periodical reporting	-Reporting deactivation threshold	0
-Time to trigger 0 ms -Amount of reporting Not Present (Note 1) -Reporting interval 0 ms (Note 2) -Reporting cell status Not Present Physical channel information elements Not Present -DPCH compressed mode status info (10.3.6.34) Not Present Note 1: This IE is not needed as "Intra-frequency reporting criteria" is included in the IE "Inter-frequency measurement" Note 2: Reporting interval = 0 ms means no periodical reporting	-Replacement activation threshold	Not Present
-Amount of reporting Not Present (Note 1) -Reporting interval 0 ms (Note 2) -Reporting cell status Not Present Physical channel information elements -DPCH compressed mode status info (10.3.6.34) Note 1: This IE is not needed as "Intra-frequency reporting criteria" is included in the IE "Inter-frequency measurement" Note 2: Reporting interval = 0 ms means no periodical reporting	-Time to trigger	0 ms
-Reporting interval 0 ms (Note 2) -Reporting cell status Not Present Physical channel information elements -DPCH compressed mode status info (10.3.6.34) -DPCH compressed mode status info (10.3.6.34) Not Present Note 1: This IE is not needed as "Intra-frequency reporting criteria" is included in the IE "Inter-frequency measurement" Note 2: Reporting interval = 0 ms means no periodical reporting	-Amount of reporting	Not Present (Note 1)
-Reporting cell status Not Present Physical channel information elements Not Present -DPCH compressed mode status info (10.3.6.34) Not Present Note 1: This IE is not needed as "Intra-frequency reporting criteria" is included in the IE "Inter-frequency measurement" Note 2: Reporting interval = 0 ms means no periodical reporting	-Reporting interval	0 ms (Note 2)
Physical channel information elements -DPCH compressed mode status info (10.3.6.34) Note 1: This IE is not needed as "Intra-frequency reporting criteria" is included in the IE "Inter-frequency measurement" Note 2: Reporting interval = 0 ms means no periodical reporting	-Reporting cell status	Not Present
-DPCH compressed mode status into (10.3.6.34) Not Present Note 1: This IE is not needed as "Intra-frequency reporting criteria" is included in the IE "Inter-frequency measurement" Note 2: Reporting interval = 0 ms means no periodical reporting	Physical channel information elements	
Note 1: I his IE is not needed as "Intra-frequency reporting criteria" is included in the IE "Inter-frequency measurement" Note 2: Reporting interval – 0 ms means no periodical reporting	-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 2: Reporting interval – 0 ms means no periodical reporting	Note 1: I his IE is not needed as "Intra-frequency reporting cri	teria" is included in the IE "Inter-frequency
	Note 2: Reporting interval – 0 ms means no periodical reporting	na

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
	At 13 Not Present
	Not Present
-New C-RNTI -RRC State Indicator	
-LITRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
>RB with PDCP information list	Not Present
>>RB with PDCP information	Not Present
PhyCH information elements	
-Frequency into (10.3.6.36)	
	FUU Some unlink LIARECN as used for as 1.2
-UARFON Uplink(Nu)	Same uplink UARFON as used for cell 2
	Same downlink UARFON as used for cell 2
-Maximum allowed LIL_TX nower	33 dBm
-CHOICE channel requirement	Unlink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE mode	FDD
-DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
-CHOICE mode	FDD
-Scrambling code type	
-Scrambling code number	0 (0 10 10/7/215) Not Present(1)
-Spreading factor	SE is reference to TS34 108 clause 6 10
	Parameter Set
-TECI existence	TRUE
-Number of FBI bit	Not Present(0)
-Puncturing Limit	Reference to TS34.108 clause 6.10
5	Parameter Set
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
- I Iming Indicator	Initialise
-URIN-Targetorini Irame Offset	NOT Present
-Downlink Droit power control information (10.3.0.23)	0 (single)
-CHOICE mode	
	TBD
-DL rate matching restriction information	Not Present
-Spreading factor	Reference to TS34.108 clause 6.10
	Parameter Set
-Fixed or Flexible Position	Flexible
-TFCI existence	TRUE
-CHOICE SF	Not Present
-Number of bits for Pilot bits(SF=128,256)	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info (10.3.6.33)	Not Present (Note 1)

Information Element	Value/Remark						
-TX Diversity mode (10.3.6.86)	None						
-SSDT information (10.3.6.77)	Not Present						
-Default DPCH Offset Value (10.3.6.16)	0						
-Downlink information per radio link list	1						
-Downlink information for each radio link (10.3.6.27)							
-CHOICE mode	FDD						
-Primary CPICH info (10.3.6.60)							
-Primary scrambling code	350						
-PDSCH with SHO DCH info (10.3.6.47)	Not Present						
-PDSCH code mapping (10.3.6.43)	Not Present						
-Downlink DPCH info for each RL (10.3.6.21)							
-CHOICE mode	FDD						
-Primary CPICH usage for channel estimation	Primary CPICH may be used						
-DPCH frame offset	0 chips						
-Secondary CPICH info	Not Present						
-DL channelisation code							
-Secondary scrambling code	1						
-Spreading factor	Reference to TS34.108 clause 6.10						
	Parameter Set						
-Code number	SF-1(SF is reference to TS34.108 clause						
	6.10 Parameter Set)						
-Scrambling code change	No change						
-TPC combination index	0						
- SSDT Cell Identity	-a						
 Closed loop timing adjustment mode 	Not Present						
- SCCPCH information for FACH (10.3.6.70)	Not Present						
Note 1: IE "DPCH compressed mode info" is not needed as default values are applied that have previously been received in RADIO BEARER SETUP or RRC CONNECTION SETUP							

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.

8.3.2.2.5 Test requirements

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

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 #15 Lund, Sweden, 24th May, 2002

Tdoc T1-020247

							CR-Form-v5				
CHANGE REQUEST											
[#] TS	<mark>34.12</mark>	<mark>1</mark> CR <mark>164</mark>	ж rev	– #	Current version	on: 3.8.0	ж				
For HELP on using this form, see bottom of this page or look at the pop-up text over the \Re symbols.											
Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network											
Title: ೫	Addition	n of details for RI CH)	RM test cases i	n 8.3.7.1 a	and 8.3.7.2 (C	ell Re-selection	n in				
Source: ೫	Ericsso	n									
Work item code: ೫					<i>Date:</i>	2002-05-09					
Category: % F Release: % R99 Use one of the following categories: Use one of the following releases: 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can be found in 3GPP TR 21.900. REL-5 (Release 5)											
Reason for change	e: ೫ <mark> Te</mark>	st cases for cell	re-selection in	JRA_PCH	state are miss	sing.					
Summary of chang	ge:	ded test cases fo	or cell re-select	<mark>ion in URA</mark>	PCH state.						
Consequences if not approved:	# Re	equirements in th	e core specifica	ation would	not be tested	1.					
Clauses affected:	ж <mark>8.3</mark>	3.7									
Other specs affected:	ж	Other core speci Test specificatio O&M Specificatio	ifications ns ons	6							
Other comments:	ж										

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: <u>http://www.3gpp.org/3G_Specs/CRs.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

8.3.7 Cell Re-selection in URA_PCH

8.3.7.1 One frequency present in the neighbour list

Void 8.3.7.1.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the URA UPDATE message with cause value "URA reselection" in the new cell.

The requirements and this test apply to the FDD UE.

8.3.7.1.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

<u>NOTE:</u> The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

TevaluateFDDSee Table 4.1 in TS 25.133 [2] clause 4.2.2.TsiMaximum repetition period of relevant system info blocks that needs to be received
by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 5.7.2 and A.5.7.1.

8.3.7.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.7.1.4 Method of test

8.3.7.1.4.1 Initial conditions

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

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

This scenario implies the presence of 1 carrier and 6 cells as given in tables 8.3.7.1.1 and 8.3.7.1.2. The UE is requested to monitor neighbouring cells on 1 carrier. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.3.7.1.1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter	Unit	Value	Comment
Access Service Class (ASC#0)			Selected so that no additional delay is
 Persistence value 	1	<u>1</u>	caused by the random access
			procedure. The value shall be used for
			all cells in the test.
DRX cycle length	<u>s</u>	<u>1,28</u>	The value shall be used for all cells in
			the test.
<u>T1</u>	<u>s</u>	<u>15</u>	T1 need to be defined so that cell re-
			selection reaction time is taken into
			account.
<u>T2</u>	<u>s</u>	<u>15</u>	T2 need to be defined so that cell re-
			selection reaction time is taken into
			account.

	Parameter	<u>Unit</u>	Ce	ell 1	Ce	Cell 2		Cell 3		Cell 4		ell 5	<u>Cell 6</u>									
			<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T1</u> <u>T2</u>		<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>								
UT	RA RF Channel		Chan	nel 1	Channe	Channel 1		Channel 1		el 1	Channel 1		Channel 1									
Nu	<u>mber</u>		Onum			<u>// 1</u>	Onam		Onann		Onani		Onam									
CF	<u>ICH_Ec/lor</u>	<u>dB</u>	<u>-10</u>		<u>-10</u>		<u>-10</u>		<u>-10</u>		<u>-10</u>		<u>-10</u>									
PC	CPCH_Ec/lor	<u>dB</u>	<u>-12</u>		<u>-12</u>		<u>-12</u>		<u>-12</u>		<u>-12</u>		<u>-12</u>									
SC	H_Ec/lor	<u>dB</u>	<u>-12</u>		<u>-12</u>		<u>-12</u>		<u>-12</u>		<u>-12</u>		<u>-12</u>									
PI(CH_Ec/lor	<u>dB</u>	<u>-15</u>		<u>-15</u>		<u>-15</u>		<u>-15</u>		<u>-15</u>		<u>-15</u>									
00	NS_Ec/lor	<u>dB</u>	<u>-0,94</u>		<u>-0,941</u>	1	<u>-0,941</u>		<u>-0,941</u>		<u>-0,941</u>	1	<u>-0,941</u>									
Î _o	r/I_{oc}	<u>dB</u>	<u>7,3</u>	<u>10,27</u>	<u>10,27</u>	<u>7,3</u>	<u>0,27</u>		<u>0,27</u>		<u>0,27</u>		<u>0,27</u>									
I_o	<u>c</u>	<u>dBm /</u> <u>3,84 MHz</u>	<u>-70</u>																			
CF	ICH_Ec/lo	<u>dB</u>	<u>-16</u>	<u>-13</u>	<u>-13</u>	<u>-16</u>	<u>-23</u>		<u>-23</u>		<u>-23</u>		<u>-23</u>									
Pro Co	<u>ppagation</u> ndition							AWO	<u>GN</u>													
Ce	Il selection and																					
res	election quality		CPIC	$H E_{c}/N_{0}$	CPICH	E_c/N_0	CPICH	$I E_c/N_0$	CPICH	E_{c}/N_{0}	CPICI	H E _c /N ₀	CPICH	$H E_c/N_0$								
me	asure																					
Qc	ualmin	<u>dB</u>	-	<u>20</u>	-2	<u>20</u>	-2	20	-20		<u>-20</u> <u>-20</u>		<u>20</u>		20							
Qr	xlevmin	<u>dBm</u>	Ύ.	<u>15</u>	-1	<u>15</u>	-1	<u>15</u>	<u>-115</u>		-115		-1	15								
<u>UE</u> RA	_TXPWR_MAX_ CH	<u>dB</u>		<u>21</u>	2	<u>:1</u>	2	<u>21</u> <u>21</u>		<u>21</u> <u>21</u>		<u>21</u>	2	<u>21</u>								
			<u>C1,</u>	<u>C2: 0</u>	<u>C2, (</u>	<u>C2, C1: 0</u>		<u>C1: 0</u>	<u>C4, C1: 0</u>		<u>C5,</u>	<u>C1: 0</u>	<u>C6</u> ,	<u>C1: 0</u>								
00	ffset2	dB	$\frac{O1}{C1}$	$C4 \cdot 0$	$\frac{02}{02}$	23.0	$\frac{03}{03}$	$\frac{52.0}{24.0}$	$\frac{04}{04}$	$\frac{32.0}{3.0}$	<u>C5</u>	$\frac{02.0}{03.0}$	<u>C6</u>	$\frac{02.0}{03.0}$								
00	<u>113012s, n</u>		$\frac{O1}{C1}$	$\frac{04.0}{05.0}$	$\frac{02}{C2}$	$\frac{04.0}{05.0}$	$\frac{00,0}{C3}$	$\frac{04.0}{05.0}$	C4	$\frac{50.0}{50}$	<u>C5</u>	$C4 \cdot 0$	<u>00,</u> C6	$C4 \cdot 0$								
			C1.	C6: 0	C2. 0	$\frac{02,05.0}{02,06.0}$		C6: 0	C4. C	26: 0	C5.	C6: 0	<u>C6.</u>	C5: 0								
Qh	yst2	dB		0	()	()	C)		0		0								
PE	NALTY_TIME	S		0	()	()	C)		0		0								
TE SE	MPORARY_OFF T2	dB	<u>0</u>		<u>0</u>		<u>0</u>		<u>0</u> <u>0</u>			<u>0</u> <u>0</u>		<u>0</u> <u>0</u>		<u>_</u>		<u>0</u>		<u>0</u>		<u>0</u>
Tre	eselection	S		0	(0)	C)		0		0								
Sir	ntrasearch	dB	<u>not</u>	sent	not	sent	not	sent	not s	not sent		sent	not	sent								

Table 8.3.7.1.2: Test parameters for Cell re-selection single carrier multi cell

8.3.7.1.4.2 Procedure

1) The SS activates cell 1-6 with T1 defined parameters and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

- 3) A RRC connection is set up according the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in URA_PCH state.
- 4) The SS waits for random access requests from the UE on cell 2.
- 5) After 15 s, the parameters are changed as described for T2.
- 6) -The SS waits for random access requests from the UE.
- 7) If the UE responds on cell 1 within 8 s then the number of successful tests is increased by one.
- 8) After another 15 s, the parameters are changed as described for T1.
- 9) The SS waits for random access requests from the UE.
- 10) If the UE responds on cell 2 within 8 s then the number of successful tests is increased by one.

11) -Repeat step 5) to 10) [TBD] times.

8.3.7.1.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of [FFS]% of the cases.

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

8.3.7.2 Two frequencies present in the neighbour list

8.3.7.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the URA UPDATE message with cause value "URA reselection" in the new cell.

The requirements and this test apply to the FDD UE.

8.3.7.2.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

<u>TevaluateFDD</u>	See Table 4.1 in TS 25.133 [2] clause 4.2.2.
<u>T</u> si	Maximum repetition period of relevant system info blocks that needs to be received by
-	the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 5.7.2 and A.5.7.2.

8.3.7.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.7.2.4 Method of test

8.3.7.2.4.1 Initial conditions

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

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

This scenario implies the presence of 2 carriers and 6 cells as given in tables 8.3.7.2.1 and 8.3.7.2.2. The UE is requested to monitor neighbouring cells on 2 carriers. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.3.7.2.1: General test parameters for Cell Re-selection in multi carrier case

Parameter	<u>Unit</u>	Value	Comment
Access Service Class (ASC#0)			Selected so that no additional delay is caused by
- Persistence value	=	<u>1</u>	the random access procedure. The value shall be
			used for all cells in the test.
DRX cycle length	<u>s</u>	<u>1,28</u>	The value shall be used for all cells in the test.
<u>T1</u>	<u>s</u>	<u>30</u>	T1 need to be defined so that cell re-selection
			reaction time is taken into account.
<u>T2</u>	<u>S</u>	<u>15</u>	T2 need to be defined so that cell re-selection
			reaction time is taken into account.

Table 8.3.7.2.2: Test parameters for Cell re-selection multi carrier multi cell

	Parameter	Unit	Cel	11	Cel	Cell 2		Cell 3		ell 4	Cell 5		Cell 6		
			<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
<u>U</u> T	RA RF Channel		Chan	ool 1	Chan	ool 2	Chapr		Channel 1		Channel 2		Channel 2		
<u>Nu</u>	mber		Chan		Chan		Chan						Chai		
CF	ICH_Ec/lor	<u>dB</u>	<u>-1</u>	<u>0</u>	<u>-1</u>	<u>0</u>	<u>-1</u>	<u>0</u>	-	<u>10</u>	<u>-1</u>	0	-	<u>10</u>	
PC	CPCH_Ec/lor	<u>dB</u>	1	2	-1	2	-1	2	-	12		2		12	
SC	H_Ec/lor	<u>dB</u>	<u>-1</u>	2	-1	2	<u>-1</u>	2	-	12	<u>-1</u>	2	-	<u>12</u>	
<u>PI(</u>	CH_Ec/lor	<u>dB</u>	<u>-1</u>	<u>5</u>	-1	<u>5</u>	<u>-1</u>	<u>5</u>	-	<u>15</u>	<u>-1</u>	5	-	<u>15</u>	
00	NS_Ec/lor	<u>dB</u>	<u>-0.9</u>	<u>41</u>	-0.9	<u>41</u>	<u>-0.9</u>	<u>41</u>	<u>-0.</u>	<u>941</u>	-0.9	<u>941</u>	<u>-0.</u>	<u>941</u>	
Î	r/I_{oc}	<u>dB</u>	<u>-3.4</u>	<u>2.2</u>	<u>2.2</u>	<u>-3.4</u>	<u>-7.4</u>	<u>-4.8</u>	<u>-7.4</u> <u>-4.8</u>		<u>-4.8</u>	<u>-4.8</u> <u>-7.4</u>		<u>-7.4</u>	
I_o	c	<u>dBm / 3.84</u> <u>MHz</u>					<u>70</u>								
CF	ICH_Ec/lo	<u>dB</u>	<u>-16</u>	<u>-13</u>	<u>-13</u>	<u>-16</u>	<u>-2</u> (<u>)</u>	-	<u>20</u>	-2	0	-2	<u>20</u>	
Pro Co	ppagation ndition						AWGN								
Ce res me	Il selection and election quality asure		<u>CPICH</u>	E _c ∕N ₀	<u>CPICH</u>	E _c /N ₀	<u>CPICH</u>	PICH E _d /N ₀ CPICH E _d /N ₀		Η <u>Ε_α/Ν</u> ₀	<u>CPICH E_c/N₀</u>		CPICH	Η E <u>c/N</u> 0	
Qo	ualmin	<u>dB</u>	-2	0	-2	0	<u>-2</u> (<u>)</u>	-20		<u>-20</u>		-2	20	
<u>Qr</u>	<u>klevmin</u>	<u>dBm</u>	<u>-11</u>	<u>5</u>	<u>-11</u>	<u>5</u>	<u>-11</u>	<u>5</u> <u>-115</u>		<u>15</u>	<u>-115</u>		<u>-115</u>		
UE RA	_TXPWR_MAX_ CH	<u>dB</u>	<u>21</u>	L	<u>2</u> ′	L	<u>21</u>	L	2	<u>21</u>	2	<u>1</u>	2	<u>!1</u>	
<u>Qc</u>	ffset2 _{s.n}	<u>dB</u>	<u>C1, C</u> <u>C1, C</u> <u>C1, C</u> <u>C1, C</u> <u>C1, C</u>	2:0 3:0 4:0 5:0 6:0	<u>C2, C</u> <u>C2, C</u> <u>C2, C</u> <u>C2, C</u> <u>C2, C</u>	<u>C2, C1: 0</u> <u>C2, C3: 0</u> <u>C2, C4: 0</u> <u>C2, C5: 0</u> <u>C2, C6: 0</u>		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		<u>C4, C1: 0</u> <u>C4, C2: 0</u> <u>C4, C3: 0</u> <u>C4, C5: 0</u> C4, C6: 0		<u>C5, (</u> <u>C5, (</u> <u>C5, (</u> <u>C5, (</u> <u>C5, (</u>	<u>21: 0</u> 22: 0 23: 0 24: 0 26: 0	<u>C6, 0</u> <u>C6, 0</u> <u>C6, 0</u> <u>C6, 0</u> <u>C6, 0</u>	C1: 0 C2: 0 C3: 0 C4: 0 C5: 0
<u>Q</u> h	<u>yst2</u>	<u>dB</u>	<u>0</u>		0	<u>0</u>				<u>0</u>	<u> </u>)		0	
PE	NALTY_TIME	<u>S</u>	<u>0</u>		<u>0</u>		<u>0</u>			<u>0</u>	<u> </u>	<u>)</u>		<u>0</u>	
TE SE	<u>MPORARY_OFF</u> T	<u>dB</u>	<u>0</u>		<u>0</u>		<u>0</u>			<u>0</u>	<u>C</u>	<u>)</u>	9	<u>0</u>	
Tre	selection	S	0		0		<u>0</u>			0	C)		0	
Sir	trasearch	dB	not s	ent	not s	ent	not s	ent	not	sent	not s	sent	not	sent	
Sir	tersearch	dB	not s	ent	not s	ent	not s	not sent		not sent		not sent		not sent	

8.3.7.2.4.2 Procedures

1) The SS activates cell 1-6 with T1 defined parameters and monitors cell 1 and 2 for random access requests from the UE.

2) The UE is switched on.

3) A RRC connection is set up according the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in URA PCH state.

4) The SS waits for random access requests from the UE on cell 2.

5) After 30 s, the parameters are changed as described for T2.

- 6) The SS waits for random access request from the UE. If the UE responds on cell 1 within 8 s then the number of successful tests is increased by one.
- 7) After another 15 s, the parameters are changed as described for T1.
- 8) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 8 s then the number of successful tests is increased by one.
- 9) Reduce T1 to 15 s and repeat step 5) to 8) [TBD] times.
- NOTE: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

8.3.7.2.5 Test requirements

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

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.

Void

	CR-Form-v5
ж	34.121 CR 165 # rev - # Current version: 3.8.0 #
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the # symbols.	
Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network	
Title: ೫	Addition of details for RRM test cases in 8.4.1 (RRC Re-establishment delay)
Source: ೫	Ericsson
Work item code: %	Date:
Category:	FRelease: %R99Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99D tetailed explanations of the above categories canREL-4be found in 3GPP TR 21.900.REL-5
Reason for change.	# Test case description of RRM test case 8.4.1 is missing in TS 34.121.
Summary of change	e: # Addition of two test cases in 8.4.1:
	- RRC Re-establishment delay Test 1 and Test 2
Consequences if not approved:	# Test case description of 8.4.1 remains incomplete.
Clauses affected:	¥ 8.4.1
Other specs affected:	# Other core specifications # Test specifications O&M Specifications
Other comments:	X

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 <u>ftp://ftp.3gpp.org/specs/</u> 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.
Error! No text of specified style in document. Error! No text of specified style in document.

8.4 RRC Connection Control

8.4.1 RRC Re-establishment delay

Void

8.4.1.1 Test 1

8.4.1.1.1 Definition and applicability

The UE Re-establishment delay requirement ($T_{UE-RE-ESTABLISH-REQ}$) is defined as the time between the moment when radio link failure is considered by the UE, to when the UE starts to send preambles on the PRACH.

 $\underline{T_{UE-RE-ESTABLISH-REQ}}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set.

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

The phase reference is the primary CPICH.

The requirements of this test apply to the FDD UE.

8.4.1.1.2 Minimum requirement

The Re-establishment delay T_{RE-ESTABLISH} to a known cell shall be less than 1.9 s.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

 $\underline{T_{RE-ESTABLISH}} = \underline{T_{RRC-RE-ESTABLISH}} + \underline{T_{UE-RE-ESTABLISH-REQ-KNOWN}}$

where

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

 $\underline{T_{UE-RE-ESTABLISH_REQ-KNOWN}} = 50 ms + \underline{T_{search} + T_{SI} + T_{RA}},$

<u>N₃₁₃= 20</u>

 $\underline{\mathbf{T}}_{313} = \underline{\mathbf{0s}}$

 $\underline{T}_{search} = 100 ms$

 $\underline{T_{RA}} =$ The additional delay caused by the random access procedure. 40 ms is assumed in this test case.

 T_{SI}
 is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 1820ms, allow 1.9s in the test case.

8.4.1.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.4.1.1.4 Method of test

8.4.1.1.4.1 Initial conditions

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

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

The test parameters are given in table 8.4.1.1 and table 8.4.1.2 below. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consist of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table 8.4.1.1 General test parameters for RRC re-establishment delay, Test 1

Parameter	Unit	Value	Comment
DCH Parameters		DL Reference	As specified in TS 25.101, section A.3.1
		measurement channel	
		<u>12.2 kbps</u>	
Power Control		<u>On</u>	
Active cell, Initial		<u>Cell 1</u>	
condition			
Active cell, Final		Cell 2	
condition			
<u>N313</u>		<u>20</u>	
<u>N315</u>		<u>1</u>	
<u>T313</u>	Seconds	<u>0</u>	
<u>Ts</u> ı	<u>ms</u>	<u>1280</u>	$\label{eq:steps} \begin{array}{c} \hline \mbox{Time required for receiving all the relevant system} \\ \hline \mbox{information data according to the reception procedure} \\ \hline \mbox{and the RRC procedure delay of system information} \\ \hline \mbox{blocks defined in 25.331 for a UTRAN cell (ms)} \\ \hline \mbox{Note: Since 1280 ms is one of the typical values for} \\ \hline \mbox{repeating system information blocks, T_{SI} of 1280 ms} \\ \hline \mbox{could be increased by the RRC procedure delay in} \\ \hline \mbox{order to allow the SIB repetition period of 1280 ms} \\ \hline \end{array}$
Monitored cell list size		<u>24</u>	Monitored set shall only include intra frequency neighbours.
Cell 2			Included in the monitored set
Reporting frequency	Seconds	4	
<u></u>	S	<u>10</u>	
<u>T2</u>	<u>S</u>	6	

Table 8.4.1.2 Cell specific parameters for RRC re-establishment delay test, Test 1

Parameter	<u>Unit</u>	Cell 1		Ce	<u>II 2</u>		
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>		
Cell Frequency	<u>ChNr</u>		<u>1</u>	,	1		
CPICH_Ec/lor	<u>dB</u>	` .	<u>10</u>	-1	0		
PCCPCH_Ec/lor	<u>dB</u>	Ъ.	12	-1	2		
SCH_Ec/lor	<u>dB</u>	` .	<u>12</u>	-12			
PICH_Ec/lor	<u>dB</u>	<u>-15</u>		<u>-15</u>			
DCH_Ec/lor	<u>dB</u>	<u>-17</u>	<u>-Infinity</u>	Not applicable			
OCNS_Ec/lor	<u>dB</u>	<u>-1.049</u>	<u>-0.941</u>	<u>-0.941</u>			
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>2,39</u>	<u>-Infinity</u>	<u>4,</u> ;	<u>39</u>		
I _{oc}	<u>dBm/ 3.84</u> <u>MHz</u>	-70					
CPICH_Ec/lo	<u>dB</u>	<u>-15</u> <u>-Infinity</u> <u>-13</u>			3		
Propagation Condition			AWGN				

8.4.1.1.4.2 Procedure

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

2) The UE is switched on.

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

[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified.

- 4) The SS waits for random access requests from the UE on cell 2.
- 5) After 10 s, the parameters are changed as described for T2.
- 6) If the UE responds on cell 2 within 1.9 s after the parameters are changed with a CELL_UPDATE command then the number of successful tests is increased by one.
- 7) After 6 seconds the RF parameters are set up according to T1.
- 8) Repeat step 3-7 [TBD] times.

8.4.1.1.5 Test requirements

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

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

8.4.1.2 Test 2

8.4.1.2.1 Definition and applicability

The UE Re-establishment delay requirement ($T_{UE-E-ESTABLISH-REQ}$) is defined as the time between the moment when radio link failure is considered by the UE, to when the UE starts to send preambles on the PRACH.

 $\underline{T}_{\underline{UE-RE-ESTABLISH-REQ}}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

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

The phase reference is the primary CPICH.

The requirements of this test apply to the FDD UE.

8.4.1.2.2 Minimum requirement

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

 $\underline{T_{RE-ESTABLISH}} = \underline{T_{RRC-RE-ESTABLISH}} + \underline{T_{UE-RE-ESTABLISH-REQ-UNKNOWN}}$

where

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

 $\underline{T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ\text{-}UNKNOWN}} = 50ms + \underline{T_{search}*NF} + \underline{T_{SI}} + \underline{T_{RA}}.$

<u>N₃₁₃= 20</u>

<u> $T_{313} = 0s$ </u>

 $\underline{T_{search}} = 800 \text{ms}$

 NF
 is the number of different frequencies in the monitored set. 3 frequencies are assumed in this test case.

 $\underline{T_{RA}}$ = The additional delay caused by the random access procedure. 40 ms is assumed in this test case.

T_{SI}is the time required for receiving all the relevant system information data according to the
reception procedure and the RRC procedure delay of system information blocks defined in 25.331
for a UTRAN cell (ms).1280 ms is assumed in this test case.

This gives a total of 4120ms, allow 4.2s in the test case.

8.4.1.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.4.1.2.4 Method of test

8.4.1.2.4.1 Initial conditions

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

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

The test parameters are given in table 8.4.1.3 and table 8.4.1.4 below. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table 8.4.1.3 General test parameters for RRC re-establishment delay, Test 2

Parameter	<u>Unit</u>	Value	<u>Comment</u>
DCH Parameters		DL Reference measurement channel 12.2 kbps	As specified in TS 25.101, section A.3.1
Power Control		<u>On</u>	
Active cell, initial condition		<u>Cell 1</u>	
Active cell, final condition		<u>Cell 2</u>	
<u>N313</u>		<u>20</u>	
<u>N315</u>		<u>1</u>	
<u>T313</u>	Seconds	<u>0</u>	
<u>Tsi</u>	<u>ms</u>	<u>1280</u>	Time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms) Note: Since 1280 ms is one of the typical values for repeating system information blocks, T _{SI} of 1280 ms could be increased by the RRC procedure delay in order to allow the SIB repetition period of 1280 ms
Monitored cell list size		<u>24</u>	Monitored set shall include 2 additional frequencies.
<u>Cell 2</u>			Cell 2 is not included in the monitored set. Cell 2 is located on one of the 2 additional frequencies of the monitored set.
Reporting frequency	<u>Seconds</u>	4	
<u>T1</u>	S	<u>10</u>	
<u>T2</u>	<u>S</u>	<u>6</u>	

Table 8.4.1.4 Cell specific parameters for RRC re-establishment delay test, Test 2

Parameter	Unit	Cell 1		Ce	l <u>l 2</u>
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
Cell Frequency	<u>ChNr</u>		<u>1</u>	2	
CPICH_Ec/lor	<u>dB</u>	<u></u>	<u>10</u>	-1	<u>0</u>
PCCPCH_Ec/lor	<u>dB</u>	<u> </u>	<u>12</u>	-1	2
SCH_Ec/lor	<u>dB</u>	<u></u>	<u>12</u>	-12	
PICH_Ec/lor	<u>dB</u>	<u>-15</u>		<u>-15</u>	
DCH_Ec/lor	<u>dB</u>	<u>-17</u>	-Infinity	Not applicable	
OCNS_Ec/lor	<u>dB</u>	<u>-1.049</u>	<u>-0.941</u>	<u>-0.941</u>	
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>-3,35</u>	<u>-Infinity</u>	<u>-Infinity</u>	<u>0,02</u>
Inc	<u>dBm/ 3.84</u>			<u>-70</u>	
	MHz				
CPICH_Ec/lo	<u>dB</u>	<u>-15</u>	-Infinity	-Infinity	<u>-13</u>
Propagation Condition			AV	VGN	

8.4.1.2.4.2 Procedure

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

2) The UE is switched on.

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

[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]

- 4) The SS waits for random access requests from the UE on cell 2.
- 5) After 10 s, the parameters are changed as described for T2.
- 6) If the UE responds on cell 2 within 1.9 s after the parameters are changed with a CELL_UPDATE command then the number of successful tests is increased by one.

7) After 6 seconds the RF parameters are set up according to T1

8) Repeat step 3-7 [TBD] times

8.4.1.2.5 Test requirements

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

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.

CHANGE REQUEST						
¥	<mark>34.121</mark>	CR 166	жrev	۳	Current vers	ion: <mark>3.8.0</mark> ^ж
For <u>HELP</u> on us	sing this for	rm, see bottom	of this page of	or look at th	e pop-up text	over the X symbols.
Proposed change a	ffects:	(U)SIM	ME/UE X	Radio Ad	ccess Network	Core Network
Title: ೫	Addition of	of details for RF	RM test case	3 <mark>.3.1 (FDD</mark> /	FDD Soft Har	ndover).
Source: ೫	Ericsson					
Work item code: #					Date: ೫	2002-05-21
Category: ₩	F Use <u>one</u> of F (con A (cor B (add C (fun D (edi Detailed exp be found in	the following cate rection) responds to a co lition of feature), ctional modification colanations of the 3GPP <u>TR 21.900</u>	egories: prrection in an e ion of feature) n) above categor <u>0</u> .	earlier releas ies can	Release: % Use <u>one</u> of 2 e) R96 R97 R98 R99 REL-4 REL-5	R99 the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5)
Reason for change: # Test case description of RRM test case 8.3.1 is missing in TS 34.121. Summary of change: # Addition of test case 8.3.1: - UTRAN Connected Mode Mobility; FDD/FDD Soft Handover						
not approved:					ilpiotoi	
Clauses affected:	₩ <mark>8.3.1</mark>					
Other specs affected:	ж О Те О	ther core speci est specificatior &M Specificatio	fications ns ons	#		
Other comments:	¥					

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- 1) Fill out the above form. The symbols above marked **#** contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> 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.

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8.3 UTRAN Connected Mode Mobility

8.3.1 FDD/FDD Soft Handover

Void

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 shall be less than 60 ms in CELL DCH state. The rate of correct soft handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The active set update delay $D_{handover}$ equals the RRC procedure delay defined in TS 25.331 clause [13.5.2] plus the interruption time stated in TS 25.133 clause 5.1.2.2 as follows:

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.

The normative reference for this requirement is TS 25.133 [2] clauses 5.1.2 and A.5.1.1.

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 8.3.2.1.1 and 8.3.2.1.2 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 five successive time periods, with a time duration of T1, T2, T3, T4 and T5 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

<u>UTRAN shall send an Active Set Update command 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. The RRC procedure delay is defined in TS 25.133 [2].</u>

Para	meter	Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control			<u>On</u>	
Target quality	<u>value on</u>	<u>BLER</u>	<u>0.01</u>	
Initial	Active cell		Cell 1	
conditions	<u>Neighbouring</u> <u>cell</u>		Cell 2	
Final condition	Active cell		<u>Cell 2</u>	
Reporting rang	<u>je</u>	<u>dB</u>	3	Applicable for event 1A and 1B
Hysteresis		dB	<u>0</u>	
W			<u>1</u>	Applicable for event 1A and 1B
Reporting deal	<u>ctivation</u>		<u>0</u>	Applicable for event 1A
Time to Trigge	<u>r</u>	<u>ms</u>	<u>0</u>	
Filter coefficier	<u>nt</u>		<u>0</u>	
<u>T1</u>		<u>d</u>	<u>5</u>	
<u>T2</u>		<u>d</u>	<u>3</u>	
<u>T3</u>		<u>d</u>	<u>0.5</u>	
<u>T4</u>		<u>ms</u>	<u>60</u>	This is the requirement on active set update delay, see section 5.1.2.2, where KC=1 and OC=0.
<u>T5</u>		<u>S</u>	2	

Table 8.3.1.1.1: General test parameters for Soft handover

Table 8.3.1.1.2: Cell specific test parameters for Soft handover

Parameter	Unit			Cell 1				Cell 2		
		<u>T1</u>	<u>T2</u>	<u>T3</u> <u>T4</u>	<u>T5</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	<u>T5</u>
CPICH_Ec/lor	dB			<u>-10</u>				<u>-10</u>		
PCCPCH_Ec/lor	<u>dB</u>			<u>-12</u>				<u>-12</u>		
SCH_Ec/lor	<u>dB</u>			<u>-12</u>				<u>-12</u>		
PICH_Ec/lor	<u>dB</u>			<u>-15</u>				<u>-15</u>		
DPCH_Ec/lor	<u>dB</u>	Note1	Note1	Note1	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	Note3	<u>Not</u>	<u>e1</u>
<u>OCNS</u>		Note2	Note2	Note2	<u>-0.941</u>	<u>-0.941</u>	<u>-0.941</u>	Note2	<u>Not</u>	<u>e2</u>
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>0</u>	<u>2.91</u>	<u>2.91</u>	<u>2.91</u>	<u>-Inf</u>	<u>2.91</u>	<u>2.91</u>	<u>2.9</u>	<u>)1</u>
Iac	<u>dBm/</u>					<u>-70</u>				
<u> </u>	<u>3.84</u>									
	MHz				-					
CPICH_Ec/lo	<u>dB</u>	<u>-13</u>	<u>-14</u>	<u>-14</u>	<u>-14</u>	<u>-Inf</u>	<u>-14</u>	<u>-14</u>	<u>-1</u> -	4
Propagation					<u> </u>	WGN				
Condition										
Note 1: The DPCH I	H level is controlled by the power control loop									
Note 2: The power of	e 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 I	<u>evel is co</u>	ntrolled by	the powe	r control loop.	The initial p	ower shall	be set equa	I to the DP	<u>ČH_Ec/lo</u>	or of
Cell 1 at the	end of T	<u>2.</u>								_

8.3.1.4.2 Procedure

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

2) The UE is switched on.

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

- [Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds, 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 T5. If the UE downlink BLER does not exceed the downlink BLER target, i.e. 1%, during time period T5 then the number of successful tests is increased by one.

11) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

12)Repeat step 1-11[TBD] times

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

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MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	<u>0</u>
-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	AMRLC
-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)	Not Dropont
Intra frequency measurement quantity (10.3.7.33)	NOLFIESEIL
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	
-Measurement quantity	
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SEN-SEN observed time difference reporting indicator	No report
-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	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
<u>-CHOICE mode</u>	<u>FDD</u>
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	
-Pathioss reporting indicator	IRUE Not Descent
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
CHOICE reported coll	Papart all active act calls + calls within
	monitored set on used frequency
-Maximum number of reported cells	
-Measurement validity (10.3.7.51)	E Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	2
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Active set cells and monitored set cells
-Reporting Range Constant	<u>3 dB</u>
-Cells forbidden to affect Reporting Range	Not Present
<u>-CHOICE mode</u>	<u>FDD</u>
-Primary CPICH info (10.3.6.60)	
<u>W</u>	<u>1.0</u>
<u>-Hysteresis</u>	
- Inresnoid used frequency	Not Present
<u>-Reporting deactivation threshold</u>	U Not Present
-Time to trigger	0 mg
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triagering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE mode	FDD

Information Element/Group name	Value/Remark
-Primary CPICH info (10.3.6.60)	
<u>-W</u>	<u>1.0</u>
-Hysteresis	<u>0 dB</u>
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	<u>0 ms</u>
-Amount of reporting	Not Present
-Reporting interval	Not Present
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: The SFN-CFN observed time difference is calculated	from the OFF and Tm parameters contained
in the IE "Cell synchronisation information ", TS 25.33	1, clause 10.3.7.6. According to TS 25.331,
8.6.7.7, this IE is included in MEASUREMENT REPO	RT 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 reportir	ומ

ACTIVE SET UPDATE message (step 8):

Information Element/Group	Type and	Value/Remark
name	reference	
Message Type	<u>Message</u>	
	<u>Type</u>	
UE information elements		
RRC transaction identifier	RRC	<u>0</u>
	transaction	
	identifier	
	<u>10.3.3.36</u>	
Integrity check info	Integrity	Not Present
	Check Info	
late with exact a time we also info	<u>10.3.3.16</u>	Net Dresset
Integrity protection mode into	Integrity	Not Present
	protection	
	10.2.2.10	
Ciphoring mode info	<u>10.3.3.19</u> Ciphoring	Not Present
<u>Ciphening mode inio</u>	<u>Cipriering</u> mode info	Not Present
	10.3.3.5	
Activation time	Activation	"pow"
Activation time	time 10.3.3.1	<u></u>
New U-RNTI	U-RNTI	Not Present
<u></u>	10.3.3.47	<u></u>
CN information elements		
CN Information info	CN	Not Present
	Information	
	info 10.3.1.3	
RB information elements		
Downlink counter		Not Present
synchronisation info		
<u>>RB with PDCP information list</u>		Not Present
>RB with PDCP information	RB with	Not Present
	PDCP	
	information	
	<u>10.3.4.22</u>	
Phy CH Information elements		
	Maximum	
waximum allowed UL TX power		<u>33 (IBII)</u>
	TX power	
	10 3 6 30	
Downlink radio resources	10.5.0.58	
Radio link addition information		Radio link addition information
radio init additori informatori		required for each PL to add

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Information Element/Group	Type and	Value/Remark
name	reference	
>Radio link addition information	Radio link	
	addition	
	information	
	<u>10.3.6.68</u>	
Radio link removal information		Radio link removal information
		required for each RL to
		remove
>Radio link removal information	Radio link	Not Present
	<u>removal</u>	
	information	
	<u>10.3.6.69</u>	
TX Diversity Mode	TX Diversity	None
	Mode	
	<u>10.3.6.86</u>	
SSDT information	<u>SSDT</u>	Not Present
	information	
	10.3.6.77	

Radio link addition information

Information Element/Group	Need	Multi	Type and	Semantics description
name			reference	
Primary CPICH info	MP		Primary	
			CPICH info	
			10.3.6.60	
Downlink DPCH info for each RL	MP		Downlink	
			DPCH info	
			for each RL	
			10.3.6.21	
TFCI combining indicator	MP		<u>TFCI</u>	
_			combining	
			indicator	
			10.3.6.81	
SCCPCH Information for FACH	OP		SCCPCH	Note 1
			Information	
			for FACH	
			10.3.6.70	

NOTE 1: These IEs are present when the UE needs to listen to system information on FACH in CELL_DCH state.

8.3.1.5 Test requirements

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

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.

	CHANGE REQUEST									
*	<mark>34.121</mark>	CR <mark>167</mark>	жrev	- *	Current versi	on: 3.8.0 [#]				
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the # symbols.										
Proposed change af	Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network									
Title: ೫	Addition o	f details for RR	M test case 8.	3.5.1 (Cel	Re-selection	in CELL_FACH, 1 cell)				
Source: ೫	Ericsson									
Work item code: #					Date: ೫	2002-05-21				
Category: #	F Jse <u>one</u> of t F (corr A (corr B (ada C (fund D (edit Detailed exp be found in 3	the following cate rection) responds to a col lition of feature), ctional modificatio orial modification olanations of the 3GPP <u>TR 21.900</u>	egories: rrection in an ea on of feature) n) above categorie	rlier release s can	Release: % Use <u>one</u> of t 2 (e) R96 R97 R98 R99 REL-4 REL-5	R99 he following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5)				
Reason for change:	ж <mark>Теst</mark>	case descriptio	n of RRM test	case 8.3.	5.1 is missing	in TS 34.121.				
Summary of change	: ೫ Addit - Cel	ion of test case Re-selection in	8.3.5.1: n CELL_FACH	; One frec	uency presen	t in neighbour list				
Consequences if not approved:	# Test	case descriptio	n of 8.3.5.1 rei	mains inco	omplete.					
Clauses affected:	೫ <mark>8.3.5.′</mark>	1								
Other specs affected:	₩ Ot Te O	her core specifest specification M Specification	ications ೫ Is ns							
Other comments:	ж									

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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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

8.3.5.1 One frequency present in neighbour list

8.3.5.1.1 Definition and applicability

The cell re-selection delay is defined as the time between the occurrence of an event which will trigger Cell Reselection process and the moment in time when the UE starts sending the the preambles on the PRACH for sending RRC CELL UPDATE message to the UTRAN.

8.3.5.1.2 Minimum requirements

The cell re-selection delay shall be less than 1.6 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

If a cell has been detectable at least $T_{identify,intra}$, the cell reselection delay in CELL_FACH state to a cell in the same frequency shall be less than

 $T_{\text{reselection, intra}} = T_{\text{Measurement}_\text{Period Intra}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}} \underline{\text{ms}}$

where

 $\underline{T}_{\underline{Measurement} \underline{Period Intra}} = 200 \text{ ms.}$

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

 T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. 1280 ms is assumed in this test case.

 T_{RA} = The additional delay caused by the random access procedure. T_{RA} is a delay is caused by the physical random access procedure described in TS 25.214 section 6.1. A persistence value is assumed to be 1 in this test case and therefore T_{RA} in this test case is 40 ms.

These requirements assume radio conditions to be sufficient, so reading of system information can be done without errors.

The normative reference for this requirement is TS 25.133 [2] clauses 5.5.2.1.1 and A.5.5.1.

8.3.5.1.3 Test purpose

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL FACH state in the single carrier case

8.3.5.1.4 Method of test

8.3.5.1.4.1 Initial conditions

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

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

The test parameters are given in Table 8.3.5.1.1 to 8.3.5.1.4. The UE is requested to monitor neighbouring cells on 1 carrier. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms.

Table 8.3.5.1.1 General test parameters for Cell Re-selection in CELL_FACH

Parameter		<u>Unit</u>	Value	Comment
initial	Active cell		Cell2	
condition	Neighbour cells		Cell1, Cell3,Cell4, Cell5,	
			<u>Cell6</u>	
final	Active cell		Cell1	
condition				
Access Ser	<u>rvice Class (ASC#0)</u>			Selected so that no additional delay is
– Persistence value			<u>1</u>	caused by the random access
				procedure. The value shall be used for
				all cells in the test.
<u>T1</u>		<u>s</u>	<u>15</u>	
<u>T2</u>		<u>s</u>	<u>15</u>	

The transport and physical parameters of the S-CCPCH carrying the FACH are defined in Table 8.3.5.1.2 and Table 8.3.5.1.3.

Table 8.3.5.1.2: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	kbps	<u>60</u>
Channel symbol rate	<u>ksps</u>	<u>30</u>
Slot Format #I	2	4
TFCI	2	OFF
Power offsets of TFCI and Pilot	dB	<u>0</u>
fields relative to data field		

Table 8.3.5.1.3: Transport channel parameters for S-CCPCH

Parameter	FACH
Transport Channel Number	<u>1</u>
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	<u>10 ms</u>
Type of Error Protection	Convolution Coding
Coding Rate	<u>1/2</u>
Rate Matching attribute	<u>256</u>
Size of CRC	<u>16</u>
Position of TrCH in radio frame	Fixed

	Parameter	Unit	Се	<u>ll 1</u>	Cell 2 Cell 3		13	Cell 4		Cell 5		Cell 6			
			<u>T1</u>	T2	<u>T1</u>	T2	<u>T1</u>	T2	<u>T1</u>	T2	<u>T1</u>	T2	<u>T1</u>	T2	
U	RA RF Channel		Char	nol 1	Chan	nol 1	Chan	Channel 1		nnol 1	Cha	Channel 4		Channel 4	
Nu	<u>imber</u>		Char		Chan								Channel 1		
C	PICH_Ec/lor	<u>dB</u>	-	<u>10</u>	-1	0	-1	0		<u>-10</u>		<u>-10</u>		<u>10</u>	
PC	CPCH_Ec/lor	<u>dB</u>	-	<u>12</u>	<u>-1</u>	2	-1	2		<u>-12</u>	_	-12		2	
<u>S(</u>	CH_Ec/lor	<u>dB</u>	-	<u>12</u>	<u>-1</u>	2	-1	2		<u>-12</u>		-12		12	
PI	CH_Ec/lor	<u>dB</u>	-	<u>15</u>	<u>-1</u>	<u>5</u>	<u>-1</u>	<u>5</u>		<u>-15</u>	<u> </u>	<u>-15</u>		15	
S-	CCPCH_Ec/lor	<u>dB</u>	-1	12	-1	2	-1	2	-	12	-	· <u>12</u>	-1	2	
0	CNS_Ec/lor	<u>dB</u>	<u>-1.</u>	<u>295</u>	<u>-1.2</u>	<u>95</u>	<u>-1.2</u>	<u>95</u>	-1	.295	-1	<u>.295</u>	-1.2	<u>295</u>	
Î,	r/I_{oc}	<u>dB</u>	<u>7.3</u>	<u>10.27</u>	<u>10.27</u>	<u>7.3</u>	<u>0.2</u>	<u>27</u>	<u>0</u>	.27	<u>0</u>	.27	<u>0.</u>	<u>27</u>	
I_{c}	c	<u>dBm/3.84</u> <u>MHz</u>						<u>-7</u>	<u>0</u>						
C	PICH_Ec/Io	dB	-16	-13	-13	-16	-2	<u>'3</u>		- <u>23</u>		- <u>23</u>	-2	<u>23</u>	
Pr	opagation andition														
	Il selection and										1				
re	selection quality		CPICH		CPICH		<u>CPI</u>	<u>СН</u>	CPIC	H E _c /N _o	CPIC	H E _c /N ₀	CP	<u>CH</u>	
m	easure			<u>· <u> </u></u>			<u>E_c/</u>	E_{c}/N_{0}						<u>N</u> 0	
Q	ualmin	dB	-2	20	-2	0	-20 -20		-	·20	-2	0			
Q	xlevmin	dBm	-1	15	-11	15	-11	<u>-115</u> <u>-115</u>		-1	115	-1	<u>15</u>		
UE M	_ <u>TXPWR_</u> AX_ <u>RACH</u>	<u>dBm</u>	2	<u>!1</u>	<u>21</u>		21			<u>21</u>		<u>21</u>	2	1	
			<u>C1, 0</u>	<u>C2: 0</u>	<u>C2, C</u>	<u>) 1: 0</u>	<u>C3, C</u>	<u>)1:0</u>	<u>C4,</u>	<u>C1: 0</u>	<u>C5,</u>	<u>C1: 0</u>	<u>C6, (</u>	<u>21:0</u>	
	H = =1 0		$\frac{C1}{C1}$	$\frac{03:0}{04:0}$	$\frac{C2, C}{C2, C}$	<u>23:0</u>	$\frac{C3, C}{C2}$	2:0	$\frac{C4}{C4}$	<u>C2:0</u>	<u>C5,</u>	<u>C2: 0</u>	<u>C6, 0</u>	<u>22:0</u>	
<u>Q</u>	<u>DIISET Z_{s, n}</u>	<u>ab</u>	$\frac{C1}{C1}$	<u>C4: 0</u>	$\frac{02,0}{22}$	<u>24: 0</u> 25: 0	$\frac{03,0}{2}$	<u>74: 0</u>	$\frac{C4}{C4}$	<u>C3:0</u>	<u>C5</u> ,	$\frac{03:0}{04:0}$	$\frac{C6, C}{C6}$	<u>23:0</u> 24:0	
			$\frac{CI}{C1}$	<u>C6: 0</u>	$\frac{02, 0}{02}$	<u>20.0</u> 26.0	$\frac{03,0}{3}$	<u>20.0</u>	$\frac{C4}{C4}$	<u>C6:0</u>	<u>C5</u>	<u>C6:0</u>	<u>C6, 0</u>	2 <u>4.0</u> 25:0	
O	nyst	dB	<u>01,</u>	0 <u>0.0</u> 0	02, 0)	<u>00, 0</u>	<u>, , , , , , , , , , , , , , , , , , , </u>	<u> </u>	0	<u> </u>	0	<u> </u>)	
PF	NALTY TIME	s		<u>o</u> 0	0)	0	<u> </u>		0		0	(<u>,</u>	
TE	MPORARY OFF									<u> </u>		<u> </u>			
S	T	<u>ar</u>		<u>u</u>	<u>C</u>	<u>0</u>		_		<u>0</u>		<u>U</u>	<u>(</u>	2	
Tr	eselection	<u>s</u>		<u>0</u>	0		0		<u>0</u>			<u>0</u>	()	
Si	htrasearch	<u>dB</u>	not	<u>sent</u>	not s	sent	not s	sent	not	sent	not	t sent	not	<u>sent</u>	
	<u>"FACH</u>														
M	easurement		not	<u>sent</u>	not s	sent	not s	sent	not	sent	not	<u>sent</u>	not	<u>sent</u>	
00	casion into	1							1						

Table 8.3.5.1.4 Cell specific test parameters for Cell Re-selection in CELL_FACH

8.3.5.1.4.2 Procedure

- 1) The SS activates cell 1-6 with RF parameters set up according to T1.
- 2) <u>The UE is switched on.</u>
- 3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL FACH.
- 4) After 15 seconds, the SS shall switch the power settings from T1 to T2.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 1 within 1.6 s then the number of successful tests is increased by one.
- 6) After another 15 s, the parameters are changed as described for T1.
- 7) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 1.6 s then the number of successful tests is increased by one.
- 8) Repeat step 4) to 7) [TBD] times.

8.3.5.1.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of [FFS]% of the cases.

Note:If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance appliedfor 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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	CR-Form-v5									
	CHANGE REQUEST									
ж	34.121 CR 168 # rev - # Current version: 3.8.0 #									
For HELP on using this form, see bottom of this page or look at the pop-up text over the # symbols.										
Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network										
Title: ೫	Addition of details for RRM test case 8.3.5.2 (Cell Re-selection in CELL_FACH, 2 cells)									
Source: #	8 Ericsson									
Work item code: भ	Date:									
Category: ೫	F Release: % R99 Use one of the following categories: Juse one of the following releases: 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can be found in 3GPP TR 21.900. REL-4 (Release 4)									
Reason for chang	e: # Test case description of RRM test case 8.3.5.2 is missing in TS 34.121.									
Summary of chan	ge: # Addition of test case 8.3.5.2: Cell Re-selection in CELL_FACH; Two frequencies present in the neighbour list 									
Consequences if not approved:	# Test case description of 8.3.5.2 remains incomplete.									
Clauses affected:	¥ 8.3.5.2									
Other specs affected:	% Other core specifications %									

Other comments: ೫

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

O&M Specifications

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

8.3.5.2 Two frequencies present in the neighbour list

8.3.5.2.1 Definition and applicability

The cell re-selection delay is defined as the time between the occurrence of an event which will trigger Cell Reselection process and the moment in time when the UE starts sending the the preambles on the PRACH for sending RRC CELL UPDATE message to the UTRAN.

8.3.5.2.2 Minimum requirements

The cell re-selection delay shall be less than 1.9 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

If a cell has been detectable at least T_{identify,inter}, the cell reselection delay in CELL_FACH state to a FDD cell on a different frequency shall be less than

 $T_{\text{reselection, inter}} = T_{\text{Measurement inter}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}} \underline{\text{ms}}$

where

T_{Measurement_inter} is 480 ms in this case

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

 $\underline{T_{SL}}$ = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. 1280 ms is assumed in this test case.

 T_{RA} = The additional delay caused by the random access procedure. T_{RA} is a delay is caused by the physical random access procedure described in TS 25.214 section 6.1. A persistence value is assumed to be 1 in this test case and therefore T_{RA} in this test case is 40 ms.

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These requirements assume radio conditions to be sufficient, so that reading of system information can be done without errors.

The normative reference for this requirement is TS 25.133 [2] clauses 5.5.2.1.2 and A.5.5.2.

8.3.5.2.3 Test purpose

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL FACH state in the single carrier case

8.3.5.2.4 Method of test

8.3.5.2.4.1 Initial conditions

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

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

The test parameters are given in Table 8.3.5.2.1 to 8.3.5.2.4. The UE is requested to monitor neighbouring cells on 1 carrier. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms

Table 8.3.5.2.1: General test parameters for Cell Re-selection in CELL_FACH

	Parameter	Unit	Value	Comment
<u>initial</u>	Active cell		Cell2	
condition	Neighbour cells		Cell1, Cell3,Cell4, Cell5,	
			Cell6	
final	Active cell		Cell1	
condition				
Access Ser	<u>rvice Class (ASC#0)</u>			Selected so that no additional delay is
 – Persistence value 		1	<u>1</u>	caused by the random access
				procedure. The value shall be used for
				all cells in the test.
<u>T1</u>		<u>s</u>	<u>15</u>	
<u>T2</u>		<u>S</u>	<u>15</u>	

The transport and physical parameters of the S-CCPCH carrying the FACH are defined in Table 8.3.5.2.2 and Table 8.3.5.2.3.

Table 8.3.5.2.2: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	<u>kbps</u>	<u>60</u>
Channel symbol rate	<u>ksps</u>	<u>30</u>
Slot Format #I	1	4
TFCI	1	OFF
Power offsets of TFCI and Pilot	<u>dB</u>	<u>0</u>
fields relative to data field		

Table 8.3.5.2.3: Transport channel parameters for S-CCPCH

Parameter	FACH		
Transport Channel Number	<u>1</u>		
Transport Block Size	240		
Transport Block Set Size	<u>240</u>		
Transmission Time Interval	<u>10 ms</u>		
Type of Error Protection	Convolution Coding		
Coding Rate	<u>1/2</u>		
Rate Matching attribute	<u>256</u>		
Size of CRC	<u>16</u>		
Position of TrCH in radio frame	Fixed		

Parameter	Unit	Cell 1	Cell 2	Cell 3	Cell 4	Cell 5	Cell 6	
		<u>T1 T2</u>	<u>T1 T2</u>	<u>T1 T2</u>	<u>T1 T2</u>	<u>T1 T2</u>	<u>T1</u> <u>T2</u>	
<u>UTRA RF Channel</u> Number		Channel 1	Channel 2	Channel 1	Channel 1	Channel 2	Channel 2	
CPICH_Ec/lor	<u>dB</u>	<u>-10</u>	<u>-10</u>	<u>-10</u>	<u>-10</u>	<u>-10</u>	<u>-10</u>	
PCCPCH_Ec/lor	dB	-12	-12	-12	<u>-12</u>	-12	<u>-12</u>	
SCH_Ec/lor	<u>dB</u>	<u>-12</u>	<u>-12</u>	<u>-12</u>	<u>-12</u>	<u>-12</u>	<u>-12</u>	
PICH_Ec/lor	<u>dB</u>	<u>-15</u>	<u>-15</u>	<u>-15</u>	<u>-15</u>	<u>-15</u>	<u>-15</u>	
S-CCPCH_Ec/lor	<u>dB</u>	<u>-12</u>	<u>-12</u>	<u>-12</u>	<u>-12</u>	<u>-12</u>	<u>-12</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-1.295</u>	<u>-1.295</u>	<u>-1.295</u>	<u>-1.295</u>	<u>-1.295</u>	<u>-1.295</u>	
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>-3.4</u> <u>2.2</u>	<u>2.2</u> <u>-3.4</u>	<u>-7.4</u> <u>-4.8</u>	<u>-7.4</u> <u>-4.8</u>	<u>-4.8</u> <u>-7.4</u>	<u>-4.8</u> <u>-7.4</u>	
I _{oc}	<u>dBm/3.8</u> <u>4 MHz</u>	<u>-70</u>						
CPICH_Ec/lo	<u>dB</u>	<u>-16</u> <u>-13</u>	<u>-13</u> <u>-16</u>	<u>-20</u>	<u>-20</u>	<u>-20</u>	<u>-20</u>	
Propagation Condition		<u>AWGN</u>						
Cell selection and reselection quality measure		<u>CPICH</u> <u>E₀/N₀</u>	<u>CPICH</u> <u>E_c/N₀</u>	<u>CPICH</u> <u>E_c/N₀</u>	<u>CPICH E_c/N₀</u>	<u>CPICH E_⊄/N₀</u>	<u>CPICH E_c/N₀</u>	
Qqualmin	dB	-20	-20	-20	-20	-20	-20	
Qrxlevmin	dBm	-115	-115	-115	-115	-115	-115	
UE_TXPWR_ MAX_RACH	dBm	21	<u>21</u>	21	<u>21</u>	<u>21</u>	<u>21</u>	
Qoffset2 _{s, n}	<u>dB</u>	<u>C1, C2: 0</u> <u>C1, C3: 0</u> <u>C1, C4: 0</u> <u>C1, C5: 0</u> C1, C6: 0	$ \begin{array}{r} \underline{C2, C1: 0} \\ \underline{C2, C3: 0} \\ \underline{C2, C4: 0} \\ \underline{C2, C5: 0} \\ \underline{C2, C6: 0} \end{array} $	<u>C3, C1: 0</u> <u>C3, C2: 0</u> <u>C3, C4: 0</u> <u>C3, C5: 0</u> <u>C3, C6: 0</u>	$ \begin{array}{r} \underline{C4, C1: 0} \\ \underline{C4, C2: 0} \\ \underline{C4, C3: 0} \\ \underline{C4, C5: 0} \\ \underline{C4, C6: 0} \end{array} $	<u>C5, C1: 0</u> <u>C5, C2: 0</u> <u>C5, C3: 0</u> <u>C5, C4: 0</u> <u>C5, C6: 0</u>	<u>C6, C1: 0</u> <u>C6, C2: 0</u> <u>C6, C3: 0</u> <u>C6, C4: 0</u> <u>C6, C5: 0</u>	
Qhyst2	<u>dB</u>	0	<u>0</u>	0	0	0	0	
PENALTY_TIME	S	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	
TEMP_OFFSET	<u>dB</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	
Treselection	<u>S</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	
Sintrasearch	<u>dB</u>	not sent	not sent	not sent	not sent	not sent	not sent	
Sintersearch	<u>dB</u>	not sent	not sent	not sent	not sent	not sent	not sent	
IE "FACH Measurement occasion info"		<u>sent</u>	<u>sent</u>	<u>sent</u>	<u>sent</u>	<u>Sent</u>	<u>sent</u>	
FACH Measurement occasion cycle length coefficient		<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	
Inter-frequency FDD measurement indicator		TRUE	<u>TRUE</u>	TRUE	TRUE	TRUE	TRUE	
Inter-frequency TDD measurement indicator		FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	

Table 8.3.5.2.4: Cell specific test parameters for Cell re-selection in CELL_FACH state

8.3.5.2.4.2 Procedure

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

- 2) The UE is switched on.
- 3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL FACH.
- 4) After 15 seconds, the SS shall switch the power settings from T1 to T2.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 1 within 1.6 s then the number of successful tests is increased by one.

- 6) After another 15 s, the parameters are changed as described for T1.
- 7) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 1.6 s then the number of successful tests is increased by one.
- 8) Repeat step 4) to 7) [TBD] times.
- 8.3.5.2.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of [FFS]% of the cases.

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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For HFLP on using this form, see bottom of this page or look at the pop-up text over the 9 symbols									
Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network									
Title:	¥ <mark>⊺e</mark> s	st Requ	uirements for R	RM UE Rx	-Tx Tim	e Differ	<mark>ence Measu</mark>	irement	
Source:	₩ <mark>T1</mark> I	RF							
Work item code:	£						Data: ₩	2002-05-22	
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Category:	₩ F Use Deta be fc	one of t F (corr A (corr B (ada C (fund D (edit iled exp ound in 3	the following cate rection) responds to a co lition of feature), ctional modification torial modification blanations of the 3GPP <u>TR 21.900</u>	egories: rrection in a on of feature 1) above categ <u>)</u> .	n earlier e) gories ca	<i>release)</i> ח	Release: # Use <u>one</u> of 2 R96 R97 R98 R99 REL-4 REL-5	R99 the following relea (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5)	ases:
Reason for chang	де: Ж	Test	Requirements	are missin	g.				
Summary of char	nge:	Test I	Requirements a	<mark>are include</mark>	d.				
Consequences if not approved:	æ	Test Requ	could fail "good irements	d UEs" bec	ause Te	st Requ	uirements di	ffer from the Mir	nimum
Clauses affected	· ¥	876							
Other specs affected:	. ~	0.7.0 Ot Te	her core specifiest specification M Specification	ications is ins	ж				

Other comments: # Isolated Impact Analysis: Does not affect implementation of the UE.

How to create CRs using this form:

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

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

8.7.6 UE Rx-Tx time difference

8.7.6.1 UE Rx-Tx time difference type 1

8.7.6.1.1 Definition and applicability

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

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

8.7.6.1.2 Minimum requirements

Table 8.7.6.1.1

Baramotor	Unit		Conditions	
Farameter	Unit	Accuracy [cnip]	lo [dBm/3.84Mz]	
UE RX-TX time difference	chip	± 1.5	-9450	

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
- 2) 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 8.7.6.1.2 for Test 1.

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

Devementer	l lucit	Test 1	Test 2	Test 3
Parameter	Unit	Cell 1	Cell 1	Cell 1
UTRA RF Channel number		Channel 1	Channel 1	Channel 1
CPICH_Ec/lor	dB	-10	-10	-10
PCCPCH_Ec/lor	dB	-12	-12	-12
SCH_Ec/lor	dB	-12	-12	-12
PICH_Ec/lor	dB	-15	-15	-15
DPCH_Ec/lor	dB	-15	-15	-15
OCNS	dB	-1.11	-1.11	-1.11
Îor/loc	dB	10.5	10.5	10.5
100		lo - 10.9 dB = loc,	lo - 10.9 dB = loc,	lo - 10.9 dB = loc,
		Note 1	Note 1	Note 1
lo	dBm/3.84 MHz	-94	-72	-50
Propagation condition	-	AWGN	AWGN	AWGN
NOTE 1: loc level shall be adjusted according the total signal power spectral density lo at receiver input and the				
geometry factor <i>Îor/loc</i> .				

3GPP TS aa.bbb vX.Y.Z (YYYY-MM)

- 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.
- 1)2) SS shall transmit MEASUREMENT CONTROL message.
- 2)3) UE shall transmit periodically MEASUREMENT REPORT message.
- 3)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.
- 4)5) The RF parameters are set up according table 8.7.6.1.42 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.
- 5)6) Step 3) above shall be repeated.
- 6)7) The RF parameters are set up according table 8.7.6.1.42 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.
- 7)8) Step 3) above shall be repeated.
- 8)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] and Annex A of 34.123-1 [21] 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	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Setup
-CHOICE Measurement type	UE Internal measurement
-UE Internal measurement quantity	
-CHOICE mode	FDD
-Measurement quantity	UE Rx-Tx time difference
-Filter coefficient	0
-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
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
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.

Table 8.7.6.1.3

Baramatar	Unit	Acquiracy [chin]	Conditions
Farameter	<u>onn</u>	Accuracy (chip)	lo [dBm]
UE RX-TX time difference	<u>chip</u>	[± 2.0]	<u>-9450</u>

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

Parameter	<u>Unit</u>	Test 1	Test 2	Test 3
		Cell 1	Cell 1	Cell 1
UTRA RF Channel number		Channel 1	Channel 1	Channel 1
CPICH_Ec/lor	<u>dB</u>	<u>-10</u>	<u>-10</u>	<u>-10</u>
PCCPCH_Ec/lor	dB	<u>-12</u>	<u>-12</u>	-12
SCH_Ec/lor	<u>dB</u>	<u>-12</u>	<u>-12</u>	<u>-12</u>
PICH_Ec/lor	<u>dB</u>	<u>-15</u>	<u>-15</u>	<u>-15</u>
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	<u>-15</u>	<u>-15</u>
OCNS	<u>dB</u>	<u>-1.11</u>	<u>-1.11</u>	<u>-1.11</u>
<u>Îor/loc</u>	dB	<u>10.5</u>	<u>10.5</u>	<u>10.5</u>
loc	<u>dBm/ 3.84 MHz</u>	<u>-103.6</u>	-82.9	-62.2
<u>lo</u>	<u>dBm/3.84 MHz</u>	<u>-92.7</u>	<u>-72</u>	<u>-51.3</u>
Propagation condition	-	AWGN	AWGN	AWGN
NOTE 1: loc level shall be adjusted according the total signal power spectral density lo at receiver input and the				
geometry factor lor/loc.				

The UE Rx-Tx time difference accuracy shall meet the requirements in tableclause 8.7.6.1.32.

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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¥	34.121 CR 170 # rev - # Current version: 3.8.0. #			
For <u>HELP</u> on	using this form, see bottom of this page or look at the pop-up text over the $#$ symbols.			
Proposed change	e affects: ೫ (U)SIM ME/UE X Radio Access Network Core Network			
Title:	Derivation of Test Requirements for UE Rx-Tx time difference type 1 (Annex F)			
Source:	光 T1RF			
Work item code:	Date:			
Category:	#FRelease: #R99Use one of the following categories: F (correction)Use one of the following releases: 2(GSM Phase 2)A (corresponds to a correction in an earlier release)P96(Release 1996)B (addition of feature), C (functional modification of feature)R97(Release 1997)C (functional modification)R98(Release 1998)D (editorial modification)R99(Release 1999)Detailed explanations of the above categories can be found in 3GPP TR 21.900.REL-5(Release 5)			
Reason for chan	ge: # Derivation of Test Requirements are missing.			
Summary of cha	age: # Derivation of Test Requirements are included.			
Consequences if not approved:	# Test could fail "good UEs" because Test Requirements differ from the Minimum Requirements			
Clauses affected	# Annex F			
Other specs affected:	% Other core specifications % Test specifications 0&M Specifications			
Other comments	# Isolated Impact Analysis: Does not affect implementation of the UE.			

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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.

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
8.2 Idle Mode Tasks		
8.2.2 Cell Re-Selection		
8.2.2.1 Scenario 1: Single carrier case	$ \begin{array}{ccc} \hat{I}_{or}/I_{oc} & \pm 0.3 \text{ dB} \\ I_{oc} & \pm 1.0 \text{ dB} \\ \hline \frac{CPICH_E_c}{I_{or}} & \pm 0.1 \text{ dB} \end{array} $	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
		The absolute error of the AWGN is specified as 1.0 dB.
8.2.2.2 Scenario 2: Multi carrier case	$I_{or}/I_{oc} \pm 0.3 \text{ dB}$ $I_{oc} \pm 1.0 \text{ dB}$ $I_{oc1}/I_{oc2} \pm 0.3 \text{ dB}$ $\frac{CPICH _ E_c}{I_{or}} \pm 0.1 \text{ dB}$	0.1 dB uncertainty in \hat{I}_{or}/I_{oc} 0.3 dB uncertainty in \hat{I}_{or}/I_{oc} based on power meter measurement after the combiner 0.3 dB uncertainty in loc1/loc2 based on power meter measurement after the combiner Overall error for the CPICH_Ec/lo is the sum of the \hat{I}_{or}/I_{oc} ratio error and the CPICH_Ec/lor ratio. The absolute error of the AWGN is specified as 1.0 dB.
8.2.3 UTRAN to GSM Cell Re-Selection		

Clause	Maximum Test System Uncertainty	Derivation of Test System
	<u> </u>	
8.2.3.1 Scenario 1: Both UTRA and GSM	I_{or}/I_{oc} ±0.3 dB	CPICH Ec ratio
	$I_{oc}/RXLEV$ ±0.3 dB	
	<i>I_{oc}</i> ±1.0 dB	
	RXLEV ±1.0 dB	$\hat{\mathbf{t}}$
		0.3 dB uncertainty in I_{or}/I_{oc}
	$\frac{CPICH_E_c}{I_{or}} = \pm 0.1 \text{ dB}$	based on power meter measurement after the combiner
		0.3 dB uncertainty in loc/RXLEV based on power meter measurement after the combiner
		The absolute error of the AWGN is specified as 1.0 dB.
		The absolute error of the RXLEV is specified as 1.0 dB.
8.2.3.2 Scenario 2: Only UTRA level	\hat{I}_{or}/I_{oc} ±0.3 dB	Same as 8.2.3.1
changed	$I_{oc}/RXLEV$ ±0.3 dB	
	I_{aa} ±1.0 dB	
	RXLEV ±1.0 dB	
	$\frac{CPICH _E_c}{E_c}$ = +0.1 dB	
	I_{or}	
8.2.4 FDD/TDD cell re-selection	\hat{I}_{or}/I_{oc} ±0.3 dB	Same as 8.2.2.2
	<i>I_{oc}</i> ±1.0 dB	
	I_{\perp}/I_{\perp} +0.3 dB	
	$\frac{CPICH_E_c}{\pm 0.1 \text{ dB}}$	
	I _{or}	
8.3 UTRAN Connected Mode Mobility		
8.3.1 FDD/FDD Soft Handover	700	No test case
8.3.2 FDD/FDD Hard Handover		
8.3.4 Inter-system Handover form	TBD	
UTRAN FDD to GSM		
8.3.5 Cell Re-selection in CELL_FACH		
8.3.5.1 One frequency present in the neighbour list	IBD	
8.3.5.2 Two frequencies present in the	TBD	
neighbour list		
8.3.6.1 One frequency present in the	TBD	
neighbour list		
8.3.6.2 Two frequencies present in the	ТВД	
Registration in URA_PCH		
8.3.7.1 One frequency present in the	TBD	
neighbour list	755	
8.3.7.2 I wo trequencies present in the neighbour list	IBD	
8.4 RRC Connection Control	TBD	
8.4.1 RRC Re-establishment delay		

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.4.2 Random Access	\hat{I}_{ac}/I_{ac} ±0.3 dB	0.1 dB uncertainty in AICH_Ec
	I_{ac} ±1.0 dB	ratio
	AICH E	0.3 dB uncertainty in \hat{I} /I
	$\frac{IIICII_{L}}{I}$ ±0.1 dB	based on power meter
	I or	measurement after the combiner
		Overall error is the sum of the
		$\hat{I}_{\perp}/I_{\perp}$ ratio error and the
		AICH_Ec/lor ratio.
		The absolute error of the AWGN is specified as 1.0 dB
8.5 Timing and Signalling Characteristics		0.1 dB upportointy in
8.5.1 DE Transmit Timing	<i>I</i> _{or} ±1.0 dB	DPCH Ec ratio
	I_{or1}/I_{or2} ±0.3 dB	
	DPCH E	
	$\frac{I I O I I I I I I}{I_{or}} = \pm 0.1 \text{ dB}$	0.3 dB uncertainty in lor1/lor2 based on power meter measurement after the combiner
		The absolute error of the lor 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	IBD	
8.6.1.2 Event triggered reporting of	TBD	
multiple neighbours in AWGN		
propagation condition	TBD	
detectable neighbours in AWGN		
8.6.1.4 Correct reporting of neighbours in	TBD	
fading propagation condition		
8.6.2 FDD inter frequency measurements	TBD	
AWGN propagation condition		
8.6.2.2 Correct reporting of neighbours in	TBD	
8.6.3 TDD measurements	TBD	
8.6.3.1Correct reporting of TDD	TBD	
neighbours in AWGN propagation		
8.7 Measurements Performance		
Requirements		
8.7.1 CPICH RSCP		
8.7.1.1 Intra frequency measurements	\hat{I}_{or}/I_{oc} ±0.3 dB	Same as 8.2.2.1
	<i>I_{oc}</i> ±1.0 dB	
	$CPICH _E_c$	
	I_{or} ±0.1 dB	

Clause	Maximum Test System Uncertainty	Derivation of Test System
		Uncertainty
8.7.1.2 Inter frequency measurement	\hat{I}_{or}/I_{oc} ±0.3 dB	Same as 8.2.2.2
accuracy	<i>I_{oc}</i> ±1.0 dB	
	I_{oc1}/I_{oc2} ±0.3 dB	
	$CPICH _E_c$ +0.1 dB	
	I_{or}	
8.7.2 CPICH Ec/lo		
8.7.1.1 Intra frequency measurements	\hat{I}_{or}/I_{oc} ±0.3 dB	Same as 8.2.2.1
accuracy	I_{oc} ±1.0 dB	
	CPICH E	
	$\frac{1}{I_{or}} = \pm 0.1 \text{ dB}$	
8.7.1.2 Inter frequency measurement	\hat{I}_{or}/I_{oc} ±0.3 dB	Same as 8.2.2.2
accuracy	<i>I_{oc}</i> ±1.0 dB	
	I_{oc1}/I_{oc2} ±0.3 dB	
	$CPICH _E_c$	
	I_{or} ±0.1 dB	
8.7.3 UTRA Carrier RSSI	\hat{I}_{or}/I_{oc} ±0.3 dB	0.3 dB uncertainty in \hat{I} /I
	I_{oc} ±1.0 dB	based on power meter
	I_{ac1}/I_{ac2} ±0.3 dB	measurement after the
		combiner
		0.3 dB uncertainty in loc1/loc2
		measurement after the
		combiner
		The absolute error of the
		AWGN is specified as 1.0 dB
8.7.4 SFN-CFN observed time difference	TBD	
8.7.5 SFN-SFN observed time difference	TBD	
8.7.6 UE RX-1X time difference	I_{or}/I_{oc} <u>±0.3 dB</u>	0.3 dB uncertainty in \hat{I}_{or}/I_{oc}
	I _{oc} ±1.0 dB	based on power meter
		measurement after the combiner
		The absolute error of the
		AWGN is specified as 1.0 dB.
8.7.7 Observed time difference to GSM	TBD	
cell		
8.7.8 P-CCPCH RSCP	TBD	

-----next section-----

F.2.4 Requirements for support of RRM

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

Clause	Test Tolerance
8.2 Idle Mode Tasks	
8.2.2 Cell Re-Selection	
8.2.2.1 Scenario 1: Single carrier case	0.2 dD for \hat{I} /I
	0.3 dB lof I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
8.2.2.2 Scenario 2: Multi carrier case	0.3 dB for \hat{I} /I
	r_{or}/r_{oc}
8.2.2 LITRAN to COM Call Do Solastion	
8.2.3 UTRAN to GSM Cell Re-Selection	<u> </u>
level changed	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH Ec/lor
	0.3 dB for loc/RXLEV
8.2.3.2 Scenario 2: Only UTRA level	
changed	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
	0.3 dB for loc/RXLEV
8.2.4 FDD/IDD cell re-selection	0.3 dB for \hat{I} /I
	0.1 dB for CPICH Ec/lor
	0.3 dB for loc1/loc2
8.3 UTRAN Connected Mode Mobility	
8.3.1 FDD/FDD Soft Handover	
8.3.2 FDD/FDD Hard Handover	TBD
8.3.3 FDD/TDD Handover	TBD
8.3.4 Inter-system Handover form	TBD
UTRAN FDD to GSM	
8.3.5 Cell Re-selection in CELL_FACH	
8.3.5.1 One frequency present in the	TBD
neighbour list	
8.3.5.2 Two frequencies present in the	TBD
neighbour list	
8.3.6 Cell Re-selection in CELL_PCH	TRD
o.s.o. T One frequency present in the	עפו
8 3 6 2 Two frequencies present in the	TBD
neighbour list	
8.3.7 Cell Re-selection in URA PCH	
8.3.7.1 One frequency present in the	TBD
neighbour list	
8.3.7.2 Two frequencies present in the	TBD
neighbour list	
8.4 RRC Connection Control	
8.4.1 RRC Re-establishment delay	TBD
8.4.2 Random Access	0.3 dB for \hat{I}_{m}/I_{m}
	0.1 dB for AICH Ec/lor
8.5 Timing and Signalling Characteristics	
8.5.1 UF Transmit Timing	TBD
8.6 UE Measurements Procedures	
8.6.1 FDD intra frequency measurements	
8.6.1.1 Event triggered reporting in	TBD
AWGN propagation conditions	
8.6.1.2 Event triggered reporting of	TBD
multiple neighbours in AWGN	
propagation condition	
8.6.1.3 Event triggered reporting of two	TBD
detectable neighbours in AWGN	
propagation condition	
o.o. 1.4 Correct reporting of neighbours in fading propagation condition	עסו

Clause	Test Tolerance
8.6.2 FDD inter frequency measurements	
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD
8.6.2.2 Correct reporting of neighbours in	TBD
Fading propagation condition	
8.6.3 TDD measurements	
8.6.3.1Correct reporting of IDD	IBD
condition	
8 7 Measurements Performance	TBD
Requirements	
8.7.1 CPICH RSCP	
8.7.1.1 Intra frequency measurements	0.3 dB for \hat{I}_{ar}/I_{ac}
accuracy	0.1 dB for CPICH_Ec/lor
	1.0 dB for loc
8.7.1.2 Inter frequency measurement accuracy	0.3 dB for $ {\hat I}_{or} ig/ I_{oc} $
	0.1 dB for CPICH_Ec/lor
	0.3 dB for loc1/loc2
	1.0 dB for loc
8.7.1.1 Intra frequency measurements	<u>^ /</u>
accuracy	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
8.7.1.2 Inter frequency measurement	0.3 dB for \hat{I}_{or}/I_{oc}
accuracy	0.1 dB for CPICH_Ec/lor
8.7.3 UTRA Carrier RSSI	0.3 dB for \hat{I}_{ar}/I_{ac}
	1.0 dB for loc
8.7.4 SFN-CFN observed time difference	
8.7.5 SFN-SFN observed time difference	
8.7.6 UE Rx-Tx time difference	0.3 dB for \hat{I}_{or}/I_{oc}
	1.0 dB for loc
	0.1 dB for DPCH_Ec/lor
8.7.7 Observed time difference to COM	U.5 CHIPI TOT KX-IX TIMING ACCURACY
cell	
8.7.8 P-CCPCH RSCP	IBD

F.4 Derivation of Test Requirements (This clause is informative)

----next section-

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.

Test	Minimum Requirement in TS	Test	Test Requirement in TS 34.121
	25.101	Tolerance	
5.2 Maximum Output	Power class 1 (33 dBm)		Formula: Upper Tolerance limit + TT
Power	Tolerance = $\pm 1/-3$ dB	0.7 00	Lower Tolerance limit – TT
	Power class 2 (27 dBm)		For power classes 1-3:
	Tolerance = $+1/-3$ dB		Upper Tolerance limit = +1.7 dB
	Power class 3 (24 dBm)		Lower Tolerance limit = -3.7 dB
	Tolerance = $+1/-3$ dB		For power class 4:
	Power class 4 (21 dBm)		Upper Tolerance limit = +2.7 dB
	Tolerance = $\pm 2 \text{ dB}$		Lower Tolerance limit = -2.7 dB
5.3 Frequency Error	The UE modulated carrier	10 Hz	Formula: modulated carrier frequency
	within ± 0.1 ppm compared to the		
	carrier frequency received from		modulated carrier frequency error = $\pm (0.1)$
	the Node B.		ppm + 10 Hz).
			· · · · · · · · · · · · · · · · · · ·
5.4.1 Open loop power	Open loop power control	1.0 dB	Formula: Upper Tolerance limit + TT
control in the uplink	tolerance ±9 dB (Normal)		Lower Tolerance limit – TT
	Open loop power control		For Normal conditions:
	tolerance ±12 dB (Normal)		Upper Tolerance limit = $\pm 10 \text{ dB}$
			Lower Tolerance limit = -10 dB
			For Extreme conditions:
			Upper Tolerance limit = +13 dB
			Lower Tolerance limit = -13 dB
5.4.2 Inner loop power	See table 5.4.2.1 and 5.4.2.2	0.25dB	Formula: Upper Tolerance limit + TT
control in uplink		0.15 dB	Lower Tolerance limit – TT
-		0.2 dB	
		[0.3 dB]	
5.4.3 Minimum Output	UE minimum transmit power	1.0 dB	Formula:
Power	shall be less than –50 dBm		UE minimum transmit power + TT
			UE minimum transmit power = -49 dBm

Table F.4.1: Derivation of Test Rec	quirements (Transmitter tests)

Test	st Minimum Requirement in TS		Test Requirement in TS 34.121
	25.101	Tolerance	
		(TT)	
5.4.4 Out-of-	$\underline{DPCCH}_{-}\underline{E_{c}}$ levels	0.4 dB	Formulas:
synchronisation	I _{or}	for	Ratio between A and B + 11
nandling of output	AB: -22 dB	$\underline{DPCCH}_{\underline{E}}$	Ratio between B and D – 11
power:	BD: -28 dB	I _{or}	Ratio between D and E – 11
	DE: -24 dB		transmit ON/OEE time + TT timing
	EF: -18 dB	0 ms for	
	transmit ON/OFF time	timing	
	200ms	measurem	DPDCH F 40.0 JD
		ent	$\frac{DTDCH_{L}L_{c}}{T} = -16.6 \text{ dB}$
	$\underline{DPDCH}_{\underline{E_c}} = -16.6 \text{ dB}$		I _{or}
	I _{or}		
	0		I _{oc} - 60 dBm
	$I = 60 \mathrm{dBm}$		
			$\hat{I}/I = -1 dB$
			$r_{or}/r_{oc} = r_{oc}$
	$I_{or}/I_{oc} = -1 \text{ dB}$		DRCCII E
			$\underline{DPCCH}_{\underline{E_c}}$ levels:
			I _{or}
			AB: -21.6 dB
			BD: -28.4 dB
			DE: -24.4 dB
			EF: -17.6 dB
			transmit ON/OFF time
			200ms timing
			is bandled by Transmit OEE power test
			and uncertainty of ON power
			measurement is handled by Minimum
			output power test.
5.5.1 Transmit OFF	Transmit OFF power shall be	1.0 dB	Formula: Transmit OFF power + TT
power (static case)	less than -56 dBm		Transmit OFF power = -55dBm.
5.5.2 Transmit ON/OFF	Transmit ON power shall be the	On power	Formula for transmit ON power:
time mask (dynamic	target value as defined in clause	upper TT =	Transmit ON power target upper limit +
case)	5.5.2.2	0.7 dB	On power upper TT
	Transmit OFF power shall be	On power	I ransmit ON power target lower limit -
	less than -56 dBm	lower $II =$	On power lower 1 1
		1.0 dB	
		Off power	To calculate Transmit ON power target
			range from Table 5.5.2.3 then apply table
		TILIUD	5.4.1.1 open limits then apply table 5.7.1
			(only if there has been a transmission
			(only if there has been a transmission gap) then can 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:	TFC step size = +5 to +9 dB	0.3 dB	Formula: Upper Tolerance limit + TT
power control step size			Lower Tolerance limit – TT
			Upper limit = -4.7 dB
		755	Lower limit = -9.3 dB
5.7 Power setting in	various	IBD	IRD
uplink compressed		(Subset of	
INODE		1 5.4.2)	

S Occupied Bandwidth Toter and CTT Formula: cocupied channel bandwidth: + S S Occupied Channel bandwidth is bandwidth in the bandwidth is and bands and bands and band is bandwidth is and the rate of 344 Mops. 0 kHz T S Spectrum emission Minimum requirement defined in TS25.101 Table 6.10. 1.5 dB 0 kHz 0 kHz S Spectrum emission The lower limit shall be -50 dBm / 3.84 MHz or which ever is higher. 1.5 dB 1.5 dB 1.5 dB 0 kHz 2.84 MHz or which ever is higher. 0.8 dB 0.	Test	Minimum Requirement in TS 25.101		Test	Test Requirement in TS 34.121	
5.8 Occupied Bandwidth The occupied channel bandwidth shall be shan 5 MHz based on a chip rate of 3.84 Mops. 0 KHz T 3.84 Mops. Formula: occupied channel bandwidth :+ T T September 1 Minimum requirement defined in 1.5 dB Formula: Minimum requirement entries in T325.101 Table 6.10. The lower limit shall be ~50 dBm 7.3.84 MHz or which ever is higher. Formula: Minimum requirement entries in T325.101 Table 6.10. Zoro test tolerance is applied for Additional requirements for Band I due to FCC regulatory requirements. The lower limit shall be ~50 dBm 7.36.84 MHz or which ever is higher. 5.10 Adjacent Channel Leakage Power Ratio (ACLR) Power Classes 3 and 4: UE channel +10 MHz or -50 MHz, ACLR limit: 33 dB 0.8 dB Formula: ACLR limit: T Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 32 d B UE channel +10 MHz or -10 MHz, ACLR limit: 42 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement nt Formula: Minimum Requirement+TT Add zero to all the values of Minimum Requirement nt 5.11 Spurious Emissions Frequency Band Minimum Requirement nt Minimum Requirement nt Frequency Band Minimum Requirement nt Minimum Requirement nt 9 kHz ≤ f < 100 MHz -36dBm MHz 0 dB 10 Hz ≤ f < 2.0 Hz -36dBm MHz -36dBm -700 Hz -700 Hz -36dBm -700 Hz 10 Hz ≤ f < 12.7 GHz -36dBm MHz 0 dB 10 Hz ≤ f < 2.0 Hz -700 Hz -300 Hz -700 Hz 11 GHz ≤ f < 12.7 GHz -300 Hz -700 Hz -700 Hz -700 Hz				(TT)		
5.9 Spectrum emission mask 3.84 Mcps. The lower limits halb 6 = 50 dHz TS25.101 Table 6.10. The lower limits halb 6 = 50 dHz 7.3.84 MHz or which ever is higher. 1.5 dB 1.5 dB 1.5 dB 0.60 dL 1.5 dB 1.5 dB 0.60 dL 1.5 dB 1.5 dB 5.10 Adjacent Channel Leakage Power Ratio (ACLR) Power Classes 3 and 4: UE channel + 50 MHz or -50 MHz, ACLR limit: 33 dB UE channel + 50 MHz or -50 MHz, ACLR limit: 33 dB 0.8 dB Formula: Minimum Requirements. The lower limit shalb 6 = 4.5 dBm 7.3.84 (ACLR) 5.11 Spurious Power Classes 3 and 4: UE channel + 10 MHz or -10 MHz, ACLR limit: 43 dB 0.8 dB Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1 a and 5.11 Spurious 5.11 Spurious Frequency Band KHz Minimum Requirement 1 Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1 a and 5.11 1.0 MHz < 1 < 10 MHz < 1 < 0 dB	5.8 Occupied Bandwidth	The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of		0 kHz	Formula: occupied channel bandwidth: + TT	
3-9 spectrum emination requirement of the dense in the series in the	E O Spectrum omission	3.84 Mcps.	nt defined in	1 E dD	occupied channel bandwidth = 5.0 MHz	
The lower limit shall be $= 50$ dBm higher.Add 1.5 to Minimum requirement entries in T325.101 Table 6.10. Zero test tolerance is asplied for Additional requirements for Band II due to FCC regulatory requirements. The lower limit shall be \rightarrow 8.5 dBm / 3.84 MHz or which ever is higher.Add 1.5 to Minimum requirements for Band II due to FCC regulatory requirements. The lower limit shall be \rightarrow 8.5 dBm / 3.84 MHz or which ever is higher.5.10 Adjacent Channel Leakage Power Ratio (ACLR)Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit -13 dB0.8 dBFormula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 32.2 dB5.11 Spurious EmissionsFrequency Band RequirementMinimum Requirements in table 5.11.1a and 5.11.1b.Frequency Band MHzMinimum Requirement nt ntFrequency Band NHzMinimum Requirements in table 5.11.1a and 5.11.1b.9 kHz ≤ f < 150 MHz-36dBm /10kHz0 dB9 kHz ≤ f < 10 MHz	mask	TS25.101 Table 6.1	0.	1.5 00	Lower limit + TT	
1.3.84 MHz of which ever is higher. In 153.01 11 able 6.10.7 Bable 10r Additional requirements for Band II due to FCC regulatory requirements. The lower limit shall be 4.85 dBm / 3.84 5.10 Adjacent Channel Leakage Power Ratio (ACLR) Power Classes 3 and 4: Use channel +5 MHz or -5 MHz, ACLR limit: 17T Power Classes 3 and 4: Use channel +5 MHz or -10 MHz, ACLR limit: 33 dB Use channel +10 MHz or -10 MHz, ACLR limit: 33 dB Use channel +10 MHz or -10 MHz, ACLR limit: 17T Power Classes 3 and 4: Use channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB Use channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB Use channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB Use channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB Use channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB Minimum Requirements in table 5.11.1b. 5.11 Spurious Emissions Frequency Band Minimum Requirements in table 5.11.1b. Frequency Band Minimum Requirements in table 5.11.1b. Frequency Band Minimum Requirements in table 5.11.1b. Minimum Requirement in table 5.11.1b. 9 kHz ≤ f < 100		The lower limit shall	be -50 dBm		Add 1.5 to Minimum require	ement entries
Additional requirements for Band II due to FCC regulatory requirements. The Iower limit shall be -48.5 dBm / 3.84 MHz or which ever is higher.5.10 Adjacent Channel Leakage Power Ratio (ACLR)Power Classes 3 and 4: UE channel +5 MHz or -50 MHz, ACLR limit: 33 dB0.8 dBFormula: ACLR limit -TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 33 dB5.11 Spurious EmissionsFrequency Band NHz, ACLR limit: 43 dBNetwork informula: Minimum Requirements in table 5.11.1 and 5.11.1 b.5.11 Spurious EmissionsFrequency Band NHz, ACLR limit: MHz, ACLR limit: 43 dBMinimum Requirements in table 5.11.1 and 5.11.1 b.Frequency Band MHzMinimum Requirements ntFrequency Band Minimum Requirements 1.1.1 b.9 kHz ≤ f < 150 MHz-36dBm /10kHz0 dB9kHz ≤ f < 10MHz		higher.	everis		IN 1525.101 Table 6.10. Zero test tolerance is applied for	
Frequency Band Minimum Minimum Requirement Solution Solution 5.11 Adjacent Channel Leakage Power Ratio (ACLR) 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 +10 MHz or -10 MHz, ACLR limit: 43 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirement in table 5.11.1a and 5.11.1b. 9 kHz ≤1 < 150					Additional requirements for Band II due	
S. 10 Adjacent Channel Leakage Power Ratio (ACLR) Dewer Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACL R limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 0.8 dB S dB UE channel +10 MHz or -5 MHz, ACLR limit: 32.2 dB UE channel +10 MHz or -10 MHz, ACLR limit: 32.2 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB 5.11 Spurious Emissions Formula: Minimum Requirements in table 5.11.1 and 5.11.1 spurious Emissions Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1 and 5.11.1 and 5.11.1 and 5.11.1 spurious Emissions Frequency Band MHz Minimum Requirement nt Frequency Band MHz Minimum Requirements 1.1 Minimum Requirements nt Minimum Requirements 1.1 Minimum Requirements 1.1 Minimum Requirements 1.1 Minimum Requirements 1.1 Minimum Requirements 1.1 Minimum Requirements 1.1 Minimum Requirements 1.1 MHz Minimum Requirements 1.1 Minimum 1.1 Minim					The lower limit shall be –48.5 dBm / 3.84	
Site Arage Power Ratio (ACLR) Totes as a distance of the sum of the su	5 10 Adjacent Channel	Power Classes 3 an	d 4:	0.8 dB	MHz or which ever is higher.	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Leakage Power Ratio	UE channel +5 MHz	or -5 MHz,	0.0 0.5	Power Classes 3 and 4:	
Decision of milling in order in the channel	(ACLR)	ACLR limit: 33 dB	lz or -10		UE channel +5 MHz or -5 MHz, ACLR	
5.11 Spurious 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 Requirements Frequency Band Minimum Requirements Frequency Band Minimum Requirements 9 kHz ≤ f < 150		MHz, ACLR limit: 43	B dB		UE channel +10 MHz or -10 MHz, ACLR	
5.11 Spurious Formula: Minimum Requirement+ TT Emissions Frequency Band Minimum $Requirements$ in table 5.11.1a and 5.11.1b. S.11.1b. 9 kHz ≤ f < 150					limit: 42.2 dB	
5.11 Spurious Formula: Minimum Requirement+ TT Emissions Frequency Band Minimum Requirements in table 5.11.1a and 5.11.1b. 9 kHz $\leq 1 < 150$ -36dBm 0 dB 9 kHz $\leq 1 < 16Hz$ Minimum Requirements in table 5.11.1b. 9 kHz $\leq 1 < 150$ -36dBm 0 dB 9 kHz $\leq 1 < 16Hz$ -36dBm Minimum Requirement 150 kHz $\leq 1 < 30$ -36dBm 0 dB 9 kHz $\leq 1 < 100$ -36dBm /1kHz 30 MHz $\leq 1 < 30$ -36dBm 0 dB 150 kHz $\leq 1 < 30$ MHz -36dBm /10kHz 30 MHz $\leq 1 < 1000$ -36dBm 0 dB 30 MHz $\leq 1 < 30$ MHz -36dBm /10kHz 1 GHz $\leq 1 < 12.75$ -30dBm 0 dB 1 GHz $\leq 1 < 2.2$ GHz -30dBm /10kHz 1 GHz $\leq 1 < 12.75$ -30dBm 0 dB 1 GHz $\leq 1 < 2.2$ GHz -30dBm /10kHz 1 GHz $\leq 1 < 12.75$ -30dBm 0 dB 1 GHz $\leq 1 < 2.37$ GHz -30dBm /10kHz 1 SH3.5 MHz $< 1 < -12.75$ -30dBm 0 dB 1 GHz $\leq 1 < 2.7$ GHz -30dBm /10kHz 1 BHz $< 100kHz$ 0 dB 1 GHz $\leq 1 < 2.7$ GHz -30dBm /10kHz -30dBm /10kHz						
5.11 Spurious EmissionsFrequency Band NHz $\leq f < 150$ Minimum Requirement NFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requirement 1Frequency Band NHz $\leq f < 150$ Minimum Requirement (1kHz)Frequency Band NHz $\leq f < 30$ Minimum Requirement (1kHz)9 kHz $\leq f < 150$ $-36dBm$ (1kHz)0 dB9 kHz $\leq f < 30$ MHz $-36dBm$ (10kHz)150 kHz $\leq f < 30$ $-36dBm$ (10kHz)0 dB150 kHz $\leq f < 30$ MHz $-36dBm$ (10kHz)30 MHz $\leq f < 1000$ $-36dBm$ (10kHz)0 dB30 MHz $\leq f < 30$ MHz $-36dBm$ (10kHz)1 GHz $\leq f < 12.75$ GHz $-30dBm$ (100kHz)0 dB1 GHz $\leq f < 2.2$ GHz $-30dBm$ (100kHz)1 GHz $\leq f < 12.75$ GHz $-30dBm$ (100kHz)0 dB1 GHz $\leq f < 2.2$ GHz $-30dBm$ (100kHz)1 GHz $\leq f < 12.75$ GHz $-30dBm$ (100kHz)0 dB1 GHz $\leq f < 4$ GHz $-30dBm$ (100kHz)1 GHz $\leq f < 935$ MHz $< f < 12.75$ (300kHz)0 dB1 893.5 MHz $< f < 30 dBm$ (100kHz)0 dB1 893.5 MHz $< f < 30 dBm$ (100kHz)1 893.5 MHz $< f < 2.35$ MHz $< f < 935$ (300kHz)0 dB1 893.5 MHz $< f < 30 dBm$ (100kHz)0 dB1 893.5 MHz $< f < 30 dBm$ (100kHz)2 925 MHz $\leq f \leq 935$ (300 MHz $< f < 940$ $-71 dBm$ (100kHz)0 dB1 893.5 MHz $< f < 1880$ (100kHz)3 dBC 100 MHz(100kHz)0 dB1 805 MHz $< f < 1880$ (100kHz) $-71 dBm$ (100kHz)<						
5.11 Spurious Emissions						
S.11 spurious Emissions Frequency Band Network Minimum Requirement Portula: Minimum Requirements in table 5.11.1a and 5.11.1b. Frequency Band Minimum Requirements Frequency Band Minimum Requirements in table 5.11.1a and 5.11.1b. 9 kHz ≤ f < 150 kHz -36dBm MHz 0 dB 9 kHz ≤ f < 16Hz	5.44 Onurinus				Ermula Minimum Draw	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Emissions				Add zero to all the values	s of Minimum
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		Requirements in tab		Requirements in table 5	5.11.1a and	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		Frequency Band	Minimum		5.11.10. Frequency Band Minimum	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			Requireme			Requirement
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		9 kHz ≤ f < 150	–36dBm	0 dB	9kHz ≤ f < 1GHz	-36dBm
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		kHz	/1kHz	0.15		/1kHz
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		150 kHz ≤ f < 30 MHz	–36dBm /10kHz	0 dB	150 kHz ≤ f < 30 MHz	–36dBm /10kHz
$ \frac{1}{3} 1$		30 MHz ≤ f < 1000	-36dBm	0 dB	30 MHz ≤ f < 1000 MHz	-36dBm
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		IVITIZ				
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		1 GHz ≤ f < 12.75	-30dBm /1MHz	0 dB	1 GHz ≤ f < 2.2 GHz	-30dBm /1MHz
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		GHZ	/ 1 1011 12	0 dB	2.2 GHz ≤ f < 4 GHz	-30dBm
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$						/1MHz
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $				0 dB	4 GHz ≤ t < 12.75 GHz	-30dBm /1MHz
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz	0 dB	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz
INTEINTEINTEINTEINTEINTEINTEINTEINTEINTE935 MHz < f \leq 960-79dBm0 dB935 MHz < f \leq 960 MHz-79dBmMHz/100kHz1805 MHz \leq f \leq -71dBm0 dB1805 MHz \leq f \leq 1880-71dBm1805 MHzIntermodulation Product0 dB1805 MHz-71dBm/100kHz5.12 TransmitIntermodulation Product0 dBFormula: CW interferer level - TT/25.12 TransmitIntermodulation Product0 dBFormula: CW interferer level - TT/25.13.1 TransmitThe measured EVM shall not0%Formula: EVM limit + TT5.13.1 TransmitThe measured EVM shall not0%Formula: EVM limit + TT		925 MHz ≤ f ≤ 935 MHz	-67dBm /100kHz	0 dB	925 MHz \leq f \leq 935 MHz	-67dBm /100kHz
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		935 MHz < f ≤ 960	-79dBm	0 dB	935 MHz < f ≤ 960 MHz	-79dBm
5.12 Transmit Intermodulation Product 0 dB Formula: CW interferer level – TT/2 5.12 Transmit Intermodulation Product 0 dB Formula: CW interferer level – TT/2 10MHz -41 dBc Intermod Products limits remain Intermod Products limits remain CW Interferer level = -40 dBc CW interferer level = -40 dBc CW interferer level = -40 dBc 5.13.1 Transmit The measured EVM shall not 0% Formula: EVM limit + TT		MHz	/100kHz	0 dB	1005 MUT < f < 1000	/100kHz
5.12 Transmit Intermodulation Intermodulation Product 5MHz 0 dB Formula: CW interferer level – TT/2 Intermodulation 5MHz -31 dBc Intermod Products limits remain unchanged. CW Interferer level = -40 dBc CW interferer level = -40 dBc CW interferer level = -40 dBc 5.13.1 Transmit modulation: The measured EVM shall not oxcord 17.5% 0% Formula: EVM limit + TT		1805 MHZ STS 1880 MHz	/100kHz	0.08	MHz	/100kHz
5.13.1 Transmit The measured EVM shall not 0% Formula: EVM limit + TT 5.13.1 Transmit Diverse of the state of the	5.12 Transmit	Intermodulation Pro	duct	0 dB	Formula: CW interferer leve	el – TT/2
CW Interferer level = -40 dBc unchanged. CW interferer level = -40 dBc CW interferer level = -40 dBc 5.13.1 Transmit The measured EVM shall not 0% Formula: EVM limit + TT EV/M limit = 17.5 %	memodulation	5MHz -31 dBc 10MHz -41 dBc CW Interferer level = -40 dBc			Intermod Products limits remain unchanged.	
5.13.1 Transmit The measured EVM shall not 0% Formula: EVM limit + TT modulation: EV/M exceed 17.5% EV/M						
5.13.1 Transmit The measured EVM shall not 0% Formula: EVM limit + TT					CW interferer level = -40 dBc	
	5.13.1 Transmit	The measured EVM	shall not	0%	Formula: EVM limit + TT	
Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121			
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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 Requi 25.10	rement in TS)1	Test Tolerance (TT)	Test Requirement in	TS 34.121
6.2 Reference sensitivity level	for = -106.7 dBm / DPCH_Ec = -117 MHz BER limit = 0.001	′ 3.84 MHz dBm / 3.84	0.7 dB	Formula: Îor+ TT DPCH_Ec + TT BER limit unchanged Îor = -106 dBm / 3 DPCH_Ec = -116.3 dBm	3.84 MHz / 3.84 MHz
6.3 Maximum input level	-25 dBm lor -19 dBc DPCH_E	c/lor	0.7 dB	Formula: lor-TT	
6.4 Adjacent Channel Selectivity	for = -92.7 dBm / 3 DPCH_Ec = -103 MHz loac (modulated) = dBm/3.84 MHz BER limit = 0.001	3.84 MHz dBm / 3.84 = -52	0 dB	Formula: îor unchanged DPCH_Ec unchanged Ioac – TT BER limit unchanged Ioac = -52 dBm/3.84 MHz	
6.5 Blocking Characteristics	See Table 6.5.3 a TS34.121 BER limit = 0.001	nd 6.5.4. in	0 dB	Formula: I blocking (modulated) - TT (d I blocking (CW) - TT (dBm) BER limit unchanged	Bm/3.84MHz)
6.6 Spurious Response	Iblocking(CW) –44 Fuw: Spurious response BER limit = 0.001	4 dBm e frequencies	0 dB	Formula: I _{blocking} (CW) - TT Fuw unchanged BER limit unchanged I _{blocking} (CW) = -44 dBm	(dBm)
6.7 Intermodulation Characteristics	louw1 (CW) louw2 (modulated 3.84 MHz Fuw1 (offset) 10 Fuw2 (offset) 20 lor = -103.7 dBm/2 DPCH_Ec = -114 BER limit = 0.001	-46 dBm) –46 dBm / MHz MHz 3.84 MHz dBm/3.84	0 dB	Formula: lor + TT DPCH_Ec + TT louw1 level unchanged louw2 level unchanged BER limit unchanged. lor = -114 dBm BER limit. = 0.001	
6.8 Spurious Emissions				Formula: Maximum level + Add zero to all the values o	TT of Maximum
	Frequency Band	Maximum level		Frequency Band	Maximum level
	9kHz ≤ f < 1GHz	-57dBm /100kHz	0 dB	9kHz ≤ f < 1GHz	-57dBm /100kHz
	1GHz ≤ f ≤ 12.75GHz	-47dBm /1MHz	0 dB	1GHz ≤ f ≤ 2.2GHz	-47dBm /1MHz
			0 dB	$2.2GHz < f \le 4GHz$	-47dBm /1MHz
			0 dB	4GHz < f ≤ 12.75GHz	-47dBm /1MHz
	1920MHz ≤ f ≤ 1980MHz	-60dBm /3.84MHz	0 dB	$1920MHz \le f \le 1980MHz$	-60dBm /3.84MHz
	2110MHz ≤ f ≤ 2170MHz	-60dBm /3.84MHz	0 dB	$2110MHz \le f \le 2170MHz$	-60dBm /3.84MHz

Table F.4.2: Derivation of Test Requirements (Receiver tests)

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

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

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

Test	Minimum Requirement in TS 25.101	Test Tolerance	Test Requirement in TS 34.121
7.6.1 Demodulation of DPCH in transmit diversity propagation conditions	$\frac{DPCH_{-}E_{c}}{I_{or}} - 16.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	(TT) 0.1 dB for $\frac{DPCH _ E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 16.7 \text{ dB}:$
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\frac{DPCH_{-}E_{c}}{I_{or}} -18 \text{ to } -18.3 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 17.9 \text{ to } -18.2 \text{ dB}:$
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\frac{DPCH_{-}E_{c}}{I_{or}} -7.5 \text{ to } -9.2 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 0 \text{ to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 0.8 \text{ to } -2.2 \text{ dB}$ $\frac{DPCH_{-}E_{c}}{I_{or}} -7.4 \text{ to } -9.1 \text{ dB}$
7.7.1 Demodulation in inter-cell soft Handover	$\frac{DPCH_E_c}{I_{or}} -5.5 \text{ to } -15.2 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = \text{lor2/loc} = 6 \text{ to } 0 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.8 \text{ to } 0.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -5.4 \text{ to } -15.4 \text{ dB}$
7.7.2 Combining of TPC commands Test 1 7.7.2 Combining of			To be completed To be completed

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.8.1 Power control in downlink constant BLER target	$\frac{DPCH_E_c}{I_{or}}$ -9 to -16 dB	0.1 dB for $\underline{DPCH_E_c}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	<i>I_{oc}</i> = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	\hat{I}_{or}/I_{oc} = 9 to -1 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = 9.6 to -0.4 dB
			$\frac{DPCH_E_c}{I_{or}}$ -8.9 to -15.9 dB:
7.8.2, Power control in downlink initial convergence	$\frac{DPCH_E_c}{I_{or}}$ -8.1 to -18.9 dB	0.1 dB for $\underline{DPCH_E_c}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	I_{oc} = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	\hat{I}_{or}/I_{oc} = -1 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = -0.4 dB
			$\frac{DPCH_E_c}{I_{or}}$ -8.0 to -18.8 dB:
7.8.3, Power control in downlink: wind up effects	$\frac{DPCH_E_c}{I_{or}}$ -13.3 dB	0.1 dB for $\underline{DPCH_E_c}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
	<i>I_{oc}</i> = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = 5 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	I_{oc} unchanged
			\hat{I}_{or}/I_{oc} = 5.6 dB
			$\frac{DPCH_E_c}{I_{or}}$ -13.2 dB:
7.9 Downlink compressed mode	$\frac{DPCH_E_c}{I_{or}}$ -15.4 dB	0.1 dB for DPCH_E	Formulas: $\frac{DPCH_E_c}{I} = \text{ratio} + \text{TT}$
	<i>I_{oc}</i> = - 60 dBm	I_{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = 9.6 dB
			$\frac{DPCH_E_c}{I_{or}}$ -15.3 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.10 Blind transport format detection Tests 1, 2, 3	$\frac{DPCH_E_c}{I_{or}}$ -17.7 to -18.4 dB	0.1 dB for $\frac{DPCH_E_c}{I}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
	$I_{oc} = -60 \text{ dBm}$	0.3 dB for	\hat{I}_{or}/I_{oc} = ratio + TT
	$I_{or}/I_{oc} = -1 \text{ dB}$	\hat{I}_{or}/I_{oc}	\hat{I}_{oc} unchanged \hat{I}_{oc} / I_{oc} = -0.7 dB
			$\frac{DPCH_{-}E_{c}}{I_{or}} -17.6 \text{ to} -18.3 \text{ dB}:$
7.10 Blind transport format detection Tests 4, 5, 6	$\frac{DPCH_E_c}{I_{or}}$ -13.0 to -13.8 dB	0.1 dB for $\underline{DPCH_E_c}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
	I_{oc} = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = -3 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			$\hat{I}_{or}/I_{oc} = -2.4 \text{ dB}$
			$\frac{DPCH_E_c}{I_{or}}$ -12.9 to -13.7 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2 Idle Mode Tasks			
8.2.2 Cell Re-Selection			
8.2.2.1 Scenario 1: Single carrier case			

Test	Test Parameters in	Test Tolerance	Test Requirement in TS 34.121
8 2 2 2 Scenario 2	10 20:100		
Multi carrier case			
8.2.3 UTRAN to GSM	TBD		
Cell Re-Selection			
8.2.3.1 Scenario 1:	TBD		
Both UTRA and GSM			
level changed			
Only UTRA level	160		
changed			
8.2.4 FDD/TDD cell re-	TBD		
selection			
8.3 UTRAN Connected	TBD		
NODE MODILITY			
Handover			
8.3.2 FDD/FDD Hard	ТВО		
Handover			
8.3.3 FDD/TDD	TBD		
Handover			
8.3.4 Inter-system	TBD		
FDD to GSM			
8.3.5 Cell Re-selection	TBD		
in CELL_FACH			
8.3.5.1 One frequency	TBD		
present in the			
neighbour list			
8.3.5.2 IWO	IBD		
the neighbour list			
8.3.6 Cell Re-selection	TBD		
in CELL_PCH			
8.3.6.1 One frequency	TBD		
present in the			
8362 Two	TBD		
frequencies present in			
the neighbour list			
8.3.7 Cell Re-selection	TBD		
in URA_PCH			
8.3.7.1 One frequency	IBD		
neighbour list			
8.3.7.2 Two	TBD		
frequencies present in			
the neighbour list			
8.4 RRC Connection	ТВО		
establishment delav			
8.4.2 Random Access	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.5 Timing and	TBD		
Signalling			
Characteristics			
8.5.1 UE Transmit	IBD		
8.6 LIE Measurements	ТВО		
Procedures			
8.6.1 FDD intra	TBD		
frequency			
measurements			
8.6.1.1 Event triggered	TBD		
reporting in AVVGN			
8 6 1 2 Event triggered	TBD		
reporting of multiple			
neighbours in AWGN			
propagation condition			
8.6.1.3 Event triggered	TBD		
reporting of two			
in AWGN propagation			
condition			
8.6.1.4 Correct	TBD		
reporting of neighbours			
in fading propagation			
8 6 2 EDD inter			
frequency			
measurements			
8.6.2.1 Correct	TBD		
reporting of neighbours			
in AWGN propagation			
8 6 2 2 Correct	ТВО		
reporting of neighbours			
in Fading propagation			
condition			
8.6.3 TDD	TBD		
8 6 3 1Correct	ТВД		
reporting of TDD			
neighbours in AWGN			
propagation condition			
8.7 Measurements	IBD		
Requirements			
8.7.1 CPICH RSCP	TBD		
8.7.1.1 Intra frequency	TBD		
measurements			
accuracy			
8.7.1.2 Inter frequency	TBD		
8 7 2 CPICH Ec/lo	ТВО		
8 7 1 1 Intra frequency	TBD		
measurements			
accuracy			
8.7.1.2 Inter frequency	TBD		
measurement accuracy			
8.7.3 UTRA Carrier	טאו		
8.7.4 SFN-CFN	TBD		
observed time			
difference			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.5 SFN-SFN observed time difference	TBD		
8.7.6 UE Rx-Tx time difference	<u>Io -10.9 dB = loc,</u> <u>Test 1: lo = -94 dBm</u> <u>Test2 : lo = -72dBm</u> <u>Test3 : lo = -50dBm</u> <u>Timing Accuracy ± 1.5 chip</u>	<u>1 dB for loc</u> <u>0.3 dB for lor/loc</u> [<u>0.5 chip for timing</u> <u>accuracy</u>]	$\frac{\text{Test 1: lo = -92.7 dBm,}}{\text{loc = -103.6 dBm}}$ $\frac{\text{Formula:}}{\text{loc*(1-TT_{loc}+ (lor/loc-TT_{lor/loc})) \ge}}{-94}$ $\frac{\text{Test 2: unchanged (no critical RF parameters)}}{\text{Test 3: lo = -51.3 dBm, loc =}}$ $\frac{-62.2 dBm}{\text{Formula:}}$ $\frac{\text{loc*(1+TT_{loc}+ (lor/loc+TT_{lor/loc})) \le}}{-50}$ $\frac{\text{Timing accuracy [±2.0] chip}}{\text{Formulas:}}$ $\frac{\text{Upper limit +TT}}{\text{Lower limit -TT}}$
difference to GSM cell			
0.7.8 P-CCPCH KSCP	IBD		

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How to create CRs using this form:

- 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

Test Nur	nber	$\frac{DPCH - E_c}{E_c}$ (see note)	BLER		
		I _{or}			
1		–17,9 dB	10 ⁻²		
2		–18,2 dB	10 ⁻²		
NOTE:	This is sharin depen	is the total power from both antennas. Power ng between antennas are closed loop mode ndent as specified in TS 25.214 [5].			

Table 7.6.2.4: Test requirements for DCH reception in feedback transmit diversity mode

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

7.6.3 Demodulation of DCH in Site Selection Diversity Transmission Power Control mode

7.6.3.1 Definition and applicability

The bit error characteristics of UE receiver is determined in Site Selection Diversity Transmission Power Control (SSDT) mode. Two Node B emulators are required for this performance test. The delay profiles of signals received from different base stations are assumed to be the same but time shifted by 10 chip periods.

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

7.6.3.2 Minimum requirements

The downlink physical channels and their relative power to Ior are the same as those specified in clause E.3.3 irrespective of Node Bs and the test cases. DPCH_Ec/Ior value applies whenever DPDCH in the cell is transmitted. In Test 1 and Test 3, the received powers at UE from two Node Bs are the same, while 3dB offset is given to one that comes from one of Node Bs for Test 2 and Test 4 as specified in table 7.6.3.1.

For the parameters specified in table 7.6.3.1 the average downlink <u>DPCH_E</u> power ratio shall be below the specified

value for the BLER shown in table 7.6.3.2.

Table 7.6.3.1: DCH parameters in multi-path propagation conditions during SSDT mode	
(Propagation condition: Case 1)	

 I_{or}

Parameter	Test 1	Test 2	Test 3	Test 4	Unit
Phase reference					
\hat{I}_{or1}/I_{oc}	0	-3	0	0	dB
\hat{I}_{or2}/I_{oc}	0	0	0	-3	dB
I _{oc}		-	60		dBm / 3,84 MHz
Information Data Rate	12,2	12,2	12,2	12,2	kbps
<u>Cell ID code word error ratio</u> in uplink <mark>Feedback error rate</mark> (note)	4 <u>1</u>	4 <u>1</u>	4 <u>1</u>	4 <u>1</u>	%
Number of FBI bits assigned to "S" Field	1	1	2	2	
Code word Set	Long	Long	Short	Short	
UL DPCCH slot Format	<u>#2</u> <u>#5</u>				
NOTE: The code word errors are introduced independently in both uplink channels. Feedback error rate is defined as FBI bit error rate.					

Test Number	$\frac{DPCH_E_c}{I_{or}}$	BLER
1	–7,5 dB	10 ⁻²
2	−6,5 dB	10 ⁻²
3	–10,5 dB	10 ⁻²
4	–9,2 dB	10 ⁻²

Table 7.6.3.2: DCH requirements in multi-path propagation conditions during SSDT Mode

The reference for this requirement is TS 25.101 [1] clause 8.6.3.1.

7.6.3.3 Test purpose

To verify that UE reliably demodulates the DPCH of the selected Node B while site selection diversity is enabled during soft handover.

7.6.3.4 Method of test

7.6.3.4.1 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 two SS's, multi-path fading simulators and an AWGN source to the UE antenna connector as shown in figure A.11.
- 2) Set up a call according to the Generic call setup procedure, and RF parameters are set up according to table 7.6.3.3 and table 7.6.3.4.
- 3) Enter the UE into loopback test mode and start the loopback test.
- 4) Activate SSDT function.
- 5) Set up fading simulators as fading condition case 1, which is described in table D.2.2.1.

7.6.3.4.2 Procedure

Measure BLER in points specified in table 7.6.3.4.

7.6.3.5 Test Requirements

For the parameters specified in table 7.6.3.3 the average downlink $DPCH_{E_c}$ power ratio shall be below the specified

 I_{or}

value for the BLER shown in table 7.6.3.4.

Table 7.6.3.3: DCH parameters in multi-path propagation conditions during SSDT mode (Propagation condition: Case 1)

Parameter	Test 1	Test 2	Test 3	Test 4	Unit
Phase reference					
\hat{I}_{or1}/I_{oc}	0,8	-2,2	0,8	0,8	dB
\hat{I}_{or2}/I_{oc}	0,8	0,8	0,8	-2,2	dB
I _{oc}		-	60		dBm / 3,84 MHz
Information Data Rate	12,2	12,2	12,2	12,2	kbps
Cell ID code word error ratio in uplinkFeedback error rate (note)	4 <u>1</u>	4 <u>1</u>	4 <u>1</u>	4 <u>1</u>	%
Number of FBI bits assigned to "S" Field	1	1	2	2	
Code word Set	Long	Long	Short	Short	
UL DPCCH slot Format #2 #5					
NOTE: The code word errors are introduced independently in both uplink channels. Feedback error rate is					
defined as FBI bit error rate.					

Table 7.6.3.4: DCH requirements in multi-path propagation conditions during SSDT Mode

Test Number	$\frac{DPCH_E_c}{I_{or}}$	BLER
1	-7,4 dB	10 ⁻²
2	-6,4 dB	10 ⁻²
3	–10,4 dB	10 ⁻²
4	–9,1 dB	10 ⁻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.

Annex C (normative): Measurement channels

C.1 General

The measurement channels in this annex are defined to derive the requirements in clauses 5, 6 and 7. The measurement channels represent example configuration of radio access bearers for different data rates.

The measurement channel for 12,2 kbps shall be supported by any UE both in up- and downlink. Support for other measurement channels is depending on the UE Radio Access capabilities.

C.2 UL reference measurement channel

C.2.1 UL reference measurement channel (12,2 kbps)

The parameters for the 12,2 kbps UL reference measurement channel are specified in table C.2.1.1 and table C.2.1.2. The channel coding for information is shown in figure C.2.1

Table C.2.1.1: UL reference measurement channel physical parameters (12,2 kbps)

Parameter	Level	Unit		
Information bit rate	12,2	kbps		
DPDCH	60	kbps		
DPCCH	15	kbps		
DPCCH Slot Format #I	0	-		
DPCCH/DPDCH power ratio	-5,46	dB		
TFCI	On	-		
Repetition	23	%		
NOTE: Slot Format #2 is used for closed loop tests in clause 7.6.2. <u>Slot Format #2 and</u> #5 are used for site selection diversity transmission tests in subclause 7.6.3				

Table C.2.1.2: UL reference measurement channel, transport channel parameters (12.2 kbps)

Parameters	DTCH	DCCH
Transport Channel Number	1	2
Transport Block Size	244	100
Transport Block Set Size	244	100
Transmission Time Interval	20 ms	40 ms
Type of Error Protection	Convolution Coding	Convolution Coding
Coding Rate	1/3	1/3
Rate Matching attribute	256	256
Size of CRC	16	12



Figure C.2.1 (Informative): Channel coding of UL reference measurement channel (12,2 kbps)

C.2.2 UL reference measurement channel (64 kbps)

The parameters for the 64 kbps UL reference measurement channel are specified in table C.2.2.1 and table C.2.2.2. The channel coding for information is shown in figure C.2.2. This measurement channel is not currently used in the present document but can be used for future requirements.

Parameter	Level	Unit
Information bit rate	64	kbps
DPDCH	240	kbps
DPCCH	15	kbps
DPCCH Slot Format #i	0	-
DPCCH/DPDCH	-9,54	dB
TFCI	On	-
Repetition	18	%

Table C.2.2.1: UL reference measurement channel (64 kbps)

Fable C.2.2.2: UL	. reference measurement	channel, transport	channel parameters	s (64 kbps)
		<i>i</i> i		· · · ·

Parameter	DTCH	DCCH
Transport Channel Number	1	2
Transport Block Size	1 280	100
Transport Block Set Size	1 280	100
Transmission Time Interval	20 ms	40 ms
Type of Error Protection	Turbo Coding	Convolution Coding
Coding Rate	1/3	1/3
Rate Matching attribute	256	256
Size of CRC	16	12



Figure C.2.2 (Informative): Channel coding of UL reference measurement channel (64 kbps)

C.2.3 UL reference measurement channel (144 kbps)

The parameters for the 144 kbps UL reference measurement channel are specified in table C.2.3.1 and table C.2.3.2. The channel coding for information is shown in figure C.2.3. This measurement channel is not currently used in the present document but can be used for future requirements.

Parameter	Level	Unit
Information bit rate	144	kbps
DPDCH	480	kbps
DPCCH	15	kbps
DPCCH Slot Format #i	0	-
DPCCH/DPDCH power ratio	-11,48	dB
TFCI	On	-
Repetition	8	%

Table C.2.3.1: UL reference measurement channel (144 kbps)

Table C.2.3.2: UL reference measurement channel, tran	nsport channel parameters (144 kbps)
---	-----------------------------	-----------

Parameters	DTCH	DCCH
Transport Channel Number	1	2
Transport Block Size	2 880	100
Transport Block Set Size	2 880	100
Transmission Time Interval	20 ms	40 ms
Type of Error Protection	Turbo Coding	Convolution Coding
Coding Rate	1/3	1/3
Rate Matching attribute	256	256
Size of CRC	16	12



Figure C.2.3 (Informative): Channel coding of UL reference measurement channel (144 kbps)

C.2.4 UL reference measurement channel (384 kbps)

The parameters for the 384 kbps UL reference measurement channel are specified in table C.2.4.1 and table C.2.4.2. The channel coding for information is shown in figure C.2.4. This measurement channel is not currently used in the present document but can be used for future requirements.

Parameter	Level	Unit
Information bit rate	384	kbps
DPDCH	960	kbps
DPCCH	15	kbps
DPCCH Slot Format #i	<u>0</u>	=
DPCCH/DPDCH power ratio	-11,48	dB
TFCI	On	-
Puncturing	18	%

Table C.2.4.1: UL reference measurement channel (384 kbps	erence measurement channel (384 kbps)
---	---------------------------------------

Table C.2.4.2: UL reference measurement channe	I, transport channel parameters (384 kbp	os)
--	--	-----

Parameter	DTCH	DCCH
Transport Channel Number	1	2
Transport Block Size	3 840	100
Transport Block Set Size	3 840	100
Transmission Time Interval	10 ms	40 ms
Type of Error Protection	Turbo Coding	Convolution Coding
Coding Rate	1/3	1/3
Rate Matching attribute	256	256
Size of CRC	16	12

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Figure C.2.4 (informative): Channel coding of UL reference measurement channel (384 kbps)

C.2.5 UL reference measurement channel (768 kbps)

The parameters for the UL measurement channel for 768 kbps are specified in table C.2.5.1 and table C.2.5.2.

Parameter	Level	Unit
Information bit rate	2*384	kbps
DPDCH ₁	960	kbps
DPDCH ₂	960	kbps
DPCCH	15	kbps
DPCCH Slot Format #i	<u>0</u>	
DPCCH/DPDCH power ratio	-11.48	dB
TFCI	On	-
Puncturing	18	%

Table C.2.5.1: UL ref	ference measurement	channel, physical	parameters	(768 kb	ps)
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Table C.2.5.2: UL reference measurement channel, transport channel parameters (768 kbps)

Parameter	DTCH	DCCH
Transport Channel Number	1	2
Transport Block Size	3 840	100
Transport Block Set Size	7 680	100
Transmission Time Interval	10 ms	40 ms
Type of Error Protection	Turbo Coding	Convolution Coding
Coding Rate	1/3	1/3
Rate Matching attribute	256	256
Size of CRC	16	12

CHANGE REQUEST						
¥	<mark>34.121</mark>	CR 172	жrev	, <mark>-</mark> 8	Current vers	sion: 3.8.0 [¥]
For <u>HELP</u> on us	ing this fo	orm, see bottom	of this page of	or look at	the pop-up text	over the X symbols.
Proposed change at	ffects: #	(U)SIM	ME/UE X	Radio	Access Networ	k Core Network
Title: ೫	Correctio	on of UE FDD E	VM definition			
Source: ೫	T1/RF					
Work item code: #					<i>Date:</i>	23 May, 2002
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Reason for change:	ж <mark>Def</mark> 25.1	inition of EVM a 101 CR113 (app	re inconsister proved in RAN	nt in 34.1 I#12).	21 and 25.101.	This 34.121 CR covers
Summary of change	e: ೫ <mark>Def</mark> i	inition of EVM is	s changed.			
Consequences if not approved:	ж <mark>34.</mark> 1	21 and 25.101	are inconsiste	ent.		
Clauses affected:	¥ <mark>5.13</mark>	3.1				
Other specs affected:	# C	Other core speci est specification D&M Specification	fications ns ons	¥		
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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.13 Transmit Modulation

5.13.1 Error Vector Magnitude (EVM)

5.13.1.1 Definition and applicability

The Error Vector Magnitude is a measure of the difference between the reference waveform and the measured waveform. This difference is called the error vector. Both waveforms pass through a matched Root Raised Cosine filter with bandwidth 3,84 MHz and roll-off $\alpha \square = 0,22$. 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.

The Error Vector Magnitude (EVM) is a measure of the difference between the measured waveform and the theoretical modulated waveform (the error vector). It is the square root of the ratio of the mean error vector power to the mean reference signal power expressed as a %. The measurement interval is one timeslot.

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

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CHANGE REQUEST						
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For <u>HELP</u> on u	sing this fo	orm, see bottom	of this page or	look at the	pop-up text	over the X symbols.
Proposed change a	affects: ೫	3 (U)SIM	ME/UE X	Radio Acc	ess Network	Core Network
Title: ೫	Clarificat	tion of Meaning	of FDR			
Source: ೫	T1/RF					
Work item code: अ					Date: ೫	23 May, 2002
Category: # Reason for change Summary of change	F Use <u>one</u> or F (co A (cc B (ac C (fu D (ec Detailed ex be found in e: % The is de CR8	f the following cat rrection) rresponds to a co ldition of feature), nctional modificatio (planations of the a 3GPP <u>TR 21.90</u> purpose of this fined more det 7.	egories: prrection in an ea ion of feature) n) above categorie <u>0</u> . CR is to clarify ailed in 25.101	rlier release) s can y the mean than in 34 dded to abb	Release: # Use <u>one</u> of 2 R96 R97 R98 R99 REL-4 REL-5 ing of FDR. 4.121. This of	R99 the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) Abbreviation of FDR CR covers 25.101 in section 3.3.
Consequences if not approved:	策 The sub	re will be a risk clause 7.10	of misundersta	nding in wh	at is require	d for the BTFD test in
Clauses affected:	ж <mark>3.3</mark>					
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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.

3.3 Abbreviations

For the purpose of the present document, the following additional abbreviations apply:

AFC	Automatic Frequency Control
ASD	Acceleration Spectral Density
ATT	Attenuator
BER	Bit Error Ratio
BLER	Block Error Ratio
BTFD	Blind Transport Format Detection
EVM	Error Vector Magnitude
FDR	False transmit format Detection Ratio. A false Transport Format detection occurs when the
	receiver detects a different TF to that which was transmitted, and the decoded transport block(s)
	for this incorrect TF passes the CRC check(s).
HYB	Hybrid
IM	Intermodulation
ITP	Initial Transmission Power control mode
OBW	Occupied Bandwidth
OCNS	Orthogonal Channel Noise Simulator, a mechanism used to simulate the users or control signals on
	the other orthogonal channels of a downlink
PAR	Peak to Average Ratio
P-CCPCH	Primary Common Control Physical Channel
P-CPICH	Primary Common Pilot Channel
PCDE	Peak Code Domain Error
RBW	Resolution Bandwidth
RRC	Root-Raised Cosine
S-CCPCH	Secondary Common Control Physical Channel
S-CPICH	Secondary Common Pilot Channel
SCH	Synchronisation Channel consisting of Primary and Secondary synchronisation channels
SS	System Simulator; see Annex A for description
TGCFN	Transmission Gap Connection Frame Number
TGD	Transmission Gap Distance
TGL	Transmission Gap Length
TGPL	Transmission Gap Pattern Length
TGPRC	Transmission Gap Pattern Repetition Count
TGSN	Transmission Gap Starting Slot Number

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Proposed change a	Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network						
Title: ೫	Modificatio	ns to the test ca	ase for Rx Spu	irious Emi	ssions in TS3	4.121	
Source: ೫	T1/RF						
Work item code: #					Date: ೫	23 rd May, 2002	
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Other specs affected:	ж О Те О	ther core specif est specification &M Specificatio	ications	8			
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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.

The measured BER, derived in step 1), shall not exceed 0,001.

Table 6.7.3: Test parameters for Inte	ermodulation Characteristics
---------------------------------------	------------------------------

Parameter	Level		Unit
DPCH_Ec	<refsens> +3 dB</refsens>		dBm / 3.84 MHz
Îor	<refî<sub>or> +3 dB</refî<sub>		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)		dBm
	18 (for Pov	ver class 4)	

Table 6.7.4: Test parameters for narrow band intermodulation characteristics

Parameter	Unit	Band II		Band III	
DPCH_Ec	DdBm/3.84 MHz	<refsens>+ 10 dB</refsens>		<refsens>+ 10 dB</refsens>	
Î _{or}	DdBm/3.84 MHz	<refî<sub>or> + 10 dB</refî<sub>		[<refî<sub>or> +10 dB</refî<sub>	
I _{ouw1} (CW)	dBm	-44		-43	
I _{ouw2} (GMSK)	dBm	-44		-4	43
F _{uw1} (offset)	MHz	3.5	-3.5	3.6	-3.6
F _{uw2} (offset)	MHz	5.9	-5.9	6.0	-6.0
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)			

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

6.8 Spurious Emissions

6.8.1 Definition and applicability

The spurious emissions power is the power of emissions generated or amplified in a receiver that appear at the UE antenna connector.

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

6.8.2 Minimum Requirements

The power of any narrow band CW spurious emission shall not exceed the maximum level specified in table 6.8.1 and table 6.8.2.

Frequency Band	Measurement Bandwidth	Maximum level	Note
30 MHz ≤ f < 1 GHz	100 kHz	-57 dBm	
1 GHz ≤ f ≤ 12,75 GHz	1 MHz	-47 dBm	

Table 6.8.1: General receiver spurious emission requirements

65

Operating band	Frequency Band	Measurement Bandwidth	Maximum level	Note
I	1 920 MHz ≤ f ≤ 1 980 MHz	3,84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	2 110 MHz \leq f \leq 2 170 MHz	3,84 MHz	-60 dBm	UE receive band
II	1850 MHz ≤ f ≤ 1910 MHz	3.84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	1930 MHz ≤ f ≤ 1990 MHz	3.84 MHz	-60 dBm	UE receive band
111	1710 MHz ≤ f ≤ 1785 MHz	3.84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	1805 MHz ≤ f ≤ 1880 MHz	3.84 MHz	-60 dBm	UE receive band

The reference for this requirement is TS 25.101 [1] clause 7.9.1.

6.8.3 Test purpose

To verify that the UE spurious emission meets the specifications described in clause 6.8.2.

Excess spurious emissions increase the interference to other systems.

6.8.4 Method of test

6.8.4.1 Initial conditions

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

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

- 1) Connect a spectrum analyzer (or other suitable test equipment) to the UE antenna connector as shown in figure A.8.
- 2) RF parameters are setup according to table <u>E.3.2.2</u>[TBD].
- 3) A call is set up according to the setup procedure specified in TS34.108 [3] sub clause 7.3.3, with the following exceptions for information elements in System Information Block type3.

Information Element	Value/Remark
- Cell selection and re-selection info	
- CHOICE mode	<u>FDD</u>
- Sintrasearch	<u>0 dB</u>
- Sintersearch	<u>0 dB</u>
- RAT List	This parameter is configurable
- Ssearch,RAT	<u>0 dB</u>
 Maximum allowed UL TX power 	Power level where Pcompensation=0

- 3) UE shall be in CELL_FACH state.
- 4) Neighbour cell list shall be empty. HCS is not used.
- 5) The timer T305 shall be set to ∞, so that no cell update is triggered during the measurement.
- 6) Set Qrxlevmin to 115 dBm and Qqualmin to 24 dB.
- 7) Set UE_TXPWR_MAX_RACH such that Pcompensation = 0.
- 8) Set S_{intersearch}, S_{intrasearch} and Ssearch_{RAT m} to zero.

Release 1999

NOTE: The setup procedure (3) sets the UE into the CELL FACH state. With this state the CELL_FACH state (3) in combination with the signalling parameters (4), (5), (6), (7), (8) and the SS level (2) it is ensured that UE continuously monitors receives the S-CCPCH and no cell reselections are performed [see 3GPP TS 25.304, clauses 5.2.3.and 5.2.6]. No transmission of the UE will interfere the measurement.

6.8.4.2 Procedure

1) Sweep the spectrum analyzer (or equivalent equipment) over a frequency range and measure the average power of spurious emission.

6.8.5 Test requirements

The all measured spurious emissions, derived in step 1), shall not exceed the maximum level specified in table 6.8.3 and table 6.8.4.

Frequency Band	Measurement Bandwidth	Maximum level	Note
30 MHz ≤ f < 1 GHz	100 kHz	-57 dBm	
1 GHz \leq f \leq 12,75 GHz	1 MHz	-47 dBm	

Table 6.8.3: General receiver spurious emission requirements

Table 6.8.4: Additional receiver spurious emission requirements	Table 6.8.4:	Additional	receiver	spurious	emission	requirements
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Operating Band	Frequency Band	Measurement Bandwidth	Maximum level	Note
I	1 920 MHz ≤ f ≤ 1 980 MHz	3,84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	2 110 MHz \leq f \leq 2 170 MHz	3,84 MHz	-60 dBm	UE receive band
II	1850 MHz ≤ f ≤ 1910 MHz	3.84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	1930 MHz ≤ f ≤ 1990 MHz	3.84 MHz	-60 dBm	UE receive band
111	1710 MHz \leq f \leq 1785 MHz	3.84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	1805 MHz ≤ f ≤ 1880 MHz	3.84 MHz	-60 dBm	UE receive band

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

7 Performance requirements

7.1 General

The performance requirements for the UE in this clause are specified for the measurement channels specified in annex C and table 7.1.1, the propagation conditions specified in clause 7.1.2 and the Down link Physical channels specified in annex D. Unless stated otherwise, DL power control is OFF.

The method for Block Error Ratio (BLER) measurement is specified in 3GPP TS 34.109 [4].

Annex E (normative): Downlink Physical Channels

E.1 General

This normative annex specifies the downlink physical channels that are needed for setting a connection and channels that are needed during a connection.

E.2 Connection Set-up

Table E.2.1 describes the downlink Physical Channels that are required for connection set up.

Table E.2.1: Downlink Physi	al Channels required	for connection set-up
-----------------------------	----------------------	-----------------------

Physical Channel
CPICH
P-CCPCH
SCH
S-CCPCH
PICH
AICH
DPCH

E.2.1 Measurement without dedicated connection

Table E.2.2 describes the downlink Physical Channels that are required for measurement before connection. This is applicable for the clauses 5.4.1 and 5.5.2.

Table E.2.2: Downlink Physical Channels transmitted without dedicated connection

Physical Channel		Power
Îor	Test dependent pow	/er
CPICH	CPICH_Ec / lor	= -3,3 dB
P-CCPCH	P-CCPCH_Ec / lor	= -5,3 dB
SCH	SCH_Ec / lor	= -5,3 dB
PICH	PICH_Ec / lor	= -8,3 dB
S-CCPCH	S-CCPCH_Ec / lor	= -10,3 dB

E.3 During connection

The following clauses describe the downlink Physical Channels that are transmitted during a connection i.e., when measurements are done. For these measurements the offset between DPCH and SCH shall be zero chips at base station meaning that SCH is overlapping with the first symbols in DPCH in the beginning of DPCH slot structure.

E.3.1 Measurement of Tx Characteristics

Table E.3.1 is applicable for measurements on the Transmitter Characteristics (clause 5) with the exception of clauses 5.3, 5.4.1, 5.4.4 and 5.5.2.

NOTE: Applicability to clause 5.7 (Power setting in uplink compressed mode) is FFS.

Physical Channel	Power
Îor	–93 dBm / 3,84MHz
CPICH	CPICH_Ec / DPCH_Ec = 7 dB
P-CCPCH	$P-CCPCH_Ec/DPCH_Ec = 5 dB$
SCH	SCH_Ec / DPCH_Ec = 5 dB
PICH	PICH_Ec / DPCH_Ec = 2 dB
DPCH	–103,3 dBm / 3,84MHz

Table E.3.1: Downlink Physical Channels transmitted during a connection

E.3.2 Measurement of Rx Characteristics

Table E.3.2<u>1</u> is applicable for measurements on the Receiver Characteristics (clause 6) with the exception of clauses 6.3 and 6.8.

Table E.3.2.1: Downlink Physical Channels transmitted during a connection

Physical Channel	Power		
CPICH	CPICH_Ec / DPCH_Ec	= 7 dB	
P-CCPCH	P-CCPCH_Ec/ DPCH_Ec	= 5 dB	
SCH	SCH_Ec / DPCH_Ec	= 5 dB	
PICH	PICH_Ec / DPCH_Ec	= 2 dB	
DPCH	Test dependent power		

Table E.3.2.2 describes the downlink Physical Channels that are required for the test of Spurious Emissions (clause 6.8). The UE is in the CELL FACH state during the measurement.

Table E.3.2.2: Downlink Physical Channels transmitted during the measurement for Rx Spurious Emissions

Physical Channel	Power		
<u>CPICH</u>	<u>–96 dBm / 3,84MHz</u>		
P-CCPCH	P-CCPCH_Ec/ CPICH_Ec	= -2 dB	
<u>SCH</u>	SCH_Ec/CPICH_Ec	<u>= -2 dB</u>	
<u>PICH</u>	PICH_Ec / CPICH_Ec	<u>= -5 dB</u>	

E.3.3 Measurement of Performance requirements

Table E.3.3 is applicable for measurements on the Performance requirements (clause 7), including clauses 6.3 and 5.4.4, excluding clauses 7.6.1 and 7.6.2.

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

5.3.4.2 Procedure

- 1) Set and send continuously Up power control commands to the UE until the UE reaches its maximum output power.
- 2) Measure the frequency error delta f, at the UE antenna connector using the Global In-Channel-Tx-test (annex B).

5.3.5 Test Requirements

For all measurements, the frequency error, derived in step 2), shall not exceed $\pm(0,1 \text{ ppm} + 10 \text{ Hz})$.

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

5.4 Output Power Dynamics in the Uplink

Power control is used to limit the interference level.

5.4.1 Open Loop Power Control in the Uplink

5.4.1.1 Definition and applicability

Open loop power control in the uplink is the ability of the UE transmitter to set its output power to a specific value. This function is used for PRACH transmission and based on the information from Node B using BCCH and the downlink received signal power level of the CPICH. The information from Node B includes transmission power of CPICH and uplink interference power level.

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

5.4.1.2 Minimum requirements

The UE open loop power is defined as the mean power in a timeslot or ON power duration, whichever is available.

The UE open loop power control tolerance is given in table 5.4.1.1.

Table 5.4.1.1: Open loop power control tolerance

Normal conditions	±9 dB
Extreme conditions	±12 dB

The reference for this requirement is TS 25.101 [1] clause 6.4.1.

5.4.1.3 Test purpose

The power measured by the UE of the received signal and the signalled BCCH information are used by the UE to control the power of the UE transmitted signal with the target to transmit at the lowest power acceptable for proper communication.

The test stresses the ability of the receiver to measure the received power correctly over the receiver dynamic range.

The test purpose is to verify that the UE open loop power control tolerance does not exceed the described value shown in table 5.4.1.1.

An excess error of the open loop power control decreases the system capacity.

5.4.1.4 Method of test

5.4.1.4.1 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: low range, mid range, high range; see clause G.2.4.

- 1) Connect the SS to the UE antenna connector as shown in figure A.1.
- 2) A call is set up according to the Generic call setup procedure, and \hat{I}_{or} is set up according to table 5.4.1.2. The relative power level of downlink physical channels to I_{or} are set up according to clause E.2.1. The RACH procedure within the call setup is used for the test.

See TS 34.108 [3] for details regarding generic call setup procedure.

Table 5.4.1.2: Test parameters for Open Loop Power Control (UE)

Parameter	Level / Status	Unit	
Î _{or}	See table 5.4.1.3	dBm / 3,84 MHz	

Table 5.4.1.3: Test parameters for Open Loop Power Control (SS)

Parameter	RX Upper dynamic end	RX-middle	RX-Sensitivity level			
Î _{or} (note 3)	–25,0 dBm / 3,84 MHz	–65,7 dBm / 3,84 MHz	–106,7 dBm / 3,84 MHz			
CPICH_RSCP (notes 3 and 4)	–28,3 dBm	-28,3 dBm -69 dBm -110 dBm				
Primary CPICH DL TX power	+19 dBm	+28 dBm	+19 dBm			
Simulated path loss = Primary	+47,3 dB	+97 dB	+129 dB			
CPICH DL TX power –						
UL interference	-75 dBm	–101 dBm	–110 dBm			
Constant Value	-10 dB	-10 dB	-10 dB			
Expected nominal UE TX	-37,7 dBm -14 dBm +9 dBm (no					
power (note 5)						
NOTE 1: While the SS transmit	1: While the SS transmit power shall cover the receiver input dynamic range, the logical parameters: Primary					
CPICH DL TX power,	CPICH DL TX power, UL interference, Constant Value are chosen to achieve a UE TX power, located within					
the IX output power	the TX output power dynamic range of a class 4 UE.					
NOTE 2: Nominal TX output po	: Nominal IX output power 9 dBm allows to check the open loop power algorithm within the entire tolerance					
range (9 dBm \pm 12 dE	range (9 dBm \pm 12 dB; 9 dBm \pm 12 dB = 21 dBm = max power class 4).					
NOTE 3. The power level of 5-	The power level of 5-CCPCH should be defined because 5-CCPCH is transmitted during Preamble RACH					
	transmission period. The power level of 5-CCPCH is temporarily set to $-10,3$ dB relative to 1_{0r} . However, it					
Is necessary to check	is necessary to check whether the above S-CCPCH level is enough to establish a connection with the					
	reference measurement channels.					
NOTE 4: The purpose of this p	The purpose of this parameter is to calculate the Expected nominal UE 1X power.					
NOTE 5: The Expected nomina	The Expected nominal UE TX power is calculated by using the equation in the clause 8.5.9/ Open Loop					
Power Control of 152						

5.4.1.4.2 Procedure

- 1) 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 5.4.1.3 (-25 dBm / 3,84 MHz).
- 2) Measure the first RACH preamble mean power of the UE.
- 3) Repeat the above measurement for all SS levels in table 5.4.1.3.

5.4.1.5 Test requirements

The deviation with respect to the Expected nominal UE TX power (table 5.4.1.3), derived in step 2), shall not exceed the prescribed tolerance in table 5.4.1.1.

5.5.1.2 Minimum Requirements

The requirement for the transmit OFF power shall be less than -56 dBm.

The normative reference for this requirement is TS 25.101 [1] clause 6.5.1.1.

5.5.1.3 Test purpose

To verify that the UE transmit OFF power is less than -56 dBm.

An excess transmit OFF power increases the interference to other channels, and decreases the system capacity.

5.5.1.4 Method of test

This test is covered by clause 5.5.2 Transmit ON/OFF Time mask.

5.5.1.5 Test requirements

The measured RRC filtered mean power shall be less than -55 dBm.

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

5.5.2 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 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 tolerand	ce for RACH preamble ramping,
and between final RACH preamble and	RACH message part

Power difference size ∆P [dB]	Transmitter power difference tolerance [dB]
0	±1
1	±1
2	±1,5
3	±2
$4 \le \Delta P \le 10$	±2,5
$11 \leq \Delta P \leq 15$	±3,5
$16 \le \Delta P \le 20$	±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 shown in figure 5.5.1 and figure 5.5.2.

An excess error of transmit ON/OFF response increases the interference to other channels, or increases transmission errors in the up link 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) A call is set up according to the Generic call setup procedure, and \hat{I}_{or} is are 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.

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.

See TS 34.108 [3] for details regarding generic call setup procedure.

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

Parameter	Level / Status	Unit
Î _{or}	See table 5.5.2.3	dBm / 3,84 MHz

Parameter	Power Class 1	Power Class 2	Power Class 3	Power Class 4	Unit	
Î _{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						

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

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 8.5.97 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).

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

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

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

- 3) Measure the RRC filtered mean power centered on the assigned channel frequency.
- 4) Calculate the ratio of the power 2) with respect to 3) in dBc.

5.9.5 Test requirements

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

∆f	in MHz (note 1)	Additional requirements Band II	Measurement bandwidth		
	2,5 to 3,5	$\left\{-33.5 - 15 \cdot \left(\frac{\Delta f}{MHz} - 2.5\right)\right\} dB$	^c -15 dBm	30 kHz (note 2)	
3,5 to 7,5 $\left\{-33.5 - 1 \cdot \left(\frac{\Delta f}{MHz} - 3.5\right)\right\} dBc -13 \text{ dBm} 1 \text{ MHz (note}$					
	7,5 to 8,5	$\left\{-37.5 - 10 \cdot \left(\frac{\Delta f}{MHz} - 7.5\right)\right\} dB$	^c -13 dBm	1 MHz (note 3)	
8,5 to 12,5 -47,5 dBc -13 dBm 1 MHz (note					
 NOTE 1: ∆f 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 ∆f equals to 2,515 MHz and 3,485 MHz. NOTE 3: The first and last measurement position with a 1 MHz filter is at ∆f 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 lower	the resolution bandwidth i integrated over the measu of the measurement band limit shall be -48.5 dBm/3	s smaller than the measurement b urement bandwidth in order to obta width. 84 MHz or which ever is higher	andwidth, the res ain the equivalent	sult should be noise bandwidth	

Table 5.9.2: Spectrum Emission Mask Requiremen	Table 5.9.2: S	Spectrum	Emission	Mask	Requiremen
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NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

5.10 Adjacent Channel Leakage Power Ratio (ACLR)

5.10.1 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 to all types of UTRA for the FDD UE.

5.10.2 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 5.10.1.

Power Class	UE channel	ACLR limit
3	+5 MHz or –5 MHz	33 dB
<u>3</u>	+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.

5.10.3 Test purpose

To verify that the UE ACLR-due to modulation does not exceed prescribed limit shown in table 5.10.1.

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

5.10.4 Method of test

5.10.4.1 Initial conditions

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

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

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

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

5.10.4.2 Procedure

- 1) Set and send continuously Up power control commands to the UE until the UE output power shall be maximum level.
- 2) Measure the RRC filtered mean power.
- 3) Measure the RRC filtered mean power of the first adjacent channels and the second adjacent channels.
- 4) Calculate the ratio of the power between the values measured in '2)'and '3)'.

5.10.5 Test requirements

If the measured adjacent channel RRC filtered mean power, derived in step 3), is greater than -5048.5 dBm then the measured ACLR, derived in step 4), shall be higher than the limit in table 5.10.2.

Power Class	UE channel	ACLR limit
3	+5 MHz or –5 MHz	32,2 dB
<u>3</u>	+10 MHz or –10 MHz	42,2 dB
4	+5 MHz or –5 MHz	32,2 dB
<u>4</u>	+10 MHz or –10 MHz	42,2 dB

Table 5.10.2: UE ACLR-due to modulation

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.

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.2.1 Transmitter

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	0.1 dB (1 dB and 0 dB step)
uplink - One step	0.15 dB (2 dB step)
	0.2 dB (3 dB step)
5.4.2 Inner loop power control in the	[0.3] dB
uplink - seven and ten steps	
5.4.3 Minimum Output Power	1.0 dB
5.4.4 Out-of-synchronisation handling of	0.4 dB
output power: $DPCCH _ E_c$	
5.4.4 Out-of-synchronisation handling of	0 ms
output power: transmit ON/OFF time	
5.5.1 Transmit OFF power	1.0 dB
5.5.2 Transmit ON/OFF time mask	On power +0.7 dB / -1.0 dB
(dynamic case)	
	Off power TT [] dB
5.6 Change of TFC: power control step	0.3 dB
size	
5.7 Power setting in uplink compressed	See subset of 5.4.2
mode:-UE output power	
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
	1.5 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	1.0 dB
domain error	

Table F.2.1: Test Tolerances for transmitter tests.

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.

Test	Minimum Requirement in TS 25,101	Test Tolerance	Test Requirement in TS 34.121
		(TT)	
5.2 Maximum Output Power	Power class 1 (33 dBm) Tolerance = $\pm 1/-3$ dB Power class 2 (27 dBm) Tolerance = $\pm 1/-3$ dB Power class 3 (24 dBm) Tolerance = $\pm 1/-3$ 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 = $\pm(0.1$ 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	0.25dB 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

Table F.4.1: Derivation of Test Requirements (Transmitter tests)

Test	Minimum Requirement in TS	Test	Test Requirement in TS 34.121
	23.101	(TT)	
5.4.4 Out-of- synchronisation handling of output power:	$\frac{DPCCH_E_c}{I_{or}}$ levels $\frac{I_{or}}{AB: -22 \text{ dB}}$ BD: -28 dB DE: -24 dB EF: -18 dB transmit ON/OFF time 200ms $\frac{DPDCH_E_c}{I_{or}} = -16.6 \text{ dB}$ $I_{oc} - 60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.4 dB for $\frac{DPCCH_E}{I_{or}}$ 0 ms for timing measurem ent	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 $\frac{DPDCH_E_c}{I_{or}} = -16.6 \text{ dB}$ $\frac{DPCCH_E_c}{I_{or}} = -1 \text{ dB}$ $\frac{DPCCH_E_c}{I_{or}} \text{ levels:}$ 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) 5.6 Change of TFC:	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 0.3 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 Formula: Upper Tolerance limit + TT
power control step size			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 Require 25.101	ement in TS	Test Tolerance	Test Requirement in	TS 34.121
			(TT)		
5.8 Occupied Bandwidth	bandwidth shall be less than 5 MHz based on a chip rate of		0 kHz	Formula: occupied channel bandwidth: +	
	3.84 Mcps.			occupied channel bandwid	th = 5.0 MHz
5.9 Spectrum emission	Minimum requireme	nt defined in	1.5 dB	Formula: Minimum require	ment + 11
mask	The lower limit shall	be –50 dBm		Add 1.5 to Minimum require	ement entries
	/ 3.84 MHz or which	ever is		in TS25.101 Table 6.10.	
	higher.			Additional requirements for	ed for Band II due
				to FCC regulatory requirem	nents.
				The lower limit shall be –48	3.5 dBm / 3.84
5.10 Adjacent Channel	If the adjacent chan	nel power is	1.5 dB	Formula: Absolute power t	nreshold + TT
Leakage Power Ratio	greater than -50 dB	m then the			
(ACLR)	ACLR shall be higher	<u>er than the</u> ow			
	Power Classes 3 an	id 4:	0.8 dB	Formula: ACLR limit - TT	
	UE channel +5 MHz	: or -5 MHz,		Power Classes 3 and 4:	
	UE channel +10 MH	lz or -10		limit: 32.2 dB	MHZ, ACLR
	MHz, ACLR limit: 43	3 dB		UE channel +10 MHz or -1	0 MHz, ACLR
5.44.0				limit: 42.2 dB	·
Emissions				Add zero to all the values of Mi	
				Requirements in table 5	5.11.1a and
	Erequency Band	Minimum		5.11.10. Frequency Band	Minimum
	Troquency Dana	Requireme			Requirement
	9 kHz < f < 150	nt _36dBm	0 dB	0kHz ≤ f ∠ 1GHz	_36dBm
	kHz	/1kHz	0 00		/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
	IVITIZ	7100012			71001112
	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
			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 \leq f \leq 935 MHz	–67dBm /100kHz
	935 MHz < f ≤ 960	-79dBm	0 dB	935 MHz < f ≤ 960 MHz	-79dBm
	MHz	/100kHz			/100kHz
	1805 MHz ≤ f ≤ 1880 MHz	–71dBm /100kHz	0 dB	1805 MHz ≤ f ≤ 1880 MHz	–71dBm /100kHz
5.12 Transmit	Intermodulation Pro	duct	0 dB	Formula: CW interferer leve	el – TT/2
Internooulation	10MHz -41 dBc			Intermod Products limits re	main
	CW Interferer level :	= -40 dBc		unchanged.	
				CW interferer level = -40 d	Bc
5.13.1 Transmit	The measured EVM	shall not	0%	Formula: EVM limit + TT	
modulation: EVM	exceed 17.5%.	code	10dB	EVM limit = 17.5 %	
modulation: peak code	domain error shall n	ot exceed	1.0 00	Peak code domain error =	-14 dB
domain error	-15 dB.				

235