# Technical Specification Group Terminals Meeting #19, Birmingham, UK, 12-14 March 2003

Source: T1

Title: CR's to TS 34.122 v3.10.0 and v4.6.0 for approval

Agenda item: 5.1.3

**Document for: Approval** 

This document contains 19 CRs to TS 34.122 v3.10.0 and 24 CRs to TS 34.122 v4.6.0. These CRs have been agreed by T1 and are put forward to TSG T for approval.

# CRs related to new RRM test cases R99:

Spec	CR	Rev	Release	Subject	Cat	Version	Version	Doc-2nd-	Work
						Current	-New	Level	item
34.122	124	-	R99	RRC connection re-establishment test cases Rel99	F	3.10.0	3.11.0	T1-030135	
34.122	126	-	R99	Transport Format Combination Selection test case Rel99	F	3.10.0	3.11.0	T1-030137	
34.122	128	-	R99	Timing Advance test case Rel99	F	3.10.0	3.11.0	T1-030139	
34.122	130	-	R99	Event-triggered reporting in AWGN test case Rel99	F	3.10.0	3.11.0	T1-030141	
34.122	132	-	R99	Event 1H and 1I triggered reporting in AWGN propagation condition test case Rel99	F	3.10.0	3.11.0	T1-030143	
34.122	134	-	R99	on Correct reporting of neighbours in fading propagation condition test case Rel99	F	3.10.0	3.11.0	T1-030145	
34.122	136	-	R99	Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition test case Rel99	F	3.10.0	3.11.0	T1-030147	
34.122	138	-	R99	Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition test case Rel99	F	3.10.0	3.11.0	T1-030149	
34.122	142	-	R99	CPICH RSCP Measurement test case Rel99	F	3.10.0	3.11.0	T1-030153	
34.122	144	-	R99	Timeslot ISCP Measurement test case Rel99	F	3.10.0	3.11.0	T1-030155	
34.122	146	-	R99	UTRA carrier RSSI Measurement test case Rel99	F	3.10.0	3.11.0	T1-030157	
34.122	148	-	R99	SFN-SFN type 1 test case Rel99	F	3.10.0	3.11.0	T1-030159	
34.122	150	-	R99	SFN-CFN observed time difference measurement test case Rel99	F	3.10.0	3.11.0	T1-030161	
34.122	152	-	R99	TDD-GSM handover case Rel99	F	3.10.0	3.11.0	T1-030163	

# CRs related to new RRM test cases Rel-4:

Spec	CR	Rev	Release	Subject	Cat	Version	Version	Doc-2nd-	Work
						Current	-New	Level	item
34.122	125	-	Rel-4	RRC connection re-establishment test cases Rel4	Α	4.6.0	4.7.0	T1-030136	TEI
34.122	127	-	Rel-4	Transport Format Combination Selection test case Rel4	Α	4.6.0	4.7.0	T1-030138	TEI
34.122	129	-	Rel-4	Timing Advance test case Rel4	Α	4.6.0	4.7.0	T1-030140	TEI
34.122	131	-	Rel-4	Event-triggered reporting in AWGN test case Rel4	Α	4.6.0	4.7.0	T1-030142	TEI
34.122	133	-	Rel-4	Event 1H and 1I triggered reporting in AWGN propagation condition test case Rel4	Α	4.6.0	4.7.0	T1-030144	TEI
34.122	135	-	Rel-4	Correct reporting of neighbours in fading propagation condition test case Rel4	Α	4.6.0	4.7.0	T1-030146	TEI
34.122	137	-	Rel-4	Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition test case Rel4	Α	4.6.0	4.7.0	T1-030148	TEI
34.122	139	-	Rel-4	Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition test case Rel4	Α	4.6.0	4.7.0	T1-030150	TEI
34.122	143	-	Rel-4	CPICH RSCP Measurement test case Rel4	Α	4.6.0	4.7.0	T1-030154	TEI
34.122	145	-	Rel-4	Timeslot ISCP Measurement test case Rel4	Α	4.6.0	4.7.0	T1-030156	TEI
34.122	147	-	Rel-4	UTRA carrier RSSI Measurement test case Rel4	Α	4.6.0	4.7.0	T1-030158	TEI
34.122	149	-	Rel-4	SFN-SFN type 1 test case Rel4	Α	4.6.0	4.7.0	T1-030160	TEI
34.122	151	-	Rel-4	SFN-CFN observed time difference measurement test	Α	4.6.0	4.7.0	T1-030162	TEI

				case Rel4					
34.122	153	-	Rel-4	TDD-GSM handover case Rel4	Α	4.6.0	4.7.0	T1-030164	TEI

# CRs related to maintenance of R99:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version -New	Doc-2nd- Level	Work item
34.122	140	-	R99	Corrections to TDD Cell Reselection and Handover Test Cases Rel99	F	3.10.0	3.11.0	T1-030151	
34.122	154	-	R99	Correction to Cell Re-selection in CELL_PCH and URA_PCH test cases Rel99	F	3.10.0	3.11.0	T1-030165	
34.122	156	-	R99	Reference and measurement performance sSub- sections updates in 34.122 Rel99	F	3.10.0	3.11.0	T1-030167	
34.122	158	-	R99	Corrections to P-CCPCH RSCP test case Rel99	F	3.10.0	3.11.0	T1-030169	
34.122	160	-	R99	Statistical testing of RRM delay performance in Annex F.6.2 Rel99	F	3.10.0	3.11.0	T1-030176	

# CRs related to maintenance of Rel-4:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version -New	Doc-2nd- Level	Work item
34.122	141	-	Rel-4	Corrections to TDD Cell Reselection and Handover Test Cases Rel4	A	4.6.0	4.7.0	T1-030152	TEI
34.122	155	-	Rel-4	Correction to Cell Re-selection in CELL_PCH and URA_PCH test cases Rel4	Α	4.6.0	4.7.0	T1-030166	TEI
34.122	157	-	Rel-4	Reference and measurement performance sub-sections updates in 34.122 Rel4	Α	4.6.0	4.7.0	T1-030168	TEI
34.122	159	-	Rel-4	Corrections to P-CCPCH RSCP test case Rel4	Α	4.6.0	4.7.0	T1-030170	TEI
34.122	161	-	Rel-4	Statistical testing of RRM delay performance in Annex F.6.2 Rel4	Α	4.6.0	4.7.0	T1-030177	TEI

# CRs related to Low Chip Rate TDD:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version -New	Doc-2nd- Level	Work item
34.122	162	-	Rel-4	Addition of LCR Event 1G test	F	4.6.0	4.7.0	T1-030181	LCRT DD
34.122	163	-	Rel-4	Addition of LCR events 1H and 1I	F	4.6.0	4.7.0	T1-030182	LCRT DD
34.122	164	-	Rel-4	Addition of LCR neighbour monitoring	F	4.6.0	4.7.0	T1-030183	LCRT DD
34.122	165	-	Rel-4	Updates to LCR TDD Hand-over inter and intra frequency test cases	F	4.6.0	4.7.0	T1-030184	LCRT DD
34.122	166	-	Rel-4	Updates to tables in the TDD RX performance test	F	4.6.0	4.7.0	T1-030185	LCRT DD

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

						CR-Form
		CHAN	GE REQ	UEST	•	
ж	34.122	CR 124	жrev	<b>-</b> #	Current vers	ion: 3.10.0 <sup>#</sup>
For <u><b>HELP</b></u> on	using this fo	orm, see bottom o	of this page or	look at th	e pop-up text	over the % symbols.
Proposed change	affects:	UICC apps#	ME X	Radio A	ccess Networ	k Core Network
Title:	€ RRC cor	nnection re-estab	lishment test	cases		
Source:	₭ T1-RF					
					Do40 : 90	12/01/2002
Work item code: 8	<b>ж</b>				Date: ₩	13/01/2003
Category:	F (co A (co B (ac C (fu D (ec Detailed ex	f the following cates rrection) rresponds to a condition of feature), nctional modification itorial modification splanations of the anatons o	rection in an ea n of feature) ) bove categorie		2 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) (Release 6)
Reason for chang					lishment in U	TRA TDD are missing
	fron	n the current vers	ion of TS 34.	122.		
Summary of char	nge: 郑 <mark>Intr</mark>	oduction of RRC	connection re	-establish	ment test case	es for UTRA TDD
Consequences if not approved:	₩ Inco	onsistency 34.122	2 and 25.123			
Clauses affected:	光 <mark>8.4.</mark>	1				
Other specs affected:	¥ X	Other core spe Test specificat	ons	ж		

# 8.4.1 RRC connection re-establishment delay

# 8.4.1.1 RRC re-establishment delay +to a known target cell

(FFS)

## 8.4.1.1.1 Definition and applicability

For UTRA TDD, the UE re-establishment delay  $T_{\text{UE-RE-ESTABLISH-REQ}}$  is defined as the time between the moment when radio link failure is considered by the UE to when the UE starts sending the RRC CELL UPDATE message to the UTRAN on RACH.

 $\underline{T_{UE-RE-ESTABLISH-REQ}}$  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 a radio link connected to the cell during the last 5 seconds
- the cell has been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD UE.

## 8.4.1.1.2 Minimum requirement

The RRC re-establishment delay T<sub>RE-ESTABLISH</sub> to a known target cell shall be less than 2 s.

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

NOTE: The RRC re-establishment delay in this test case can be expressed as,

 $T_{\text{RE-ESTABLISH}} = T_{\text{RRC-RE-ESTABLISH}} + T_{\text{UE-RE-ESTABLISH-REO-KNOWN}}$ 

where,

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

 $T_{\text{UE-RE-ESTABLISH-REQ-KNOWN}} = 50 \text{ms} + T_{\text{SEARCH-KNOWN}} + T_{\text{SL}} + T_{\text{RA}}$ 

and,

N<sub>313</sub> Equal to 20 and therefore resulting in 200 ms delay.

 $T_{313}$  Equal to 0 s.

T<sub>SEARCH-KNOWN</sub> Equal to 100 ms

Equal to 1280 ms, the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure performance value of system information blocks defined in TS 25.331 [9] for a UTRAN cell.

T<sub>RA</sub> Equal to 40 ms, the additional delay caused by the random access procedure.

This gives a total of 1820ms, allow 2 s in the test case.

#### 8.4.1.1.3 Test purpose

The test purpose is to verify that the RRC re-establishment delay to a known target cell is within the specified limits.

#### 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. The maximum repetition period of the relevant system info blocks that needs to be received by the UE in order to camp on a cell shall be 1280 ms. DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with time durations of T1 and T2 respectively.

<u>During T1</u>, the DL DPCH in cell 1 shall be transmitted in timeslot 2 and the UL DPCH in cell 1 shall be transmitted in timeslot 10. At the beginning of time period T2, the DPCH shall be removed.

Cell 1 and cell shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.4.1.1: General test parameters for RRC re-establishment delay, known target cell case

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	Comment
DCH parameters		DL reference measurement	As specified in TS 25.102 section
		<u>channel 12.2 kbps</u>	<u>A.2.2</u>
Power Control		<u>On</u>	
Target quality value on DTCH	BLER	<u>0.01</u>	
Initial Active cell		Cell 1	Cell 2 shall be included in the
<u>conditions</u> <u>Neighbour cell</u>		Cell 2	monitored set in Cell 1.
Final Active cell		Cell 2	
<u>conditions</u>			
Access Service Class (ASC#0)	_	<u>1</u>	Selected so that no additional
- Persistence value			delay is caused by the random
			access procedure. The value
			shall be used for all cells in the
			test.
<u>N313</u>		<u>20</u>	
<u>N315</u>		<u>1</u>	
<u>T313</u>	Seconds	<u>0</u>	
T <sub>SI</sub>	<u>ms</u>	<u>1280</u>	
Monitored cell list size		24 TDD neighbours on Channel	
		<u>1</u>	
Reporting frequency	Seconds	<u>4</u>	
<u>T1</u>		<u>10</u>	
<u>T2</u>		<u>6</u>	

Table 8.4.1.2: Cell specific parameters for RRC re-establishment delay test, known target cell case

<u>Parameter</u>	<u>Unit</u>		Ce	<u>II 1</u>			Ce	<u>II 2</u>	
Timeslot Number		(	<u>)</u>		3		<u>0</u>		<u>3</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>
UTRA RF Channel			Char	nel 1			Char	nel 1	
<u>Number</u>			Onai	iiici i			Onai	iiici i	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>	<u>n.a.</u>	<u>n.a.</u>	<u>-3</u>	<u>-3</u>	<u>n.a.</u>	<u>n.a.</u>
SCH_Ec/lor	<u>dB</u>	<u>-9</u>	<u>9</u>	<u>-9</u>	<u>-9</u>	<u>9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>
SCH_t <sub>offset</sub>		0	0	0	0	<u>15</u>	<u>15</u>	<u>15</u>	<u>15</u>
PICH_Ec/lor	<u>dB</u>	n.a.	n.a.	<u>-3</u>	<u>-3</u>	n.a.	n.a.	<u>-3</u>	<u>-3</u>
OCNS_Ec/lor	<u>dB</u>	<u>-3,12</u>							
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>3</u>	<u>-13</u>	<u>3</u>	<u>-13</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>
$I_{oc}$	<u>dBm/ 3.84</u> <u>MHz</u>				_=	<u>70</u>			
P-CCPCH_RSCP	<u>dB</u>	<u>-70</u>	<u>-86</u>	<u>n.a.</u>	<u>n.a.</u>	<u>-68</u>	<u>-68</u>	<u>n.a.</u>	<u>n.a.</u>
Propagation Condition					<u>AW</u>	GN			

## 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 [3] (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) 10 s after step3 has completed, the parameters are changed to that as described for T2.
- 6) If the UE responds on cell 2 within 2.0 s from the beginning of time period T2 with a CELL UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds from the beginning of time period T2, the RF parameters are set up according to T1.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.

10) Repeat step 3-9 [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in TS 25.331 [9] for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 1920ms (Minimum requirement + 100ms), allow 2 s in the test case.

#### 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 RRC re-establishment delay Tto an unknown target cell

(FFS)

# 8.4.1.2.1 Definition and applicability

For UTRA TDD, the UE re-establishment delay T<sub>UE-RE-ESTABLISH-REQ</sub> is defined as the time between the moment when radio link failure is considered by the UE to when the UE starts sending the RRC CELL UPDATE message to the UTRAN on RACH.

 $\underline{T_{UE-RE-ESTABLISH-REQ}}$  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 a radio link connected to the cell during the last 5 seconds
- the cell has been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD UE.

# 8.4.1.2.2 Minimum requirement

The RRC re-establishment delay T<sub>RF-FSTABLISH</sub> to an unknown target cell shall be less than 3,7 s.

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

NOTE: The RRC re-establishment delay in this test case can be expressed as,

 $T_{\text{RE-ESTABLISH}} = T_{\text{RRC-RE-ESTABLISH}} + T_{\text{UE-RE-ESTABLISH-REQ-UNKNOWN}}$ 

#### where,

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

Tue-re-establish-req-known=50ms+Tsearch-unknown \*NF + Tsl + Tras

and,

N<sub>313</sub> Equal to 20 and therefore resulting in 200 ms delay.

 $T_{313}$  Equal to 0 s.

T<sub>SEARCH-UNKNOWN</sub> Equal to 800 ms

NF Equal to 2, the number of different frequencies in the monitored set of cell 1.

T<sub>SI</sub> Equal to 1280 ms, the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure performance value of system information blocks defined in TS 25.331 [9] for a UTRAN cell.

T<sub>RA</sub> Equal to 40 ms, the additional delay caused by the random access procedure.

This gives a total of 3320ms, allow 3,7 s in the test case.

#### 8.4.1.2.3 Test purpose

The test purpose is to verify that the RRC re-establishment delay to an unknown target cell is within the specified limits.

#### 8.4.1.2.4 Method of test

#### 8.4.1.2.4.1 Initial conditions

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

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

The test parameters are given in table 8.4.1.3 and table 8.4.1.4 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE in order to camp on a cell shall be 1280 ms. DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with time durations of T1 and T2 respectively.

<u>During T1</u>, the DL DPCH in cell 1 shall be transmitted in timeslot 2 and the UL DPCH in cell 1 shall be transmitted in timeslot 10. At the beginning of time period T2, the DPCH shall be removed.

Cell 1 and cell shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.4.1.3: General test parameters for RRC re-establishment delay, unknown target cell case

<u>Pa</u>	<u>arameter</u>	<u>Unit</u>	<u>Value</u>	Comment
DCH	parameters		DL reference measurement channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Pow	<u>ver Control</u>		<u>On</u>	
Target qual	ity value on DTCH	BLER	<u>0.01</u>	
Initial conditions	Active cell Neighbour cell		Cell 1 Cell 2	Cell 2 shall not be included in the monitored set in Cell 1.
Final conditions	Active cell		Cell 2	
Access Servi - Persistence	ice Class (ASC#0) e value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.

<u>N313</u>		<u>20</u>	
<u>N315</u>		<u>1</u>	
<u>T313</u>	<u>Seconds</u>	<u>0</u>	
<u>T</u> <sub>SI</sub>	<u>ms</u>	<u>1280</u>	
Monitored cell list size		16 TDD neighbours on Channel	
		<u>1</u>	
		16 TDD neighbours on Channel	
		<u>2</u>	
Reporting frequency	<u>Seconds</u>	<u>4</u>	
<u>T1</u>		<u>10</u>	
<u>T2</u>		<u>6</u>	

Table 8.4.1.4: Cell specific parameters for RRC re-establishment delay test, unknown target cell case

<u>Parameter</u>	<u>Unit</u>		Ce	<u>II 1</u>			Ce	II 2	
Timeslot Number		9	)		3		)		3
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
UTRA RF Channel Number			Char	inel 1			Char	nnel 2	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>	n.a.	n.a.	<u>-3</u>	<u>-3</u>	n.a.	n.a.
SCH_Ec/lor	<u>dB</u>	<u>-9</u>							
SCH t <sub>offset</sub>		<u>0</u>	0	<u>0</u>	<u>0</u>	<u>15</u>	<u>15</u>	<u>15</u>	<u>15</u>
PICH_Ec/lor	<u>dB</u>	n.a.	n.a.	<del>3</del>	<u>-3</u>	n.a.	n.a.	<u>-3</u>	<u>-3</u>
OCNS Ec/lor	<u>dB</u>	<u>-3,12</u>							
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>3</u>	<u>-13</u>	<u>3</u>	<u>-13</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>
$I_{oc}$	<u>dBm/ 3.84</u> <u>MHz</u>					<u>70</u>			
P-CCPCH_RSCP	<u>dB</u>	<u>-70</u>	<u>-86</u>	<u>n.a.</u>	<u>n.a.</u>	<u>-68</u>	<u>-68</u>	<u>n.a.</u>	<u>n.a.</u>
Propagation Condition					AW	<u>/GN</u>			

# 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.

[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) 10 s after step3 has completed, the parameters are changed to that as described for T2.
- 6) If the UE responds on cell 2 within 3.7 s from the beginning of time period T2 with a CELL UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds the RF parameters are set up according to T1.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.

# 10)Repeat step 3-9 [TBD] times

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in TS 25.331 [9] for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 3420ms (Minimum requirement + 100ms), allow 3.7s in the test case.

# 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.

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

	CHANGE REQUEST					
	CHANGE REQUEST					
*	34.122 CR 125					
For <u>HELP</u> or	using this form, see bottom of this page or look at the pop-up text over the   ℜ symbols.					
Proposed change affects: UICC apps# ME X Radio Access Network Core Network						
Title:	RRC connection re-establishment test cases					
Source:	ж Т1-RF					
Work item code:	<b>Date:</b> 第 13/01/2003					
Category:	Release: # Rel-4  Use one of the following categories:  F (correction)  A (corresponds to a correction in an earlier release)  B (addition of feature),  C (functional modification)  D (editorial modification)  Detailed explanations of the above categories can be found in 3GPP TR 21.900.  Release: # Rel-4  Use one of the following releases:  2 (GSM Phase 2)  R96 (Release 1996)  R97 (Release 1997)  R98 (Release 1998)  R99 (Release 1999)  Rel-4 (Release 4)  Rel-5 (Release 5)  Rel-6 (Release 6)					
Reason for char	The test cases for RRC connection re-establishment in UTRA TDD (3.84 Mcps option) are missing from the current version of TS 34.122.					
Summary of cha	Introduction of RRC connection re-establishment test cases for UTRA TDD (3.84 Mcps option)					
Consequences i not approved:	# Inconsistency 34.122 and 25.123					
Clauses affected	第 8.4.1					
Other specs affected:	Y N  K X Other core specifications					
Other comments	· X -					

# 8.4.1 RRC connection re-establishment delay

# 8.4.1.1 To a known target cell, 3,84 Mcps TDD option

(FFS).

8.4.1.1.1 RRC re-establishment delay to a known target cell

# 8.4.1.1.1 Definition and applicability

For UTRA TDD, the UE re-establishment delay T<sub>UE-RE-ESTABLISH-REQ</sub> is defined as the time between the moment when radio link failure is considered by the UE to when the UE starts sending the RRC CELL UPDATE message to the UTRAN on RACH.

 $\underline{T_{UE-RE-ESTABLISH-REQ}}$  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 a radio link connected to the cell during the last 5 seconds
- the cell has been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD (3.84 Mcps option) UE.

# 8.4.1.1.1.2 Minimum requirement

The RRC re-establishment delay T<sub>RE-ESTABLISH</sub> to a known target cell shall be less than 2 s.

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

NOTE: The RRC re-establishment delay in this test case can be expressed as,

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

where,

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

 $\underline{T_{\text{UE-RE-ESTABLISH-REQ-KNOWN}}} = 50ms + \underline{T_{\text{SEARCH-KNOWN}}} + \underline{T_{\text{SL}}} + \underline{T_{\text{RA}}}.$ 

and,

N<sub>313</sub> Equal to 20 and therefore resulting in 200 ms delay.

 $T_{313}$  Equal to 0 s.

T<sub>SEARCH-KNOWN</sub> Equal to 100 ms

T<sub>SI</sub> Equal to 1280 ms, the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure performance value of system information blocks defined in TS 25.331 [9] for a UTRAN cell.

 $T_{RA}$  Equal to 40 ms, the additional delay caused by the random access procedure.

This gives a total of 1820ms, allow 2 s in the test case.

#### 8.4.1.1.3 Test purpose

The test purpose is to verify that the RRC re-establishment delay to a known target cell is within the specified limits.

#### 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. The maximum repetition period of the relevant system info blocks that needs to be received by the UE in order to camp on a cell shall be 1280 ms. DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with time durations of T1 and T2 respectively.

During T1, the DL DPCH in cell 1 shall be transmitted in timeslot 2 and the UL DPCH in cell 1 shall be transmitted in timeslot 10. At the beginning of time period T2, the DPCH shall be removed.

Cell 1 and cell shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.4.1.1: General test parameters for RRC re-establishment delay, known target cell case

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	Comment
DCH parameters		DL reference measurement channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial Active cell		<u>Cell 1</u>	Cell 2 shall be included in the
<u>conditions</u> <u>Neighbour cell</u>		Cell 2	monitored set in Cell 1.
Final Active cell		Cell 2	
<u>conditions</u>			
Access Service Class (ASC#0)	Ξ	<u>1</u>	Selected so that no additional
- Persistence value			delay is caused by the random
			access procedure. The value
			shall be used for all cells in the
			test.
N313		<u>20</u>	
<u>N315</u>		1	
<u>T313</u>	Seconds	<u>0</u>	
<u>T<sub>SI</sub></u>	<u>ms</u>	<u>1280</u>	
Monitored cell list size		24 TDD neighbours on Channel	
		<u>1</u>	
Reporting frequency	<u>Seconds</u>	<u>4</u>	
<u>T1</u>		<u>10</u>	
<u>T2</u>		<u>6</u>	

Table 8.4.1.2: Cell specific parameters for RRC re-establishment delay test, known target cell case

<u>Parameter</u>	<u>Unit</u>	Cell 1				<u>Ce</u>	<u>II 2</u>		
Timeslot Number			<u>0</u>	<u>8</u>			0		3
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
UTRA RF Channel			Char	nel 1			Char	nel 1	
Number Poopolity Faller	-ID	0	_			_	_		
PCCPCH Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>	<u>n.a.</u>	<u>n.a.</u>	<u>-3</u>	<u>-3</u>	<u>n.a.</u>	<u>n.a.</u>
SCH_Ec/lor	<u>dB</u>	<u>-9</u>							
SCH_t <sub>offset</sub>		<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>15</u>	<u>15</u>	<u>15</u>	<u>15</u>
PICH_Ec/lor	<u>dB</u>	<u>n.a.</u>	<u>n.a.</u>	<u>-3</u>	<u>-3</u>	<u>n.a.</u>	<u>n.a.</u>	<u>-3</u>	<u>-3</u>
OCNS_Ec/lor	<u>dB</u>	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	<u>-3,12</u>
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>3</u>	<u>-13</u>	<u>3</u>	<u>-13</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>
$I_{oc}$	<u>dBm/ 3.84</u> <u>MHz</u>	<u>-70</u>							
P-CCPCH_RSCP	<u>dB</u>	<u>-70</u>	<u>-86</u>	<u>n.a.</u>	<u>n.a.</u>	<u>-68</u>	<u>-68</u>	n.a.	n.a.
Propagation Condition		<u>AWGN</u>							

#### 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 [3] (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) 10 s after step3 has completed, the parameters are changed to that as described for T2.
- 6) If the UE responds on cell 2 within 2.0 s from the beginning of time period T2 with a CELL\_UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds from the beginning of time period T2, the RF parameters are set up according to T1.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.

10) Repeat step 3-9 [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in TS 25.331 [9] for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 1920ms (Minimum requirement + 100ms), allow 2 s in the test case.

# 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.

# 8.4.1.1.2 RRC re-establishment delay to an unknown target cell

#### 8.4.1.1.2.1 Definition and applicability

For UTRA TDD, the UE re-establishment delay T<sub>UE-RE-ESTABLISH-REQ</sub> is defined as the time between the moment when radio link failure is considered by the UE to when the UE starts sending the RRC CELL UPDATE message to the UTRAN on RACH.

 $\underline{T_{UE-RE-ESTABLISH-REQ}}$  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 a radio link connected to the cell during the last 5 seconds
- the cell has been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD (3.84 Mcps option) UE.

## 8.4.1.1.2.2 Minimum requirement

The RRC re-establishment delay T<sub>RE-ESTABLISH</sub> to an unknown target cell shall be less than 3,7 s.

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

NOTE: The RRC re-establishment delay in this test case can be expressed as,

Tre-establish= Trrc-re-establish+ Tue-re-establish-reo-unknown.

where,

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

Tue-re-establish-req-known=50ms+Tsearch-unknown\*NF+Tsl+Tra.

and,

N<sub>313</sub> Equal to 20 and therefore resulting in 200 ms delay.

 $T_{313}$  Equal to 0 s.

T<sub>SEARCH-UNKNOWN</sub> Equal to 800 ms

NF Equal to 2, the number of different frequencies in the monitored set of cell 1.

T<sub>SI</sub> Equal to 1280 ms, the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure performance value of system information blocks defined in TS 25.331 [9] for a UTRAN cell.

 $T_{RA}$  Equal to 40 ms, the additional delay caused by the random access procedure.

This gives a total of 3320ms, allow 3,7 s in the test case.

8.4.1.1.2.3 Test purpose

The test purpose is to verify that the RRC re-establishment delay to an unknown target cell is within the specified limits.

8.4.1.1.2.4 Method of test

8.4.1.1.2.4.1 Initial conditions

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

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

The test parameters are given in table 8.4.1.3 and table 8.4.1.4 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE in order to camp on a cell shall be 1280 ms. DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with time durations of T1 and T2 respectively.

During T1, the DL DPCH in cell 1 shall be transmitted in timeslot 2 and the UL DPCH in cell 1 shall be transmitted in timeslot 10. At the beginning of time period T2, the DPCH shall be removed.

Cell 1 and cell shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.4.1.3: General test parameters for RRC re-establishment delay, unknown target cell case

Pa	<u>arameter</u>	<u>Unit</u>	<u>Value</u>	<u>Comment</u>
DCH parameters			DL reference measurement channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Pov	ver Control		<u>On</u>	
Target qual	ity value on DTCH	BLER	<u>0.01</u>	
<u>Initial</u>	Active cell		<u>Cell 1</u>	Cell 2 shall not be included in the
conditions	Neighbour cell		Cell 2	monitored set in Cell 1.
<u>Final</u>	Active cell		Cell 2	
<u>conditions</u>				
Access Serv	ice Class (ASC#0)	_	<u>1</u>	Selected so that no additional
- Persistence	e value			delay is caused by the random
				access procedure. The value
				shall be used for all cells in the

			test.
<u>N313</u>		<u>20</u>	
<u>N315</u>		<u>1</u>	
<u>T313</u>	<u>Seconds</u>	<u>0</u>	
<u>T</u> sı	<u>ms</u>	<u>1280</u>	
Monitored cell list size		16 TDD neighbours on Channel	
		<u>1</u>	
		16 TDD neighbours on Channel	
		<u>2</u>	
Reporting frequency	<u>Seconds</u>	<u>4</u>	
<u>T1</u>		<u>10</u>	
<u>T2</u>		<u>6</u>	

Table 8.4.1.4: Cell specific parameters for RRC re-establishment delay test, unknown target cell case

<u>Parameter</u>	<u>Unit</u>	Cell 1				Ce	II <u>2</u>		
Timeslot Number		9	<u>)</u>	<u>8</u>		<u>0</u>		<u>8</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>
UTRA RF Channel Number			Char	nel 1			Char	nel 2	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>	n.a.	n.a.	<u>-3</u>	<u>-3</u>	n.a.	n.a.
SCH_Ec/lor	<u>dB</u>	<u>-9</u>							
SCH_t <sub>offset</sub>		<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>15</u>	<u>15</u>	<u>15</u>	<u>15</u>
PICH_Ec/lor	<u>dB</u>	n.a.	n.a.	<u>-3</u>	<u>-3</u>	n.a.	<u>n.a.</u>	<u>-3</u>	<u>-3</u>
OCNS_Ec/lor	<u>dB</u>	<u>-3,12</u>							
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>3</u>	<u>-13</u>	<u>3</u>	<u>-13</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>
$I_{oc}$	<u>dBm/ 3.84</u> <u>MHz</u>	<u>-70</u>							
P-CCPCH_RSCP	<u>dB</u>	<u>-70</u>	<u>-86</u>	<u>n.a.</u>	<u>n.a.</u>	<u>-68</u>	<u>-68</u>	<u>n.a.</u>	<u>n.a.</u>
Propagation Condition		<u>AWGN</u>							

## 8.4.1.1.2.4.2 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.

[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) 10 s after step3 has completed, the parameters are changed to that as described for T2.
- 6) If the UE responds on cell 2 within 3.7 s from the beginning of time period T2 with a CELL UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds the RF parameters are set up according to T1.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.
- 10) Repeat step 3-9 [TBD] times

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in TS 25.331 [9] for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 3420ms (Minimum requirement + 100ms), allow 3.7s in the test case.

#### 8.4.1.1.2.5 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.

8.4.1.2 To an unknown target cell, 31,284 Mcps TDD option

(FFS).

8.4.1.3 Test 1: 1,28 Mcps option

8.4.1.2.1 Test 1

8.4.1.3.1 Definition and applicability

8.4.1.2.1.1 Definition and applicability

The UE Re-establishment delay requirement ( $T_{\text{UE-RE-ESTABLISH-REQ}}$ ) 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.

 $T_{\text{UE-RE-ESTABLISH-REQ}}$  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 requirements of this test apply to the TDD UE, 1.28 Mcps option..

#### 8.4.1.3.2 Minimum requirement

#### 8.4.1.2.1.2 Minimum requirement

The Re-establishment delay  $T_{\text{RE-ESTABLISH}}$  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

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

where

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

 $T_{UE-RE-ESTABLISH\_REQ-KNOWN} = 50ms + T_{search} + T_{SI} + T_{RA}$ 

 $N_{313} = 20$ 

 $T_{313} = 0s$ 

 $T_{\text{search}} = 100 \text{ms}$ 

 $T_{RA}$  = 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.

8.4.1.3.3 Test purpose

8.4.1.2.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.4.1.3.4 Method of test

<u>8.4.1.2.1.4</u> Method of test

8.4.1.32.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G2.2

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

The test parameters are given in table 8.4.1.3.4.18.4.1.5 and table 8.4.1.3.4.28.4.1.6 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms. And DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consist of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table 8.4.1.3.4.15: General test parameters for RRC re-establishment delay, Test 1

Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference	As specified in clause C.3.1 and C.2.1
		measurement channel	
		12.2 kbps	
Power Control		On	
Active cell, Initial		Cell 1	
condition			
Active cell, Final		Cell 2	
condition			
N313		20	
N315		1	
T313	Seconds	0	
Monitored cell list size		24	Monitored set shall only include intra frequency
			neighbours.
Cell 2			Included in the monitored set
Reporting frequency	Seconds	4	
T1	S	10	
T2	S	6	

**Parameter** Unit Cell 1 Cell 2 T2 T1 **T2 T1** Cell Frequency ChNr DB CPICH\_Ec/lor -10 -10 DB PCCPCH\_Ec/lor -12 -12 PICH\_Ec/lor DB -15 -15 DCH\_Ec/lor -17 Not applicable dB -Infinity OCNS\_Ec/lor -1.049 -0.941 -0.941 dB dB 2,39 -Infinity 4,39  $\hat{I}_{or}/I_{oc}$ dBm/ 1.28  $I_{oc}$ -70 MHz CPICH Ec/lo dB -15 -Infinity -13 **Propagation Condition AWGN** 

Table 8.4.1.3.4.26: Cell specific parameters for RRC re-establishment delay test, Test 1

# 8.4.1.32.1.4.2 Procedure

- 1) The RF parameters are set up according to column T1 in table 8.4.1.3.4.2.
- 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 SS waits for random access requests from the UE on cell 2.
- 5) 10 s after step3 has completed, the parameters are changed to that as described for column T2.
- 6) If the UE responds on cell 2 within 2.0 s from the beginning of time period T2 with a CELL\_UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds from the beginning of time period T2, the RF parameters are set up according to T1.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.
- 10) Repeat step 3-9 [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 1920ms(Minimum requirement + 100ms), allow 2s in the test case.

## 8.4.1.3.5 Test requirements

## 8.4.1.2.1.5 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.

8.4.1.4 Test 2: 1.28 Mcps option

8.4.1.2.2 Test 2

8.4.1.4.1 Definition and applicability

8.4.1.2.2.1 Definition and applicability

The UE Re-establishment delay requirement ( $T_{\text{UE-E-ESTABLISH-REQ}}$ ) 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.

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

- the UE has NOT had radio links connected to the cell in the previous (old) active set.
- the cell has NOT been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD UE, 1.28 Mcps option..

## 8.4.1.4.2 Minimum requirement

# 8.4.1.2.2.2 Minimum requirement

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

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

 $T_{\text{RE-ESTABLISH}} = T_{\text{RRC-RE-ESTABLISH}} + T_{\text{UE-RE-ESTABLISH-REO-UNKNOWN}}$ 

where

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

 $T_{\text{UE-RE-ESTABLISH-REQ-UNKNOWN}} = 50 \text{ms} + T_{\text{search}} * NF + T_{\text{SI}} + T_{\text{RA}},$ 

 $N_{313} = 20$ 

 $T_{313} = 0s$ 

 $T_{search} = 800 ms$ 

NF is the number of different frequencies in the monitored set. 3 frequencies are assumed in this test

case.

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

T<sub>SI</sub> 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.

#### 8.4.1.4.3 Test purpose

# 8.4.1.2.2.3 Test purpose

To verify that the UE meets the minimum requirement

8.4.1.4.4 Method of test

8.4.1.2.2.4 Method of test

8.4.1.42.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G2.2

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

The test parameters are given in table <u>8.4.1.4.18.4.1.7</u> and table <u>8.4.1.4.28.4.1.8</u> below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms. And DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table 8.4.1.4.1.7 General test parameters for RRC re-establishment delay, Test 2

Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference measurement channel 12.2	As specified in clause A.3.1 and A.2.1
		kbps	
Power Control		On	
Active cell, initial condition		Cell 1	
Active cell, final condition		Cell 2	
N313		20	
N315		1	
T313	Seconds	0	
Monitored cell list size		24	Monitored set shall include 2 additional frequencies.
Cell 2			Cell 2 is not included in the monitored set. Cell 2 is located on one of the 2 additional frequencies of the monitored set.
Reporting frequency	Seconds	4	
T1	S	10	
T2	S	6	

Table 8.4.1.4.28 Cell specific parameters for RRC re-establishment delay test, Test 2

Parameter	Unit	Ce	ell 1	Ce	II 2
		T1	T2	T1	T2
Cell Frequency	ChNr		1	2	2
CPICH_Ec/lor	DB	-	10	-1	0
PCCPCH_Ec/lor	DB	-	12	-1	2
PICH_Ec/lor	DB	-	-15		5
DCH_Ec/lor	DB	-17	-Infinity	Not applicable	
OCNS_Ec/lor	DB	-1.049	-0.941	-0.941	
$\hat{I}_{or}/I_{oc}$	DB	-3,35	-Infinity	-Infinity	0,02
$I_{oc}$	dBm/ 1.28 MHz	-70			
CPICH_Ec/Io	DB	-15	-Infinity	-Infinity	-13
Propagation Condition			AV	VGN	

# 8.4.1.42.2.4.2 Procedure

- 1) The RF parameters are set up according to column T1 in table 8.4.1.4.2.
- 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 SS waits for random access requests from the UE on cell 2.
- 5) 10 s after step3 has completed, the parameters are changed to that as described for column T2.
- 6) If the UE responds on cell 2 within 4.3 s from the beginning of time period T2 with a CELL\_UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds the RF parameters are set up according to T1.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.
- 10) Repeat step 3-9 [TBD] times

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 4220ms(Minimum requirement + 100ms), allow 4.3s in the test case.

#### 8.4.1.4.5 Test requirements

#### 8.4.1.2.2.5 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.

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# 8.4.2 Transport format combination selection in UE

# 8.4.2.1 Interactive or Background, PS, UL: 64 kbps

# 8.4.2.1.1 Definition and applicability

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format combination set. This in order to make it possible for the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321 [14].

# 8.4.2.1.2 Minimum requirements

The UE shall continuously evaluate based on the *Elimination*, *Recovery* and *Blocking* criteria defined below, how TFCs can be used for the purpose of TFC selection. The evaluation shall be performed using the estimated UE transmit power of a given CCTrCH in its associated timeslots.

In the case of a single CCTrCH or multiple CCTrCHs having mutually exclusive timeslot assignments, the UE shall consider the *Eliminiation* criterion for a given TFC of a CCTrCH to be fulfilled if for 3 successive frames the estimated UE transmit power is greater than the Maximum UE transmitter power for at least one timeslot associated with the CCTrCH in each frame.

In the case of multiple CCTrCHs not having mutually exclusive timeslot assignments, if for a given CCTrCH for 3 successive frames the estimated UE transmit power is greater than the Maximum UE transmitter power for at least one timeslot associated with the CCTrCH in each frame, the UE shall consider the *Elimination* criterion for a given TFC to be fulfilled if the use of this TFC will cause the estimated UE transmit power to continue to be greater than the Maximum UE transmitter power in at least one timeslot associated with the CCTrCH.

<u>In the case of multi-frame operation of UL Physical Channels, the UE shall only consider active frames for the evaluation of the *Elimination* criterion.</u>

If the *Elimination* criterion for a given TFC is fulfilled, the MAC in the UE shall consider that the TFC is in Excess-Power state for the purpose of TFC selection.

 $\underline{MAC}$  in the UE shall indicate the available bitrate for each logical channel to upper layers within  $\underline{T}_{notify}$  from the moment the *Elimination* criterion was fulfilled.

The UE shall not consider the *Recovery* criterion for a given TFC to be fulfilled until the use of this TFC will not cause the estimated UE transmit power to be greater than the Maximum UE transmitter power for all UL timeslots associated with the TFC for a minimum of 3 successive frames.

<u>In the case of multi-frame operation of UL Physical Channels, the UE shall only consider active frames for the evaluation of the *Recovery* criterion.</u>

If the *Recovery* criterion for a given TFC is fulfilled, the MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

 $\underline{\text{MAC}}$  in the UE shall indicate the available bitrate for each logical channel to upper layers within  $\underline{\text{T}}_{\text{notify}}$  from the moment the *Recovery* criterion was fulfilled.

The UE shall consider the *Blocking* criterion for a given TFC to be fulfilled at the latest at the start of the longest uplink TTI after the moment at which the TFC will have been in Excess-Power state for a duration of

		$(T_{\text{notify}} + T_{\text{modify}} + T_{\text{L1\_proc.}})$
where:		
T <sub>notify</sub> equals	s 15 ms, and	
T <sub>modify</sub> equa	ls MAX(T <sub>adapt_max</sub> ,T <sub>1</sub>	TTI), and
T <sub>L1 proc_</sub> equa	ıls 35 ms, and	

- T<sub>adapt max</sub> equals MAX(T<sub>adapt 1</sub>, T<sub>adapt 2</sub>, ..., T<sub>adapt N</sub>), and
- N equals the number of logical channels that need to change rate, and

T<sub>adapt n</sub> equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. Table 6A.1 defines T<sub>adapt</sub> times for different services. For services where no codec is used T<sub>adapt</sub> shall be considered to be equal to 0 ms.

Table 8.4.2.1.1: T<sub>adapt</sub>

<u>Service</u>	T <sub>adapt</sub> [ms]
<u>UMTS AMR</u>	<u>40</u>
UMTS AMR 2	<u>60</u>

 $T_{TTI}$  equals the longest uplink TTI of the selected TFC (ms).

The Maximum UE transmitter power is defined as follows

Maximum UE transmitter power = MIN(Maximum allowed UL TX Power, UE maximum transmit power)

#### where

- Maximum allowed UL TX Power is set by SS and defined in TS 25.331 [9], and
- UE maximum transmit power is defined by the UE power class, and specified in TS 25.102 [1].

The normative reference for these requirements is TS 25.123 [2] clauses 6A.2 and A.6A.2.

# 8.4.2.1.3 Test purpose

The purpose is to verify the UE blocks (stops using) a currently used TFC when the UE output power is not sufficient to support that TFC. This test will verify the general requirement on TFC selection in section 8.4.2.1.2 for a RAB intended for packet data services, i.e. Interactive or Background, PS, UL: 64kbps as defined in TS 34.108 [3].

# 8.4.2.1.4 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.

The test parameters are given in Tables 8.4.2.1.2, 8.4.2.1.3, Table 8.4.2.1.4 and Table 8.4.2.1.5 below. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively.

<u>Details on the UL reference RAB in table 8.4.2.1.3 can be found in TS 34.108 [3] section "Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH".</u>

**Table 8.4.2.1.2: General test parameters** 

Parameter	Unit	<u>Value</u>	Comment
TFCS size		<u>10</u>	
<u>TFCS</u>		UL_TFC0, UL_TFC1,	Gain factors for TFC0 to TFC9 shall be set to 1.
		UL_TFC2, UL_TFC3,	
		UL TFC4, UL TFC5,	
		UL_TFC6, UL_TFC7,	
		UL TFC8, UL TFC9	
Power Control		<u>On</u>	
Active cell		Cell 1	
Maximum allowed UL TX power	<u>dBm</u>	<u>0</u>	Value of IE "Maximum allowed UL Tx power
Primary CCPCH Tx power	<u>dBm</u>	<u>18</u>	Value of IE "Primary CCPCH Tx power"
UL timeslot interference	<u>dBm</u>	<u>-80</u>	Value of IE "UL timeslot interference"
			This value shall apply to all timeslots
<u>α</u>		<u>1</u>	IE "Alpha" either not sent or explicitly set to value
<u>UL target SIR</u>	<u>dB</u>	<u>6</u>	
DPCH constant offset	<u>dB</u>	<u>adjustable</u>	Value of IE "DPCH constant power
<u>T1</u>	<u>s</u>	<u>10</u>	
<u>T2</u>	<u>s</u>	<u>10</u>	

Table 8.4.2.1.3: Transport channel parameters for UL reference RAB, Interactive or Background and DCCH

<u>Parameter</u>	<u>Unit</u>	64 kbps RAB	DCCH 3.4kbps			
Transport Channel		<u>1</u>	<u>2</u>			
<u>Number</u>						
Transmission Time	<u>ms</u>	<u>20</u>	<u>40</u>			
<u>Interval</u>						
Type of Error		Turbo coding	Convolutional coding			
<u>Protection</u>						
Coding Rate		<u>1/3</u>				
Size of CRC	<u>bits</u>	<u>16</u>				
Transport Block Size	<u>bits</u>	<u>336</u>	<u>148</u>			
Transport Block Set	<u>bits</u>	336*B (B=0,1,2,3,4)	148*B (B=0,1)			
<u>Size</u>						
Transport Format Set	<u>bits</u>					
<u>TF0</u>		<u>0x336</u>	<u>0x148</u>			
<u>TF1</u>		<u>1x336</u>	<u>1x148</u>			
<u>TF2</u>		<u>2x336</u>	N/A			
TF3		<u>3x336</u>	N/A			
<u>TF4</u>		<u>4x336</u>	<u>N/A</u>			

**Table 8.4.2.1.4: UL TFCI** 

TFCI	(64 kbps RAB, DCCH)
UL_TFC0	<u>(TF0, TF0)</u>
UL_TFC1	<u>(TF0, TF1)</u>
UL_TFC2	<u>(TF1, TF0)</u>
UL TFC3	<u>(TF1, TF1)</u>
UL TFC4	<u>(TF2, TF0)</u>
<u>UL TFC5</u>	<u>(TF2, TF1)</u>
UL_TFC6	<u>(TF3, TF0)</u>
UL_TFC7	<u>(TF3, TF1)</u>
UL_TFC8	<u>(TF4, TF0)</u>
UL_TFC9	(TF4, TF1)

Table 8.4.2.1.5: Physical channel parameters

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>
<u>UL timeslot</u>		<u>7</u>
Burst type		<u>1</u>
Resource units		{(spreading factor 16 x 1 code) + (spreading factor 4 x 1 code)}
		x 1 time slot
<u>TFCI</u>	<u>Bits</u>	<u>16</u>
<u>TPC</u>	<u>Bits</u>	<u>2</u>
Frame allocation		Continuous

The test shall be performed in AWGN channel propagation conditions. The P-CCPCH in the DL shall be transmitted in timeslot 0.

The amount of available user data shall be sufficient to allow uplink transmission at the highest bit rate (UL\_TFC8 or UL\_TFC9) during the entire test and it shall be ensured that the UE is using UL\_TFC8 or UL\_TFC9 at the end of T1.

#### 8.4.2.1.4.2 Procedure

- 1) The UE is switched on.
- 2) The SS shall signal to the UE the allowed TFCS according to table 8.4.2.1.2.
- 3) For T1=30 secs the SS shall ensure that the received P-CCPCH power level in the UE is set to -60dBm and that the value of the DPCH constant value is adjusted such that the mean UE output power is -10dBm.
- 4) The SS shall decrease the received P-CCPCH power level in the UE by 20 dB.
- 5) The time from the beginning of T2 until the UE blocks (stops using) UL TFC8 and UL TFC9 shall be measured by the SS. The UE shall stop using UL TFC8 and UL TFC9 within 170 ms from beginning of time period T2.
- 6) Repeat steps 3-5 [50] times.

# 8.4.2.1.5 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.

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# 8.4.2 Transport format combination selection in UE

# 8.4.2.1 Interactive or Background, PS, UL: 64 kbps

#### 8.4.2.1.1 Definition and applicability

#### 8.4.2.1.1.1 3.84 Mcps TDD option

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format combination set. This in order to make it possible for the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321 [14].

8.4.2.1.1.1A 1.28 Mcps TDD option

Void

8.4.2.1.2 Minimum requirements

# 8.4.2.1.2.1 3.84 Mcps TDD option

The UE shall continuously evaluate based on the *Elimination*, *Recovery* and *Blocking* criteria defined below, how TFCs can be used for the purpose of TFC selection. The evaluation shall be performed using the estimated UE transmit power of a given CCTrCH in its associated timeslots.

In the case of a single CCTrCH or multiple CCTrCHs having mutually exclusive timeslot assignments, the UE shall consider the *Eliminiation* criterion for a given TFC of a CCTrCH to be fulfilled if for 3 successive frames the estimated UE transmit power is greater than the Maximum UE transmitter power for at least one timeslot associated with the CCTrCH in each frame.

In the case of multiple CCTrCHs not having mutually exclusive timeslot assignments, if for a given CCTrCH for 3 successive frames the estimated UE transmit power is greater than the Maximum UE transmitter power for at least one timeslot associated with the CCTrCH in each frame, the UE shall consider the *Elimination* criterion for a given TFC to be fulfilled if the use of this TFC will cause the estimated UE transmit power to continue to be greater than the Maximum UE transmitter power in at least one timeslot associated with the CCTrCH.

In the case of multi-frame operation of UL Physical Channels, the UE shall only consider active frames for the evaluation of the *Elimination* criterion.

If the *Elimination* criterion for a given TFC is fulfilled, the MAC in the UE shall consider that the TFC is in Excess-Power state for the purpose of TFC selection.

 $\underline{MAC\ in\ the\ UE\ shall\ indicate\ the\ available\ bitrate\ for\ each\ logical\ channel\ to\ upper\ layers\ within\ \underline{T_{notify}}\ from\ the\ \underline{moment\ the\ Elimination\ criterion\ was\ fulfilled.}}$ 

The UE shall not consider the *Recovery* criterion for a given TFC to be fulfilled until the use of this TFC will not cause the estimated UE transmit power to be greater than the Maximum UE transmitter power for all UL timeslots associated with the TFC for a minimum of 3 successive frames.

In the case of multi-frame operation of UL Physical Channels, the UE shall only consider active frames for the evaluation of the *Recovery* criterion.

If the *Recovery* criterion for a given TFC is fulfilled, the MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within  $T_{\text{notify}}$  from the moment the *Recovery* criterion was fulfilled.

The UE shall consider the *Blocking* criterion for a given TFC to be fulfilled at the latest at the start of the longest uplink TTI after the moment at which the TFC will have been in Excess-Power state for a duration of

 $(T_{\text{notify}} + T_{\text{modify}} + T_{L1 \text{ proc}})$ .

#### where:

- $T_{\text{notify}}$  equals 15 ms, and
- $T_{\text{modify}}$  equals  $MAX(T_{\text{adapt}}, T_{\text{TTI}})$ , and
- $T_{L1 \text{ proc}}$  equals 35 ms, and
- T<sub>adapt max</sub> equals MAX(T<sub>adapt 1</sub>, T<sub>adapt 2</sub>, ..., T<sub>adapt N</sub>), and
- N equals the number of logical channels that need to change rate, and

T<sub>adapt n</sub> equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. Table 6A.1 defines T<sub>adapt</sub> times for different services. For services where no codec is used T<sub>adapt</sub> shall be considered to be equal to 0 ms.

**Table 8.4.2.1.1: T**<sub>adapt</sub>

<u>Service</u>	T <sub>adapt</sub> [ms]
<u>UMTS AMR</u>	<u>40</u>
<u>UMTS AMR 2</u>	<u>60</u>

T<sub>TTI</sub> equals the longest uplink TTI of the selected TFC (ms).

The Maximum UE transmitter power is defined as follows

Maximum UE transmitter power = MIN(Maximum allowed UL TX Power, UE maximum transmit power)

#### where

Maximum allowed UL TX Power is set by SS and defined in TS 25.331 [9], and

UE maximum transmit power is defined by the UE power class, and specified in TS 25.102 [1].

The normative reference for these requirements is TS 25.123 [2] clauses 6A.2 and A.6A.2.

8.4.2.1.2.1A 1.28 Mcps TDD option

Void

8.4.2.1.3 Test purpose

8.4.2.1.3.1 3.84 Mcps TDD option

The purpose is to verify the UE blocks (stops using) a currently used TFC when the UE output power is not sufficient to support that TFC. This test will verify the general requirement on TFC selection in section 8.4.2.1.2 for a RAB intended for packet data services, i.e. Interactive or Background, PS, UL: 64kbps as defined in TS 34.108 [3].

8.4.2.1.3.1A 1.28 Mcps TDD option

Void

8.4.2.1.4 Method of test

8.4.2.1.4.1 Initial conditions

8.4.2.1.4.1.1 3.84 Mcps TDD option

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

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

The test parameters are given in Tables 8.4.2.1.2, 8.4.2.1.3, Table 8.4.2.1.4 and Table 8.4.2.1.5 below. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively.

<u>Details on the UL reference RAB in table 8.4.2.1.3 can be found in TS 34.108 [3] section "Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH".</u>

Table 8.4.2.1.2: General test parameters

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Comment</u>
TFCS size		<u>10</u>	
<u>TFCS</u>		UL_TFC0, UL_TFC1,	Gain factors for TFC0 to TFC9 shall be set to 1.
		UL TFC2, UL TFC3,	
		UL_TFC4, UL_TFC5,	
		UL_TFC6, UL_TFC7,	
		UL_TFC8, UL_TFC9	
Power Control		<u>On</u>	
Active cell		<u>Cell 1</u>	
Maximum allowed UL TX power	<u>dBm</u>	<u>0</u>	Value of IE "Maximum allowed UL Tx power
Primary CCPCH Tx power	<u>dBm</u>	<u>18</u>	Value of IE "Primary CCPCH Tx power"
UL timeslot interference	<u>dBm</u>	<u>-80</u>	Value of IE "UL timeslot interference"
			This value shall apply to all timeslots
<u>α</u>		<u>1</u>	IE "Alpha" either not sent or explicitly set to value
UL target SIR	<u>dB</u>	<u>6</u>	
DPCH constant offset	<u>dB</u>	<u>adjustable</u>	Value of IE "DPCH constant power
<u>T1</u>	<u>s</u>	<u>10</u>	
<u>T2</u>	<u>s</u>	<u>10</u>	

<u>Table 8.4.2.1.3: Transport channel parameters for UL reference RAB, Interactive or Background and DCCH</u>

<u>Parameter</u>	<u>Unit</u>	64 kbps RAB	DCCH 3.4kbps		
Transport Channel Number		1	2		
Transmission Time Interval	<u>ms</u>	<u>20</u>	<u>40</u>		
Type of Error Protection		Turbo coding	Convolutional coding		
Coding Rate		<u>1/3</u>			
Size of CRC	<u>bits</u>	<u>16</u>			
Transport Block Size	<u>bits</u>	<u>336</u>	<u>148</u>		
<u>Transport Block Set</u> <u>Size</u>	<u>bits</u>	336*B (B=0,1,2,3,4)	148*B (B=0,1)		
Transport Format Set  TF0 TF1 TF2 TF3 TF4	<u>bits</u>	0x336 1x336 2x336 3x336 4x336	0x148 1x148 N/A N/A N/A		

**Table 8.4.2.1.4: UL TFCI** 

<u>TFCI</u>	(64 kbps RAB, DCCH)
UL TFC0	<u>(TF0, TF0)</u>
UL TFC1	<u>(TF0, TF1)</u>
UL_TFC2	<u>(TF1, TF0)</u>
UL TFC3	<u>(TF1, TF1)</u>
UL_TFC4	<u>(TF2, TF0)</u>
UL_TFC5	<u>(TF2, TF1)</u>
UL_TFC6	<u>(TF3, TF0)</u>
UL TFC7	<u>(TF3, TF1)</u>
UL_TFC8	<u>(TF4, TF0)</u>
UL_TFC9	<u>(TF4, TF1)</u>

Table 8.4.2.1.5: Physical channel parameters

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>
<u>UL timeslot</u>		<u>7</u>
Burst type		1
Resource units		{(spreading factor 16 x 1 code) + (spreading factor 4 x 1 code)}
		<u>x 1 time slot</u>
<u>TFCI</u>	<u>Bits</u>	<u>16</u>
<u>TPC</u>	<u>Bits</u>	<u>2</u>
Frame allocation		<u>Continuous</u>

The test shall be performed in AWGN channel propagation conditions. The P-CCPCH in the DL shall be transmitted in timeslot 0.

The amount of available user data shall be sufficient to allow uplink transmission at the highest bit rate (UL\_TFC8 or UL\_TFC9) during the entire test and it shall be ensured that the UE is using UL\_TFC8 or UL\_TFC9 at the end of T1.

8.4.2.1.4.1.1A 1.28 Mcps TDD option

Void

8.4.2.1.4.2 Procedure

8.4.2.1.4.2.1 3.84 Mcps TDD option

- 1) The UE is switched on.
- 2) The SS shall signal to the UE the allowed TFCS according to table 8.4.2.1.2.
- 3) For T1=30 secs the SS shall ensure that the received P-CCPCH power level in the UE is set to -60dBm and that the value of the DPCH constant value is adjusted such that the mean UE output power is -10dBm.
- 4) The SS shall decrease the received P-CCPCH power level in the UE by 20 dB.
- 5) The time from the beginning of T2 until the UE blocks (stops using) UL TFC8 and UL TFC9 shall be measured by the SS. The UE shall stop using UL TFC8 and UL TFC9 within 170 ms from beginning of time period T2.
- 6) Repeat steps 3-5 [50] times.

Void

8.4.2.1.5 Test requirements

8.4.2.1.5.1 3.84 Mcps TDD option

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.

8.4.2.1.5.1A 1.28 Mcps TDD option

Void

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA 10<sup>th</sup>-14<sup>th</sup> February 2003

CHANGE REQUEST						
* TS 34.122 CR 128						
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: UICC apps# ME X Radio Access Network Core Network						
Title:   ** Timing Advance Test Case						
Source: # T1-RF						
Work item code:   ■ Date:   # 13/01/2003						
Category: $\#$ F Use one of the following categories: $F$ (correction) Use one of the following releases: $F$ (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) Rel-6 (Release 6)						
Reason for change:   **Test Case 'UE Timing Advance' is missing from the current version of 34.122						
Summary of change:   Addition of Test Case 'UE Timing Advance'						
Consequences if # 34.122 will be inconsistent with 25.123 not approved:						
Clauses affected: # 8.5.1						
Other specs  ### X Other core specifications ## Test specifications  O&M Specifications						
Other comments: #						

# How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked \( \mathcal{H} \) 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

# 8.5 Timing Characteristics

# 8.5.1 UE Timing Advance

#### Void.

# 8.5.1.1 Definition and applicability

Timing advance is the correction to UE transmit timing required in order to avoid large delay spread at the Node B. The timing advance value is provided to the UE by UTRAN.

The requirements and this test apply to the TDD UE.

# 8.5.1.2 Minimum requirement

The UE shall adjust the timing of its transmissions with an accuracy better than or equal to  $\pm 0.5$  chip to the signalled timing advance value.

The normative reference for this requirement is TS 25.123 [2] clauses 7.1.1. and A.7.1.1

# 8.5.1.3. Test purpose

To verify that the UE meets the minimum requirement.

# 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.

The test parameters are given in table 8.5.1.1 and table 8.5.1.2. The test consists of two successive time periods, with a time duration of T1and T2 respectively. At the start of time duration T1, the UE shall transmit with the Uplink Timing Advance value set to zero, i.e. Timing Advance disabled.

During time period T1, UTRAN shall send an Uplink Physical Channel control message with activation time at the beginning of T2. The Uplink Physical Channel Control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T2 is greater than or equal to the RRC procedure delay as defined in [9].

Table 8.5.1.1: General test parameters for Timing Advance test

Par	<u>Parameter</u>		<u>Value</u>	Comment
DCH parameters			DL Reference Measurement	As specified in TS 25.102 section A.2.2
			Channel 12.2 kbps	
Powe	er Control		<u>On</u>	
	uality value on	BLER	<u>0.01</u>	
	<u>OTCH</u>			
<u>Initial</u>	<u>Timing</u>		<u>0</u>	IE "Uplink timing advance control" value
<u>conditions</u>	Advance value			<u>disabled.</u>
<u>Final</u>	<u>Timing</u>		<u>5</u>	IE "Uplink timing advance" value set to 5.
<u>condition</u>	Advance value			
Monitore	d cell list size		6 TDD neighbors on Channel 1	
<u>T<sub>SI</sub></u>		<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>5</u>	
	T2	S	5	

Table 8.5.1.2: Cell specific test parameters for Timing Advance test

<u>Parameter</u>	<u>Unit</u>	<u>Cell 1</u>				
DL timeslot number		<u>0</u>			2	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
UTRA RF Channel Number		Channel 1				
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		<u>r</u>	<u>ı.a.</u>	
SCH_Ec/lor	<u>dB</u>	<u>-9</u>		<u>r</u>	<u>ı.a.</u>	
SCH toffset	<u>dB</u>	<u>0</u>		<u>r</u>	<u>ı.a.</u>	
DPCH_Ec/lor	<u>dB</u>	<u>n.a</u>	_	<u>No</u>	ote 1	
OCNS Ec/lor	<u>dB</u>	<u>-3,1</u>	2	<u>No</u>	ote 2	
$\frac{\hat{I}_{or}/I_{oc}}{}$	<u>dB</u>	<u>3</u>				
$I_{oc}$	<u>dBm/</u> 3,84 MHz	<u>-70</u>				
Propagation Condition		<u>AWGN</u>				

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 lor.

#### 8.5.1.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL DCH.
- 4) At the start of time interval T1, the SS shall transmit an UPLINK PHYSICAL CHANNEL CONTROL message with timing advance disabled
- 5) During the interval T1, the SS shall transmit an UPLINK PHYSICAL CHANNEL CONTROL message with timing advance enabled and the timing advance value set to 5.
- 6) UE shall apply the signalled timing advance value.
- 7) After 10 seconds, the UE is switched off.
- 8) Repeat Step 1-7 [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:

# UPLINK PHYSICAL CHANNEL CONTROL message (step 4):

Information Element/Group name	<u>Value/Remark</u>
Message Type (10.2.17)	
<u>UE information elements</u>	
-RRC transaction identifier	<u>0</u>
-Integrity check info	Not Present
PhyCH Information elements	
-CCTrCH Power Control Info	Not Present
-Alpha	Not Present
-Special Burst Scheduling	Not Present
-Timing Advance Control (10.3.6.96)	
-Choice Timing Advance	<u>Disabled</u>
-PRACH Constant Value	Not Present
-PUSCH Constant Value	Not Present
-UE positioning related parameters	Not Present

# <u>UPLINK PHYSICAL CHANNEL CONTROL message (step 5):</u>

Information Element/Group name	<u>Value/Remark</u>
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	<u>0</u>
-Integrity check info	Not Present
PhyCH Information elements	
-CCTrCH Power Control Info	Not Present
-Alpha	Not Present
-Special Burst Scheduling	Not Present
-Timing Advance Control (10.3.6.96)	
-Choice Timing Advance	<u>Enabled</u>
<u>-UL Timing Advance (10.3.6.9.95)</u>	<u>5</u>
-Activation Time	At T2
-PRACH Constant Value	Not Present
-PUSCH Constant Value	Not Present
-UE positioning related parameters	Not Present

# 8.5.1.5 Test requirements

The UE shall apply the signalled Timing Advance value to the UL DPCH transmission timing at the designated activation time, i.e the beginning of time period T2. The Timing Advance adjustement accuracy shall be within  $\pm 0.5$  chip.

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.

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA 10<sup>th</sup>-14<sup>th</sup> February 2003

CHANGE REQUEST							
* TS 34.122 CR 129							
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the % symbo	ls.						
Proposed change affects: UICC apps# ME X Radio Access Network Core Network							
Title:							
Source: # T1-RF							
Work item code:    Bate:   13/01/2003							
Category:  ***  **A Use one of the following categories:  **F* (correction)  **A (corresponds to a correction in an earlier release)  **B (addition of feature),  **C (functional modification of feature)  **D (editorial modification)  **D (editorial modification)  **D (be above categories can be found in 3GPP TR 21.900).  **Release: **Rel-4  **Rel-4  **Clesse: **Rel-4  **Rel-4  **Rel-4  **Rel-4  **Rel-4  **Rel-4  **Rel-8  **Rel-4  **Rel-8  **Rel-4  **Rel-8  **Rel-4  **Rel-8  **Rel-4  **Rel-8  **Rel-9  **Rel-8  **Rel-9  *	s:						
Reason for change:   **Test Case 'UE Timing Advance' is missing from the current version of 34.122							
Summary of change:  Addition of Test Case 'UE Timing Advance'  Consequences if # 34.122 will be inconsistent with 25.123  not approved:							
Clauses affected: # 8.5.1  Y N  Other specs # X Other core specifications #							
affected:  X Test specifications O&M Specifications Other comments: #							
ourer comments. of							

# 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

# 8.5 Timing Characteristics

# 8.5.1 UE Timing Advance

Void.

### 8.5.1.1 3,84 Mcps TDD Option

### 8.5.1.1.1 Definition and applicability

Timing advance is the correction to UE transmit timing required in order to avoid large delay spread at the Node B. The timing advance value is provided to the UE by UTRAN.

The requirements and this test apply to the TDD (3.84 Mcps option) UE.

#### 8.5.1.1.2 Minimum requirement

The UE shall adjust the timing of its transmissions with an accuracy better than or equal to  $\pm 0.5$  chip to the signalled timing advance value.

The normative reference for this requirement is TS 25.123 [2] clauses 7.1.1. and A.7.1.1

#### 8.5.1.1.3. Test purpose

To verify that the UE meets the minimum requirement.

### 8.5.1.1.4 Method of test

# 8.5.1.1.4.1 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 8.5.1.1 and table 8.5.1.2. The test consists of two successive time periods, with a time duration of T1and T2 respectively. At the start of time duration T1, the UE shall transmit with the Uplink Timing Advance value set to zero, i.e. Timing Advance disabled.

During time period T1, UTRAN shall send an Uplink Physical Channel control message with activation time at the beginning of T2. The Uplink Physical Channel Control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T2 is greater than or equal to the RRC procedure delay as defined in [9].

Table 8.5.1.1: General test parameters for Timing Advance test

Par	ameter	Unit	<u>Value</u>	Comment
DCH parameters			DL Reference Measurement	As specified in TS 25.102 section A.2.2
			Channel 12.2 kbps	
	er Control		<u>On</u>	
Target quality value on DTCH		BLER	<u>0.01</u>	
Initial conditions	Timing Advance value		<u>0</u>	IE "Uplink timing advance control" value disabled.
Final condition	Timing Advance value		<u>5</u>	IE "Uplink timing advance" value set to 5.
Monitored cell list size			6 TDD neighbors on Channel 1	
<u>T<sub>SI</sub></u>		<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>5</u>	
	<u>T2</u>	<u>S</u>	<u>5</u>	

Table 8.5.1.2: Cell specific test parameters for Timing Advance test

Parameter Unit		Cell 1				
DL timeslot number		0			2	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
UTRA RF Channel Number		Channel 1				
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>		1	n.a.	
SCH_Ec/lor	<u>dB</u>	<u>-9</u>		n.a.		
SCH_t <sub>offset</sub>	<u>dB</u>	<u>0</u>		<u>n.a.</u>		
DPCH_Ec/lor	<u>dB</u>	<u>n.a.</u>		Note 1		
OCNS_Ec/lor	<u>dB</u>	<u>-3,12</u>		Note 2		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>3</u>				
$I_{oc}$ $\frac{\text{dBm/}}{3,84 \text{ MHz}}$		<u>-70</u>				
Propagation Condition		<u>AWGN</u>				

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 lor.

### 8.5.1.1.4.2 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 generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL\_DCH.
- <u>4) At the start of time interval T1, the SS shall transmit an UPLINK PHYSICAL CHANNEL CONTROL message with timing advance disabled</u>
- 5) During the interval T1, the SS shall transmit an UPLINK PHYSICAL CHANNEL CONTROL message with timing advance enabled and the timing advance value set to 5.
- 6) UE shall apply the signalled timing advance value.
- 7) After 10 seconds, the UE is switched off.
- 8) Repeat Step 1-7 [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:

### <u>UPLINK PHYSICAL CHANNEL CONTROL message (step 4):</u>

Information Element/Group name	<u>Value/Remark</u>
Message Type (10.2.17)	
<u>UE information elements</u>	
-RRC transaction identifier	<u>0</u>
-Integrity check info	Not Present
PhyCH Information elements	
-CCTrCH Power Control Info	Not Present
-Choice TDD Option	3.84 Mcps TDD
-Alpha	Not Present
-Special Burst Scheduling	Not Present
-Timing Advance Control (10.3.6.96)	
-Choice Timing Advance	<u>Disabled</u>
-PRACH Constant Value	Not Present
-PUSCH Constant Value	Not Present
-UE positioning related parameters	Not Present

#### UPLINK PHYSICAL CHANNEL CONTROL message (step 5):

Information Element/Group name	<u>Value/Remark</u>
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	<u>0</u>
-Integrity check info	Not Present
PhyCH Information elements	
-CCTrCH Power Control Info	Not Present
-Choice TDD Option	3.84 Mcps TDD
-Alpha	Not Present
-Special Burst Scheduling	Not Present
-Timing Advance Control (10.3.6.96)	
-Choice Timing Advance	<u>Enabled</u>
-Choice TDD Option	3.84 Mcps TDD
-UL Timing Advance (10.3.6.9.95)	<u>5</u>
-Activation Time	At T2
-PRACH Constant Value	Not Present
-PUSCH Constant Value	Not Present
-UE positioning related parameters	Not Present

### 8.5.1.1.5 Test requirements

The UE shall apply the signalled Timing Advance value to the UL DPCH transmission timing at the designated activation time, i.e the beginning of time period T2. The Timing Advance adjustement accuracy shall be within  $\pm 0.5$  chip.

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.

# 8.5.1.2 1,28 Mcps TDD Option

Void.

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

	CHANGE REQUEST	CR-Form-v7
×	34.122 CR 130	Current version: 3.10.0 <sup>♯</sup>
For <u>HELP</u> on t	using this form, see bottom of this page or look at the	e pop-up text over the % symbols.
Proposed change		ccess Network Core Network
Title: ਖ਼	Event-triggered reporting in AWGN propagation of	onditions test case
Source:	€ T1-RF	
Work item code: #	€	Date: 第 13/01/2003
Category: अ	Use one of the following categories:  F (correction)  A (corresponds to a correction in an earlier release  B (addition of feature),  C (functional modification of feature)  D (editorial modification)  Detailed explanations of the above categories can be found in 3GPP TR 21.900.	Release: # R99  Use one of the following releases: 2 (GSM Phase 2) e) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)
Reason for chang	The test case for Event triggered reporting in missing from the current version of TS 34.12	
Summary of chang	ge:   ## Introduction of Event triggered reporting in A\ case.	WGN propagation conditions test
Consequences if not approved:	★ Inconsistency 34.122 and 25.123	
Clauses affected:	₩ 8.6.1.1	
Other specs affected:	Y N      X Other core specifications	
Other comments:	<b>光</b> -	

## 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 TDD UE.

### 8.6.1.1.2 Minimum requirement

The UE shall be able to identify a new detectable intra-frequency TDD cell belonging to the monitored set within  $\underline{T_{identify\ intra.}}$  ms, where  $\underline{T_{identify\ intra.}}$  = 800 ms.

When L3 filtering is used, an additional delay can be expected.

In CELL\_DCH state, the UE shall be capable of performing P-CCPCH RSCP measurements for  $X_{measurement\ intra}$  identified intra-frequency TDD cells of the monitored set with a measurement period for intra-frequency P-CCPCH RSCP measurements  $T_{measurement\ period\ intra}$ , where

 $X_{\text{measurement intra}} = 6 \text{ (cells)}$ 

 $\underline{T}_{measurement\ period\ intra} = 200\ ms$ 

The UE physical layer shall be capable of reporting these measurements to higher layers with the measurement period  $\underline{T}_{measurement period intra}$ .

If the UE has identified more than X<sub>measurement intra</sub> intra-frequency TDD cells, the UE shall perform measurements of all identified cells but the reporting rate of P-CCPCH RSCP measurements of cells from the UE physical layer to higher layers may be decreased.. The measurement accuracy for all measured cells shall be as specified in the section 9.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.2.1, 8.1.2.2.2 and A.8.1.1

### 8.6.1.1.3 Test purpose

To verify that the UE meets the minimum requirement.

## 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. The test consists of three successive time periods, with time durations of T1, T2 and T3 respectively. Three cells shall be present in the test, cell 1 being the serving cell and cell 2 and cell 3 being neighbour cells on the used frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The DL DPCH shall be transmitted in timeslot 2 and the UL DPCH shall be transmitted in timeslot 10. The TTI of the uplink DCCH shall be 20ms.

<u>Table 8.6.1.1.1: General test parameters for Event 1G triggered reporting in AWGN propagation condition</u>

Para	<u>ameter</u>	Unit	<u>Value</u>	Comment
DCH parame	eters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Contro	<u>ol</u>		<u>On</u>	
Target quality DTCH	y value on	BLER	<u>0.01</u>	
<u>Initial</u>	Active cell		Cell 1	
conditions	Neighbour cell		Cell 2, Cell 3	
Final condition	Active cell		Cell 1	
<u>O</u>		<u>dB</u>	<u>0</u>	Cell individual offset. This value shall be used for all cells in the test.
<u>Hysteresis</u>		<u>dB</u>	<u>0</u>	
Time to Trigg	<u>jer</u>	<u>ms</u>	<u>0</u>	
Threshold used frequency		<u>dBm</u>	<u>-70</u>	Applicable for Event 1G
Filter coeffici	<u>ent</u>		<u>0</u>	
Monitored cell list size			12 TDD neighbours on Channel 1	
<u>T1</u>		<u>s</u>	<u>6</u>	
T2		<u>s</u>	<u>6</u>	
<u>T3</u>	·	<u>s</u>	<u>6</u>	

<u>Table 8.6.1.1.2: Cell specific parameters for Event 1G triggered correct reporting in AWGN propagation condition</u>

<u>Parameter</u>	<u>Unit</u>	Cell 1		Cell 2			Cell 3		
		<u>T1</u>	<u>T2</u> <u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>
DL timeslot number			0		0		<u>0</u>		
UTRA RF Channel Number		Channel 1			Channel 1		Channel 1		
PCCPCH Ec/lor	<u>dB</u>	<u>-3</u>			<u>-3</u>		<u>-3</u>		
SCH Ec/lor	<u>dB</u>	<u>-9</u>		<u>-9</u>		<u>-9</u>			
SCH toffset		<u>0</u>		<u>5</u>		<u>10</u>			
OCNS Ec/lor	<u>dB</u>	<u>-3,12</u>		<u>-3,12</u>		<u>-3,12</u>			
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>7</u>	<u>5</u>	<u>5</u>	<u>7</u>	<u>-Inf</u>	<u>-lı</u>	<u>nf</u>	<u>7</u>
PCCPCH RSCP	<u>dBm</u>	-66 -68		<u>-68</u>	<u>-66</u>	<u>-Inf</u>	<u>-lı</u>	<u>nf</u>	<u>-66</u>
$I_{oc}$	<u>dBm /</u> 3,84 MHz	<u>-70</u>							
Propagation Condition		AWGN							

### 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 generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL\_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 6 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 240 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 7) After 6 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.

- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 3. The measurement reporting delay from the beginning of T3 shall be less than 840 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 9) After 6 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

10) Repeat steps 1-9 [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	<u>Value/Remark</u>
Message Type (10.2.17)	
<u>UE information elements</u>	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements -Measurement Identity	4
-Measurement Command (10.3.7.46)	1 Modify
-Measurement Reporting Mode (10.3.7.49)	<u>ivioury</u>
-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)	Not Decemb
-Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38)	Not Present
-Filter coefficient (10.3.7.9)	<u>0</u>
-CHOICE mode	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-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 synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator -CHOICE mode	TRUE TDD
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH 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	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator -Proposed TGSN reporting required	FALSE FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	1 Not Droppet
-Measurement validity (10.3.7.51) -CHOICE report criteria	Not Present Intra-frequency measurement reporting
STOIGE TOPOIL ORIGINA	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	<u>1</u>
-Intra-frequency event identity	Event 1G
	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE mode -Primary CCPCH info (10.3.6.57)	TDD
-CHOICE mode	TDD
-CHOICE sync case	Case 2
-Timeslot	0
-Cell parameters ID	<u>0</u>
-SCTD indicator	FALSE
	Not Present
-Hysteresis Threshold used frequency	0 dB
-Threshold used frequency -Reporting deactivation threshold	Not Present Not Present
-Reporting deactivation threshold -Replacement activation threshold	Not Present Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
	· ————

Information Element/Group name	<u>Value/Remark</u>	
-Reporting interval	<u>0 ms (Note 1)</u>	
-Reporting cell status	Not Present	
Physical channel information elements		
-DPCH compressed mode status info (10.3.6.34)	Not Present	
Note 1: Reporting interval = 0 ms means no periodical reporting		

# MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	<u>valuo/remaix</u>
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	<u> </u>
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	<u> </u>
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>1G</u>
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	<u>TDD</u>
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of Cell 2

# MEASUREMENT REPORT message (step 8)

Information Element	<u>Value/remark</u>
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	<u>1</u>
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 3
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>1G</u>
-Cell measurement event results (10.3.7.4)	TDD
-CHOICE mode	<u>TDD</u>

-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 3

### 8.6.1.1.5 Test requirements

The UE shall send one Event 1G triggered measurement report for Cell 2 with a measurement reporting delay less than 240ms from the beginning of time period T2.

The UE shall send one Event 1G triggered measurement report for Cell 3 with a measurement reporting delay less than 840ms from the beginning of time period T3.

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

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

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## 8.6.1.1 Event triggered reporting in AWGN propagation conditions

Void.

8.6.1.1.1 Definition and applicability

8.6.1.1.1.1 3,84 Mcps TDD Option

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 TDD (3.84 Mcps option) UE.

8.6.1.1.1.2 1,28 Mcps TDD Option

Void.

8.6.1.1.2 Minimum requirement

8.6.1.1.2.1 3,84 Mcps TDD Option

The UE shall be able to identify a new detectable intra-frequency TDD cell belonging to the monitored set within  $T_{identify intra}$  ms, where  $T_{identify intra} = 800$  ms.

When L3 filtering is used, an additional delay can be expected.

 $\label{eq:local_problem} \begin{array}{ll} \underline{\text{In CELL DCH state, the UE shall be capable of performing P-CCPCH RSCP measurements for $X_{\text{measurement intra}}$} \\ \underline{\text{identified intra-frequency TDD cells of the monitored set with a measurement period for intra-frequency P-CCPCH}$ \\ RSCP \ measurements $T_{\text{measurement period intra.}}$ \underline{\text{where}}$ \\ \end{array}$ 

 $X_{\text{measurement intra}} = 6 \text{ (cells)}$ 

 $\underline{T}_{measurement period intra} = 200 \text{ ms}$ 

The UE physical layer shall be capable of reporting these measurements to higher layers with the measurement period  $\underline{T}_{\text{measurement period intra}}$ .

If the UE has identified more than X<sub>measurement intra</sub> intra-frequency TDD cells, the UE shall perform measurements of all identified cells but the reporting rate of P-CCPCH RSCP measurements of cells from the UE physical layer to higher layers may be decreased. The measurement accuracy for all measured cells shall be as specified in the section 9.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.2.1, 8.1.2.2.2 and A.8.1.1

8.6.1.1.2.2 1.28 Mcps TDD Option

Void.

8.6.1.1.3 Test purpose

8.6.1.1.3.1 3,84 Mcps TDD Option

To verify that the UE meets the minimum requirement.

8.6.1.1.3.2 1.28 Mcps TDD Option

Void.

8.6.1.1.4 Method of test

8.6.1.1.4.1 3,84 Mcps TDD Option

8.6.1.1.4.1.1 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. The test consists of three successive time periods, with time durations of T1, T2 and T3 respectively. Three cells shall be present in the test, cell 1 being the serving cell and cell 2 and cell 3 being neighbour cells on the used frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The DL DPCH shall be transmitted in timeslot 2 and the UL DPCH shall be transmitted in timeslot 10. The TTI of the uplink DCCH shall be 20ms.

Table 8.6.1.1.1: General test parameters for Event 1G triggered reporting in AWGN propagation condition

Para	<u>meter</u>	<u>Unit</u>	<u>Value</u>	<u>Comment</u>
DCH paramet	<u>ers</u>		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Contro	_		<u>On</u>	
Target quality DTCH	value on	BLER	<u>0.01</u>	
<u>Initial</u>	Active cell		<u>Cell 1</u>	
conditions	Neighbour cell		Cell 2, Cell 3	
Final condition	Active cell		Cell 1	
<u>O</u>	•	<u>dB</u>	<u>0</u>	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		<u>dB</u>	<u>0</u>	
Time to Trigge	<u>er</u>	ms	<u>0</u>	
Threshold use	ed frequency	<u>dBm</u>	<u>-70</u>	Applicable for Event 1G
Filter coefficie	<u>nt</u>		<u>0</u>	
Monitored cell	list size		12 TDD neighbours on Channel 1	
<u>T1</u>		<u>s</u>	<u>6</u>	
<u>T2</u> <u>T3</u>		<u>s</u>	<u>6</u>	
<u>T3</u>		<u>s</u>	<u>6</u>	

<u>Table 8.6.1.1.2: Cell specific parameters for Event 1G triggered correct reporting in AWGN propagation condition</u>

<u>Parameter</u>	<u>Unit</u>		Cell 1		Cell 2		Cell 3		
		<u>T1</u>	<u>T2</u> <u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>
DL timeslot number			<u>0</u>		<u>0</u>			<u>0</u>	
UTRA RF Channel Number			Channel 1		Channel 1	-	Channel 1		
PCCPCH_Ec/lor	<u>dB</u>		<u>-3</u>		<u>-3</u>		<u>-3</u>		
SCH_Ec/lor	<u>dB</u>		<u>-9</u>		<u>-9</u>		<u>-9</u>		
SCH_t <sub>offset</sub>			<u>0</u>		<u>5</u>		<u>10</u>		
OCNS_Ec/lor	<u>dB</u>		<u>-3,12</u>		<u>-3,12</u>		<u>-3,12</u>		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>7</u>	<u>5</u>	<u>5</u>	<u>7</u>	<u>-Inf</u>	<u>-lı</u>	<u>nf</u>	<u>7</u>
PCCPCH RSCP	<u>dBm</u>	<u>-66</u>	<u>-68</u>	<u>-68</u>	<u>-66</u>	<u>-Inf</u>	<u>-1</u>	<u>nf</u>	<u>-66</u>
$I_{oc}$	<u>dBm /</u> 3,84 MHz		<u>-70</u>						
Propagation Condition			<u>AWGN</u>						

#### 8.6.1.1.4.1.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 6 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 240 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 7) After 6 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 3. The measurement reporting delay from the beginning of T3 shall be less than 840 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 9) After 6 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 10) Repeat steps 1-9 [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)	
<u>UE information elements</u>	
-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 -Additional measurements list (10.3.7.1)	Event trigger
-Additional measurements list (10.3.7.1) -CHOICE Measurement type	Not Present Intra-frequency measurement
-Intra-frequency 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)	TOUT TOOCHE
-Filter coefficient (10.3.7.9)	<u>0</u>
-CHOICE mode	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-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 synchronisation information reporting indicator	<u>FALSE</u>
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator	No report FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	1
-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)	
-Parameters required for each event	1   1   Event 1C
-Intra-frequency event identity	Event 1G
-Triggering condition 2 -Reporting Range Constant	Not Present Not Present
-Reporting Range Constant -Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	<u>0 ms</u>
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	<u>ng</u>

# MEASUREMENT REPORT message (step 6)

Information Element	<u>Value/remark</u>
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>1G</u>
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	<u>TDD</u>
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of Cell 2

# MEASUREMENT REPORT message (step 8)

	N. 1. 1
Information Element	<u>Value/remark</u>
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	<u>1</u>
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 3
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>1G</u>
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 3

8.6.1.1.4.2 1.28 Mcps TDD Option

Void.

8.6.1.1.5 Test requirements

8.6.1.1.5.1 3,84 Mcps TDD Option

The UE shall send one Event 1G triggered measurement report for Cell 2 with a measurement reporting delay less than 240ms from the beginning of time period T2.

The UE shall send one Event 1G triggered measurement report for Cell 3 with a measurement reporting delay less than 840ms from the beginning of time period T3.

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

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

8.6.1.1.5.2 1.28 Mcps TDD Option

Void.

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

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## 8.6.1.2 Event triggered 1H and 1I reporting in AWGN propagation conditions

#### Void.

#### 8.6.1.2.1 Definition and applicability

In the event triggered reporting, 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 TDD UE.

#### 8.6.1.2.2 Minimum requirement

In CELL\_DCH state the measurement period for intra frequency Timeslot ISCP measurements on arbitrary DL timeslots, including Beacon timeslots is 400 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing Timeslot ISCP measurements for a total of 10 different combinations of an arbitrary DL timeslot and an intra-frequency cell, including the current serving cell.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.2.2.A and A.8.1.2

#### 8.6.1.2.3 Test purpose

To verify that the UE meets the minimum requirement.

#### 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 Tables 8.6.1.2.1, 8.6.1.2.2 and 8.6.1.2.3. The test consists of five successive time periods, with a time duration of T1, T2, T3, T4 and T5 respectively. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency.

In the measurement control information it shall be indicated to the UE that event-triggered reporting with event 1H and event 1I shall be used and that Timeslot ISCP and P-CCPCH RSCP shall be reported together with event 1H and 1I. Measurement control information shall be sent to the UE before the beginning of time period T1.

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The UL DPCH shall be transmitted in timeslot 10. In addition, timeslots 3 and 4 shall be allocated as DL timeslots. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.6.1.2.1: General test parameters for correct event 1H and event 1I reporting in AWGN propagation condition

Parar	<u>neter</u>	<u>Unit</u>	<u>Value</u>	Comment
DCH paramete	<u>ers</u>		DL Reference Measurement	As specified in TS 25.102 section A.2.2
			Channel 12.2 kbps	
Power Control			<u>On</u>	
Target quality DTCH	value on	BLER	<u>0.01</u>	
Initial	Active cell		Cell 1	
conditions	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 1	
HCS			Not used	
<u>O</u>		<u>dB</u>	<u>0</u>	Cell individual offset. This value shall be used for all cells in the test.
Timeslot list ce	ell 1		2, 3, 4	Timeslot numbers in IE "Cell info" for Cell 1
Timeslot list ce	ell 2		4	Timeslot numbers in IE "Cell info" for Cell 2
Threshold use	d frequency	<u>dBm</u>	<u>-68</u>	Threshold 1 applicable for event 1H, cell 1 timeslots 2, 4 and cell 2 timeslot 4
Threshold use	d frequency	<u>dBm</u>	<u>-73</u>	Threshold 2 applicable for event 1H, cell 1 timeslots 2, 3, 4 and cell 2 timeslot 4
Threshold use	d frequency	<u>dBm</u>	<u>-67</u>	Applicable for event 11, cell 1 timeslots 2, 4 and cell 2 timeslot 4
Hysteresis		<u>dB</u>	<u>0</u>	
Time to Trigge	<u>ir</u>	<u>ms</u>	<u>0</u>	
Filter coefficier	<u>nt</u>		<u>0</u>	
Monitored cell	list size		6 TDD neighbours on Channel 1	Cell 2 shall belong to the monitored set
<u>T1</u>		<u>s</u>	<u>5</u>	
<u>T2</u>	·	<u>s</u>	<u>5</u>	
<u>T3</u>		<u>s</u>	<u>5</u>	
<u>T4</u>		<u>s</u>	<u>5</u>	
<u>T5</u>		<u>s</u>	<u>5</u>	

<u>Table 8.6.1.2.2: Cell 1 specific parameters for correct event 1H and 1I reporting in AWGN propagation condition</u>

<u>Parameter</u>	<u>Unit</u>	Cell 1									
		<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>
UTRA RF Channel						Chai	nnel 1				
<u>Number</u>		<u>Channel 1</u>									
DL timeslot number			<u>0</u> <u>2</u>								
PCCPCH Ec/lor	<u>dB</u>		<u>-3</u> <u>n.a.</u>								
SCH_Ec/lor	<u>dB</u>		<u>-9</u> <u>n.a.</u>								
SCH_t <sub>offset</sub>	<u>dB</u>			<u>5</u>					<u>n.a.</u>		
DPCH_Ec/lor	<u>dB</u>			<u>n.a.</u>					Note 1		
OCNS_Ec/lor	<u>dB</u>			<u>-3,12</u>					Note 2		
$\frac{\hat{I}_{or}/I_{oc}}{}$	<u>dB</u>			<u>4</u>					<u>4</u>		
PCCPCH RSCP	<u>dBm</u>			<u>-69</u>					<u>n.a.</u>		
$I_{oc}$	<u>dBm /</u> 3,84 MHz					Ξ	<u>70</u>				
Propagation Condition			AWGN								
DL timeslot number				<u>3</u>					4		
PCCPCH_Ec/lor	<u>dB</u>			<u>n.a.</u>					<u>n.a.</u>		
SCH_Ec/lor	<u>dB</u>			<u>n.a.</u>					<u>n.a.</u>		
SCH_t <sub>offset</sub>	<u>dB</u>			<u>n.a.</u>					<u>n.a.</u>		
DPCH_Ec/lor	<u>dB</u>			<u>n.a.</u>					<u>n.a.</u>		
OCNS Ec/lor	<u>dB</u>			<u>0</u>					<u>0</u>		
$\frac{\hat{I}_{or}/I_{oc}}{}$	<u>dB</u>			<u>3</u>					<u>0</u>		<u>6</u>
PCCPCH RSCP	<u>dBm</u>			<u>n.a.</u>					<u>n.a.</u>		
$I_{oc}$	<u>dBm /</u> 3,84 MHz					≟	<u>70</u>				
Propagation Condition						ΑV	/GN				
Note 1: The DPCH level	is controlled b	y the po	wer con	trol loop							
Note 2: The power of the	OCNS chann	el that is	s added	shall ma	ke the to	tal powe	er from th	ne cell to	be equal	to lor	

<u>Table 8.6.1.2.3: Cell 2 specific parameters for correct event 1H and 1I reporting in AWGN propagation condition</u>

<u>Parameter</u>	<u>Unit</u>					Ce	<u>ll 2</u>					
		<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>	
UTRA RF Channel						Char	nnel 1					
<u>Number</u>						Cital	<u>IIIEI I</u>					
DL timeslot number				<u>0</u>					2			
PCCPCH_Ec/lor	<u>dB</u>			<u>-3</u>					<u>n.a.</u>			
SCH_Ec/lor	<u>dB</u>			<u>-9</u>					<u>n.a.</u>			
SCH_t <sub>offset</sub>	<u>dB</u>			<u>10</u>					<u>n.a.</u>			
DPCH_Ec/lor	<u>dB</u>								<u>n.a.</u>	<u>.a.</u>		
OCNS_Ec/lor	<u>dB</u>			<u>-3,12</u>					<u>0</u>			
$\hat{I}_{or}/I_{oc}$	<u>dB</u>			<u>1</u>			<u>0</u>	<u>6</u>		<u>0</u>		
PCCPCH RSCP	<u>dBm</u>			<u>-72</u>					<u>n.a.</u>			
$I_{oc}$	<u>dBm /</u> 3,84 MHz					≟	<u>70</u>					
Propagation Condition						ΑV	/GN					
DL timeslot number				<u>3</u>					<u>4</u>			
PCCPCH Ec/lor	<u>dB</u>			<u>n.a.</u>					<u>n.a.</u>			
SCH_Ec/lor	<u>dB</u>			<u>n.a.</u>					<u>n.a.</u>			
SCH_t <sub>offset</sub>	<u>dB</u>			<u>n.a.</u>					<u>n.a.</u>			
DPCH_Ec/lor	<u>dB</u>			<u>n.a.</u>					<u>n.a.</u>			
OCNS Ec/lor	<u>dB</u>			<u>0</u>					<u>0</u>			
$\hat{I}_{or}/I_{oc}$	<u>dB</u>			<u>3</u>				<u>6</u>		9	<u>)</u>	
PCCPCH RSCP	<u>dBm</u>			n.a.					n.a.	•		
$I_{oc}$	<u>dBm /</u> 3,84 MHz					<u>-</u>	<u>70</u>					
Propagation Condition						A۷	/GN					

#### 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 generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 1 in timeslot 2. The measurement reporting delay from the beginning of T2 shall be less than 480 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 7) After 5 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 2. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 9) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4.
- 10) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 4. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 11) After 5 seconds from the beginning of T4, the SS shall switch the power settings from T4 to T5.
- 12) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 2 in timeslot 4. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.

13) After 5 seconds from the beginning of T5, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

14) Repeat steps 1-13 [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	<u>Value/Remark</u>
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	<u>0</u>
-Integrity check info Measurement Information elements	Not Present
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	<u>Mouny</u>
-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)	N (B)
-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	TDD
-Measurement quantity list	1
-Measurement quantity	Timeslot ISCP
-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 synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode -Timeslot ISCP reporting indicator	TDD
-Proposed TGSN reporting required	TRUE FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator -Proposed TGSN reporting required	TRUE FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
-Intra-frequency measurement reporting criteria (10.3.7.39)	<u>criteria</u>
-Parameters required for each event	2
-Intra-frequency event identity	Event 1H
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE mode	<u>TDD</u>
-Primary CCPCH info (10.3.6.57)	TDD
-CHOICE mode -CHOICE sync case	TDD Case 2
-Timeslot	<u>Case 2</u> 0
-Cell parameters ID	Set to Cell parameters ID of cell 1
-SCTD indicator	FALSE
<u>-W</u>	Not Present
-Hysteresis	<u>0 dB</u>
-Threshold used frequency	<u>-68</u>
-Reporting deactivation threshold	Not Present
-Replacement activation threshold -Time to trigger	Not Present
- LIMP TO TRICAPE	0 ms

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# MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
<u>-SFN-SFN observed time difference</u>	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present

-Pathloss	Not Present
-Timeslot list	<u>4</u>
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>11</u>
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	<u>TDD</u>
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of cell 1

# MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
	<u>value/lemaik</u>
Message Type (10.2.17)	N · B
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	<u>1</u>
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
Timeslot list	<u>4</u>
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>1H</u>
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	<u>TDD</u>
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1

# MEASUREMENT REPORT message (step 10)

Information Element	<u>Value/remark</u>
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	<u>1</u>
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	<u>1</u>
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	4

-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>1H</u>
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	<u>TDD</u>
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of cell 1

### MEASUREMENT REPORT message (step 12)

Information Element	<u>Value/remark</u>
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	<u>1</u>
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	<u>1</u>
-Timeslot ISCP	Checked that this IE is present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>11</u>
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of cell 2

## 8.6.1.2.5 Test requirements

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T2.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T3.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T4.

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T5.

The UE shall not send event 1H or 1I triggered measurement reports, as long as the reporting criteria are not fulfilled.

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

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Other specs affected:	#	X	Test s	core spec pecification Specificat	ons	าร	¥					
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# 8.6.1.2 Event triggered 1H and 1I reporting in AWGN propagation conditions

Void.

8.6.1.2.1 Definition and applicability

8.6.1.2.1.1 3,84 Mcps TDD Option

In the event triggered reporting, 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 TDD (3.84 Mcps option) UE.

8.6.1.2.1.2 1,28 Mcps TDD Option

Void.

8.6.1.2.2 Minimum requirement

8.6.1.2.2.1 3,84 Mcps TDD Option

In CELL DCH state the measurement period for intra frequency Timeslot ISCP measurements on arbitrary DL timeslots, including Beacon timeslots is 400 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing Timeslot ISCP measurements for a total of 10 different combinations of an arbitrary DL timeslot and an intra-frequency cell, including the current serving cell.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.2.2.A and A.8.1.2

8.6.1.2.2.2 1.28 Mcps TDD Option

Void.

8.6.1.2.3 Test purpose

8.6.1.2.3.1 3,84 Mcps TDD Option

To verify that the UE meets the minimum requirement.

8.6.1.2.3.2 1.28 Mcps TDD Option

Void.

8.6.1.2.4 Method of test

8.6.1.2.4.1 3,84 Mcps TDD Option

8.6.1.2.4.1.1 Initial conditions

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

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

The test parameters are given in Tables 8.6.1.2.1, 8.6.1.2.2 and 8.6.1.2.3. The test consists of five successive time periods, with a time duration of T1, T2, T3, T4 and T5 respectively. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency.

In the measurement control information it shall be indicated to the UE that event-triggered reporting with event 1H and event 1I shall be used and that Timeslot ISCP and P-CCPCH RSCP shall be reported together with event 1H and 1I. Measurement control information shall be sent to the UE before the beginning of time period T1.

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The UL DPCH shall be transmitted in timeslot 10. In addition, timeslots 3 and 4 shall be allocated as DL timeslots. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing.

<u>Table 8.6.1.2.1: General test parameters for correct event 1H and event 1I reporting in AWGN propagation condition</u>

Para	meter	Unit	<u>Value</u>	Comment
DCH parame	DCH parameters		DL Reference Measurement	As specified in TS 25.102 section A.2.2
			Channel 12.2 kbps	
Power Contro	<u>)                                    </u>		<u>On</u>	
Target quality	<u>value on </u>	<b>BLER</b>	<u>0.01</u>	
<u>DTCH</u>	•			
<u>Initial</u>	Active cell		Cell 1	
conditions	Neighbour cell		<u>Cell 2</u>	
Final condition	Active cell		<u>Cell 1</u>	
HCS			Not used	
<u>O</u>		dB	<u>0</u>	Cell individual offset. This value shall be
_		<u> </u>	<u>s</u>	used for all cells in the test.
Timeslot list of	ell 1		2, 3, 4	Timeslot numbers in IE "Cell info" for Cell 1
Timeslot list of	cell 2		4	Timeslot numbers in IE "Cell info" for Cell 2
	Threshold used frequency		-68	Threshold 1 applicable for event 1H, cell 1
				timeslots 2, 4 and cell 2 timeslot 4
Threshold us	ed frequency	<u>dBm</u>	<u>-73</u>	Threshold 2 applicable for event 1H, cell 1
				timeslots 2, 3, 4 and cell 2 timeslot 4
Threshold us	<u>ed frequency</u>	<u>dBm</u>	<u>-67</u>	Applicable for event 1I, cell 1 timeslots 2, 4
				and cell 2 timeslot 4
<u>Hysteresis</u>		<u>dB</u>	<u>0</u>	
Time to Trigg		<u>ms</u>	<u>0</u>	
Filter coefficie			<u>0</u>	
Monitored ce	II list size		6 TDD neighbours on Channel 1	Cell 2 shall belong to the monitored set
<u>T1</u>		<u>S</u>	<u>5</u>	
<u>T2</u>		<u>S</u>	<u>5</u>	
<u>T3</u>		<u>s</u>	<u>5</u>	
<u>T4</u>		<u>S</u>	5	
<u>T5</u>		<u>S</u>	<u>5</u>	

<u>Table 8.6.1.2.2: Cell 1 specific parameters for correct event 1H and 1I reporting in AWGN propagation condition</u>

<u>Parameter</u>	<u>Unit</u>	Cell 1										
		<u>T1</u>	<u>T1                                    </u>						<u>T3</u>	<u>T4</u>	<u>T5</u>	
UTRA RF Channel						Chai	nnel 1					
<u>Number</u>						Onai	ilici i					
DL timeslot number				<u>0</u>					<u>2</u>			
PCCPCH Ec/lor	<u>dB</u>			<u>-3</u>					<u>n.a.</u>			
SCH_Ec/lor	<u>dB</u>			<u>-9</u>			<u>n.a.</u>					
SCH_t <sub>offset</sub>	<u>dB</u>			<u>5</u>					<u>n.a.</u>			
DPCH_Ec/lor	<u>dB</u>			<u>n.a.</u>					Note 1			
OCNS_Ec/lor	<u>dB</u>			<u>-3,12</u>					Note 2			
$\frac{\hat{I}_{or}/I_{oc}}{}$	<u>dB</u>		4				4					
PCCPCH RSCP	<u>dBm</u>		<u>-69</u>					<u>n.a.</u>				
$I_{oc}$	<u>dBm /</u> 3,84 MHz	<u>-70</u>										
Propagation Condition						ΑV	/GN					
DL timeslot number				<u>3</u>					4			
PCCPCH_Ec/lor	<u>dB</u>			<u>n.a.</u>			<u>n.a.</u>					
SCH_Ec/lor	<u>dB</u>			<u>n.a.</u>					<u>n.a.</u>			
SCH_t <sub>offset</sub>	<u>dB</u>			<u>n.a.</u>					<u>n.a.</u>			
DPCH_Ec/lor	<u>dB</u>			<u>n.a.</u>					<u>n.a.</u>			
OCNS Ec/lor	<u>dB</u>			<u>0</u>					<u>0</u>			
$\frac{\hat{I}_{or}/I_{oc}}{}$	<u>dB</u>		3						<u>0</u>		<u>6</u>	
PCCPCH RSCP	<u>dBm</u>	n.a. n.a.										
$I_{oc}$	<u>dBm /</u> 3,84 MHz	<u>-70</u>										
Propagation Condition		<u>AWGN</u>										
Note 1: The DPCH level	is controlled b	y the po	wer con	trol loop								
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor												

<u>Table 8.6.1.2.3: Cell 2 specific parameters for correct event 1H and 1I reporting in AWGN propagation condition</u>

<u>Parameter</u>	<u>Unit</u>					Ce	<u>II 2</u>					
		<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>	
UTRA RF Channel						Char	nel 1					
<u>Number</u>						Ollai	<u>IIICI I</u>					
DL timeslot number				<u>0</u>					2			
PCCPCH_Ec/lor	<u>dB</u>			<u>-3</u>					<u>n.a.</u>			
SCH Ec/lor	<u>dB</u>			<u>-9</u>					<u>n.a.</u>			
SCH_t <sub>offset</sub>	<u>dB</u>			<u>10</u>					<u>n.a.</u>			
DPCH_Ec/lor	<u>dB</u>			<u>n.a.</u>					<u>n.a.</u>			
OCNS Ec/lor	<u>dB</u>		<u>-3,12</u>						<u>0</u>			
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		1				<u>0</u>	<u>6</u>		<u>0</u>		
PCCPCH RSCP	<u>dBm</u>		<u>-72</u>				n.a.					
$I_{oc}$	<u>dBm /</u> 3,84 MHz	<u>-70</u>										
Propagation Condition						AW	'GN					
DL timeslot number				<u>3</u>					<u>4</u>			
PCCPCH_Ec/lor	<u>dB</u>			<u>n.a.</u>					<u>n.a.</u>			
SCH_Ec/lor	<u>dB</u>			<u>n.a.</u>					<u>n.a.</u>			
SCH toffset	<u>dB</u>			<u>n.a.</u>					<u>n.a.</u>			
DPCH Ec/lor	<u>dB</u>		n.a. n.a.									
OCNS Ec/lor	<u>dB</u>		0 0									
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	3			<u>6</u> <u>0</u>			<u>)</u>				
PCCPCH RSCP	<u>dBm</u>	n.a. n.a.										
$I_{oc}$	<u>dBm /</u> 3,84 MHz	<u>-70</u>										
Propagation Condition			AWGN									

#### 8.6.1.2.4.1.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 1 in timeslot 2. The measurement reporting delay from the beginning of T2 shall be less than 480 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 7) After 5 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 2. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 9) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4.
- 10) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 4. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 11) After 5 seconds from the beginning of T4, the SS shall switch the power settings from T4 to T5.
- 12) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 2 in timeslot 4. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.

13) After 5 seconds from the beginning of T5, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

14) Repeat steps 1-13 [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)	
<u>UE information elements</u>	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	4
-Measurement Identity -Measurement Command (10.3.7.46)	1 Modify
-Measurement Reporting Mode (10.3.7.49)	<u>iviodity</u>
-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) -CHOICE mode	0 TDD
-Measurement quantity list	100
-Measurement quantity -Measurement quantity	Timeslot ISCP
-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 synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	<u>FALSE</u>
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	TALOL
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	<u>TDD</u>
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE FALSE
-Pathloss reporting indicator -Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting quantities for detected set cells (10.3.7.3)  -Reporting cell status (10.3.7.61)	NOT FTESETIL
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	1
-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)	2
-Parameters required for each event	2 Event 1H
-Intra-frequency event identity -Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	<u>0 dB</u>
-Threshold used frequency	<u>-68</u>
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms Infinity
-Amount of reporting -Reporting interval	0 ms (Note 1)
-Reporting interval -Reporting cell status	Not Present
-Intra-frequency event identity	Event 1H
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present

Information Element/Group name	Value/Remark					
	Not Present					
-Hysteresis	<u>0 dB</u>					
-Threshold used frequency	<u>-73</u>					
-Reporting deactivation threshold	Not Present					
-Replacement activation threshold	Not Present					
-Time to trigger	<u>0 ms</u>					
-Amount of reporting	<u>Infinity</u>					
-Reporting interval	<u>0 ms (Note 1)</u>					
-Reporting cell status	Not Present					
-Intra-frequency event identity	Event 1I					
-Triggering condition 2	Not Present					
-Reporting Range Constant	Not Present					
-Cells forbidden to affect Reporting Range	Not Present					
	Not Present					
-Hysteresis	<u>0 dB</u>					
-Threshold used frequency	<u>-67</u>					
-Reporting deactivation threshold	Not Present					
-Replacement activation threshold	Not Present					
-Time to trigger	<u>0 ms</u>					
-Amount of reporting	<u>Infinity</u>					
-Reporting interval	<u>0 ms (Note 1)</u>					
-Reporting cell status	Not Present					
Physical channel information elements						
-DPCH compressed mode status info (10.3.6.34)	Not Present					
Note 1: Reporting interval = 0 ms means no periodical reporting						

# MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	<u>4</u>
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>11</u>
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	<u>TDD</u>
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of cell 1

# MEASUREMENT REPORT message (step 8)

Information Element	<u>Value/remark</u>
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1

Measured Results (10.3.7.44)	Later for many and Manager and an adda that
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	<u>4</u>
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>1H</u>
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	<u>TDD</u>
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of cell 1

# MEASUREMENT REPORT message (step 10)

Information Element	<u>Value/remark</u>
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	<u>1</u>
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	<u>1</u>
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	<u>4</u>
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>1H</u>
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	<u>TDD</u>
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of cell 1

# MEASUREMENT REPORT message (step 12)

İ	Information Element	<u>Value/remark</u>
l	Message Type (10.2.17)	
	Integrity check info	Not Present
	Measurement identity	1

Measured Results (10.3.7.44)

-CHOICE Measurement

-Intra-frequency measured results

-Cell measured results (10.3.7.3)

-Cell identity

-SFN-SFN observed time difference

-Cell synchronisation info

-CHOICE mode

-Cell parameters ID

-Proposed TGSN

-Primary CCPCH RSCP

-Pathloss

-Timeslot list

-Timeslot ISCP

Measured results on RACH

Additional measured results

Event results (10.3.7.7)

-CHOICE event result

-Intra-frequency event identity

-Cell measurement event results (10.3.7.4)

-CHOICE mode

-Primary CCPCH info (10.3.6.57)

-CHOICE mode

-Cell parameters ID

Intra-frequency Measured results list

1

Not Present

Not Present

TDD

Set to Cell parameters ID of cell 2

Not Present

Checked that this IE is present

**Not Present** 

| 1

Checked that this IE is present

Not Present

**Not Present** 

Intra-frequency measurement event results

1

**TDD** 

<u>TD</u>D

Set to Cell parameters ID of cell 2

8.6.1.2.4.2 1.28 Mcps TDD Option

Void.

8.6.1.2.5 Test requirements

8.6.1.2.5.1 3,84 Mcps TDD Option

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T2.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T3.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T4.

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T5.

The UE shall not send event 1H or 1I triggered measurement reports, as long as the reporting criteria are not fulfilled.

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

8.6.1.2.5.2 1.28 Mcps TDD Option

Void.

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

CHANGE REQUEST											CR-Form-v7	
×	34.	.122	CR	134	жr	ev	-	$\mathfrak{H}$	Current vers	ion: 3	3 <mark>.10.</mark> 0	) <sup>#</sup>
For <u><b>HELP</b></u> on u	ising t	his for	m, see	bottom o	of this pag	ge or lo	ook a	at the	pop-up text	over t	he ₩ sy	mbols.
Proposed change	affec	<i>ts:</i> (	JICC a	pps# <mark> </mark>	] N	1E <mark>X</mark>	Rad	io Ac	cess Networ	k	Core N	etwork
Title: ∺		dition o		ect report	ing of nei	ghbou	rs in	fadir	ng propagation	on cor	ndition te	est case
Source: #	T1-	RF										
Work item code: ₩									Date: ₩	13/0	1/2003	
Category:  # F Use one of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)  D (editorial modification) C (functional modification) D (editorial modification) C (functional m								) ) )				
Reason for change	e: X				rrect repo current ve				ours in fading 122.	j propa	agation (	condition
Summary of chang	<b>уе:</b> Ж	Intro test		of Corre	ct reporti	ng of r	neigh	bour	s in fading p	ropaga	ation cor	nditions
Consequences if not approved:	Ж	Incor	nsisten	cy 34.122	2 and 25.	123						
Clauses affected:	¥	8.6.1	.3									
Other specs affected:	*	Y N X X	Test s	core spe specificat Specifica		S	*					
Other comments:	$\aleph$	-										

## 8.6.1.3 Correct reporting of neighbours in fading propagation conditions

#### 8.6.1.3.1 Definition and applicability

In the event triggered reporting, 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 TDD UE.

8.6.1.3.2 Minimum requirement

The requirements are the same as in sub clause 8.6.1.1.2

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.2.2.1, 8.1.2.2.2 and A.8.1.3

8.6.1.3.3 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.

8.6.1.3.4 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 Tables 8.6.1.3.1 and 8.6.1.3.2. The test consists of one time period with time duration of T1. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing.

<u>In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G.</u>

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The TTI of the UL DCCH shall be 20ms.

<u>Table 8.6.1.3.1: General test parameters for correct reporting of neighbours in fading propagation condition</u>

Para	meter	<u>Unit</u>	<u>Value</u>	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Contro	<u>l</u>		<u>On</u>	
Target quality value on DTCH		BLER	<u>0.01</u>	
<u>Initial</u>	Active cell		Cell 1	
conditions			Cell 2	
Final condition	Active cell		Cell 1	
<u>O</u>		<u>dB</u>	<u>0</u>	Cell individual offset. This value shall be used for all cells in the test.
<u>Hysteresis</u>		<u>dB</u>	<u>0</u>	
Time to Trigg	<u>er</u>	<u>ms</u>	<u>200</u>	
Filter coefficie	<u>ent</u>		<u>0</u>	
Monitored cell list size			6 TDD neighbours on Channel 1	Sent before the beginning of time period T1
<u>T1</u>		<u>s</u>	<u>200</u>	

<u>Table 8.6.1.3.2: Cell specific test parameters for correct reporting of neighbours in fading propagation condition</u>

<u>Parameter</u>	<u>Unit</u>	Ce	ell <u>1</u>	Ce	ell 2					
		<u>T1</u>	<u>T1</u>	<u>T1</u>	<u>T1</u>					
DL timeslot number		<u>0</u>	<u>8</u>	<u>o</u>	<u>8</u>					
UTRA RF Channel Number		Cha	nnel 1	Channel 1						
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>n.a.</u>	<u>-3</u>	<u>n.a.</u>					
SCH_Ec/lor	<u>dB</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>					
SCH_t <sub>offset</sub>		<u>0</u>	<u>0</u>	<u>2</u>	<u>2</u>					
PICH_Ec/lor	<u>dB</u>	<u>n.a.</u>	<u>-3</u>	<u>n.a.</u>	<u>-3</u>					
OCNS Ec/lor	<u>dB</u>	<u>-3,12</u>	<u>-3,12</u>	<u>-3,12</u>	<u>-3,12</u>					
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>7</u>	<u>7</u>	<u>2</u>	<u>2</u>					
PCCPCH RSCP	<u>dBm</u>	<u>-66</u>	n.a.	<u>-71</u>	<u>n.a.</u>					
$I_{oc}$	<u>dBm/ 3,84</u> <u>MHz</u>		-70							
Propagation Condition		Case 4 as specified in Annex DTS25.102 Annex B								

#### 8.6.1.3.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL\_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 200 seconds from the beginning of T1, the UE is switched off.
- 6) Repeat steps 1-5 [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	<u>Value/Remark</u>
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	<u>0</u> Not Present
-Integrity check info Measurement Information elements	Not Present
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	Modify
-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)	N · B
-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)CHOICE mode	
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-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 synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	<u>FALSE</u>
-CHOICE mode	<u>TDD</u>
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator -Reporting quantities for monitored set cells (10.3.7.5)	<u>FALSE</u>
-Reporting quantities for monitored set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	<u>FALSE</u>
-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
-Maximum number of reported cells	monitored set on used frequency 1
-Measurement validity (10.3.7.51)	L Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
<u> </u>	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	<u>1</u>
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57) -CHOICE mode	TDD
-CHOICE sync case	Case 2
-Timeslot	0
-Cell parameters ID	0
-SCTD indicator	FALSE
<del>-W</del>	Not Present
-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	<u>Infinity</u>

Information Element/Group name	<u>Value/Remark</u>
-Reporting interval	<u>0 ms (Note 1)</u>
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical report	ting

## 8.6.1.3.5 Test requirements

The number of Event 1G triggered measurement reports during time period T1 shall be less than 60.

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.

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## 8.6.1.3 Correct reporting of neighbours in fading propagation conditions

#### 8.6.1.3.1 3,84 Mcps TDD Option

#### 8.6.1.3.1.1 Definition and applicability

In the event triggered reporting, 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 TDD (3.84 Mcps option) UE.

## 8.6.1.3.1.2 Minimum requirement

The requirements are the same as in sub clause 8.6.1.1.2

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.2.2.1, 8.1.2.2.2 and A.8.1.3

## 8.6.1.3.1.3 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.

#### 8.6.1.3.1.4 Method of test

#### 8.6.1.3.1.4.1 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 Tables 8.6.1.3.1 and 8.6.1.3.2. The test consists of one time period with time duration of T1. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing.

<u>In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G.</u>

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The TTI of the UL DCCH shall be 20ms.

<u>Table 8.6.1.3.1: General test parameters for correct reporting of neighbours in fading propagation condition</u>

Para	ameter	<u>Unit</u>	Value	Comment			
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2			
Power Control			<u>On</u>				
Target quality value on DTCH		BLER	<u>0.01</u>				
<u>Initial</u>	Active cell		Cell 1				
conditions	Neighbour cell		Cell 2				
Final condition	Active cell		Cell 1				
<u>O</u>		<u>dB</u>	<u>0</u>	Cell individual offset. This value shall be used for all cells in the test.			
<u>Hysteresis</u>		<u>dB</u>	<u>0</u>				
Time to Trigg	<u>ier</u>	<u>ms</u>	<u>200</u>				
Filter coeffici	<u>ent</u>		0				
Monitored cell list size			6 TDD neighbours on Channel 1	Sent before the beginning of time period T1			
<u>T1</u>	•	<u>s</u>	<u>200</u>				

<u>Table 8.6.1.3.2: Cell specific test parameters for correct reporting of neighbours in fading propagation condition</u>

Parameter	<u>Unit</u>	Ce	<u>II 1</u>	Ce	ell 2					
		<u>T1</u>	<u>T1</u>	<u>T1</u>	<u>T1</u>					
DL timeslot number		<u>o</u>	<u>8</u>	<u>0</u>	<u>8</u>					
UTRA RF Channel Number		Char	nnel 1	<u>Channel 1</u>						
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>n.a.</u>	<u>-3</u>	<u>n.a.</u>					
SCH_Ec/lor	<u>dB</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>					
SCH_t <sub>offset</sub>		<u>0</u>	<u>0</u>	<u>2</u>	<u>2</u>					
PICH_Ec/lor	<u>dB</u>	<u>n.a.</u>	<u>-3</u>	<u>n.a.</u>	<u>-3</u>					
OCNS Ec/lor	<u>dB</u>	<u>-3,12</u>	<u>-3,12</u>	<u>-3,12</u>	<u>-3,12</u>					
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>7</u>	<u>7</u>	<u>2</u>	<u>2</u>					
PCCPCH RSCP	<u>dBm</u>	<u>-66</u>	<u>n.a.</u>	<u>-71</u>	<u>n.a.</u>					
$I_{oc}$	<u>dBm/ 3,84</u> <u>MHz</u>	<u>-70</u>								
Propagation Condition		Case 4 as specified in Annex DTS25.102 Annex B								

#### 8.6.1.3.1.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL\_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 200 seconds from the beginning of T1, the UE is switched off.
- 6) Repeat steps 1-5 [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)	
<u>UE information elements</u>	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements -Measurement Identity	4
-Measurement Command (10.3.7.46)	1 Modify
-Measurement Reporting Mode (10.3.7.49)	<u>iviouny</u>
-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) -CHOICE mode	<u>0</u>   TDD
-Measurement quantity list	100
-Measurement quantity -Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	- mary cor or a
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	<u>FALSE</u>
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	<u>FALSE</u>
<ul> <li>-Proposed TGSN reporting required</li> </ul>	<u>FALSE</u>
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -CHOICE reported cell	Papart all active act cells a cells within
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-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)	
-Parameters required for each event	1 1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present Not Present
<ul> <li>Reporting Range Constant</li> <li>Cells forbidden to affect Reporting Range</li> </ul>	Not Present Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
	<u>0 ms</u>
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporti	Not Present
<u>ivote 1. Reporting interval = 0 ms means no periodical reporti</u>	<u>ny</u>

8.6.1.3.1.5 Test requirements

The number of Event 1G triggered measurement reports during time period T1 shall be less than 60.

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.

Void.

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## 8.6.2 TDD 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 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 TDD UE.

#### 8.6.2.1.2 Minimum requirement

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

$$T_{\text{identify inter}} = Max \left\{ 5000, N_{\text{basic identify TDD inter}} \cdot \frac{T_{\text{measurement period TDD inter}}}{N_{\text{TDD inter}}} \cdot N_{\text{Freq}} \right\} ms$$

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

When idle intervals are used for TDD inter frequency measurements, the UE shall be capable of performing P-CCPCH RSCP measurements for  $X_{measurement\ TDD\ inter}$  inter-frequency TDD cells per TDD frequency of the monitored set.

The UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in section 9 and with a measurement period of T<sub>measurement inter-</sub>.

$$T_{\text{measurement inter}} = Max \bigg\{ T_{\text{measurement period TDD inter}} , N_{\text{basic measurement TDD inter}} \cdot \frac{T_{\text{measurement period TDD inter}}}{N_{\text{TDD inter}}} \cdot N_{\textit{Freq}} \bigg\} ms$$

If the UE does not require idle intervals to perform TDD inter-frequency measurements, the measurement period for inter frequency P-CCPCH RSCP measurements shall be 480 ms.

#### Where,

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

 $T_{\text{measurement period inter}} = 480 \text{ ms.}$  The time period used for calculating the measurement period  $T_{\text{measurement inter}}$ 

#### for inter frequency P-CCPCH RSCP measurements.

 $N_{\text{TDD.inter}}$ : This is the available number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period  $T_{\text{TDD inter}}$ . The UE shall consider that a measurement opportunity on a Beacon timeslot of an inter-frequency TDD cell is provided if an idle interval of length equal to or greater than 3 timeslots less 2\*0.5 ms implementation margin for frequency switching per idle interval completely overlaps in time with the Beacon timeslot of the inter-frequency TDD cell.

N<sub>basic identify TDD inter</sub> = 80. This is a number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period used in the inter frequency TDD equation where the maximum allowed time for the UE to identify a new detectable inter-frequency TDD cell is defined.

 $N_{\text{basic measurement TDD inter}} = 5$ . This is a number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period  $T_{\text{TDD inter}}$  used in the inter-frequency TDD equation where the measurement period for inter-frequency P-CCPCH RSCP measurements is defined.

N<sub>Freq TDD</sub>: This is the number of TDD 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 25.123 [2]. When L3 filtering is used, an additional delay can be expected.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.3.1, 8.1.2.3.2 and A.8.2.1

#### 8.6.2.1.3 Test purpose

To verify that the UE meets the minimum requirement.

#### 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 parameters are given in Table 8.6.2.1.1 and 8.6.2.1.2. The test consists of 2 successive time periods, with a time duration T1 and T2. Two cells shall be present in the test, cell 1 being the serving cell and cell 2 being a UTRA TDD neighbour cell on the unused frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

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

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. The TTI of the uplink DCCH shall be 20 ms.

Table 8.6.2.1.1: General test parameters for Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition

Pa	<u>rameter</u>	<u>Unit</u>	<u>Value</u>	Comment			
DPCH parar	DPCH parameters		DL Reference Measurement	As specified in Annex CTS 25.102			
			Channel 12.2 kbps	annex A.2.2			
Power Conti	<u>rol</u>		<u>On</u>				
Target quali	ty value on DTCH	BLER	<u>0.01</u>				
<u>Initial</u>	Active cell		Cell 1	UTRA TDD cell			
conditions	conditions Neighbour cell		Cell 2	UTRA TDD cell			
Threshold n	on used frequency	<u>dB</u>	<u>-71</u>	Applicable for event 2C			
<u>Hysteresis</u>		<u>dB</u>	<u>0</u>	Applicable for event 2C			
Time to Trig	<u>ger</u>	<u>ms</u>	<u>0</u>				
Filter coeffic	ient		<u>0</u>				
Monitored co	ell list size		24 on channel 1				
			16 on channel 2				
<u>T1</u>		<u>s</u>	<u>10</u>				
<u>T2</u>		<u>s</u>	<u>10</u>				

<u>Table 8.6.2.1.2: Cell specific parameters for Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition</u>

<u>Parameter</u>	<u>Unit</u>		Ce	<u>II 1</u>		Cell 2				
Timeslot Number		(	<u>)</u>	8	<u>8</u>	(	<u>)</u>	<u>8</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>	
UTRA RF Channel Number			Char	nel 1		<u>Channel 2</u>				
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>	_		
SCH_Ec/lor	<u>dB</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	
SCH t <sub>offset</sub>		<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>15</u>	<u>15</u>	<u>15</u>	<u>15</u>	
PICH_Ec/lor				-3	<u>-3</u>			-3	-3	
<u>OCNS</u>		<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	3	3	3	3	-Infinity	<u>9</u>	-Infinity	<u>9</u>	
I <sub>oc</sub>	dBm/3.8 4 MHz				<u>-</u> :	70				
PCCPCH_RSCP	dB	<u>-70</u>	<u>-70</u>			-Infinity	<u>-64</u>			
				•		•		•	•	
Propagation Condition					AW	/GN_				

#### 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 generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2c for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5080 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 7) After 10 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 8) Repeat steps 1-7 [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	<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)	AMPLO
-Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode	AM RLC Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	minor maquency modearement
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE inter-frequency cell removal	No inter-frequency cells removed
-New inter-frequency cells	1 1
-Inter-frequency cell id	1
-Frequency info (10.3.6.36)	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2
-Cell info (10.3.7.2) -Cell individual offset	Not Present
-Reference time difference to cell	Not Present Not Present
-Read SFN indicator	False
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	100
-CHOICE mode	TDD
-CHOICE Sync case	2
-Timeslot	<u>0</u>
-cell parameters ID	Set to cell parameters ID of cell 2
-SCTD indicator	<u>FALSE</u>
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2
	as described in Table 8.6.2.1.2
-Timesllot list	Not Present
-Cell selection and re-selection info -Cell for measurement	Not Present Not Present
-Inter-frequency measurement quantity (10.3.7.18)	Not Flesent
-CHOICE reporting critera	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
UTRA carrier RSSI	
Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE TRUE
-Primary CCPCH RSCP reporting indicator	TRUE FALSE
-Pathloss reporting indicator -Reporting cell status (10.3.7.61)	Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting
	criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	<u>1</u>
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	<u>0 dB</u>
-Time to trigger	<u>0 ms</u>
-Reporting Cell Status (10.361)	

Information Element/Group name	<u>Value/Remark</u>
-CHOICE reported cell	Report cells within active and/or monitored
	set on used frequency or within virtual
	active and/or monitored set on non-used
	frequency
-Maximum number of reported cells	<u>3</u>
-Parameters required for each non-used frequenc	
- Threshold non-used frequency	<u>-71</u>
- W non-used frequency	<u>1</u>
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

## MEASUREMENT REPORT message (step 6)

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

## 8.6.2.1.5 Test requirements

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 5080ms from the beginning of time period T2.

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

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

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# 8.6.2 TDD inter frequency Measurements

## 8.6.2.1 Correct reporting of neighbours in AWGN propagation condition

Void.

#### 8.6.2.1.1 Definition and applicability

#### 8.6.2.1.1.1 3,84 Mcps TDD Option

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 TDD (3.84 Mcps option) UE.

8.6.2.1.1.2 1,28 Mcps TDD Option

Void.

8.6.2.1.2 Minimum requirement

8.6.2.1.2.1 3,84 Mcps TDD Option

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

$$\underline{\qquad} T_{\text{identify inter}} = Max \left\{ 5000, N_{\text{basic identify TDD inter}} \cdot \frac{T_{\text{measurement period TDD inter}}}{N_{\text{TDD inter}}} \cdot N_{\text{Freq}} \right\} ms$$

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

When idle intervals are used for TDD inter frequency measurements, the UE shall be capable of performing P-CCPCH RSCP measurements for X<sub>measurement TDD inter</sub> inter-frequency TDD cells per TDD frequency of the monitored set.

The UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in section 9 and with a measurement period of T<sub>measurement inter-</sub>

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

If the UE does not require idle intervals to perform TDD inter-frequency measurements, the measurement period for inter frequency P-CCPCH RSCP measurements shall be 480 ms.

Where,

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

<u>T\_measurement\_period inter</u> = 480 ms. The time period used for calculating the measurement period T\_measurement\_inter for inter frequency P-CCPCH RSCP measurements.

N<sub>TDD inter</sub>: This is the available number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period T<sub>TDD inter</sub>. The UE shall consider that a measurement opportunity on a Beacon timeslot of an inter-frequency TDD cell is provided if an idle interval of length equal to or greater than 3

timeslots less 2\*0.5 ms implementation margin for frequency switching per idle interval completely overlaps in time with the Beacon timeslot of the inter-frequency TDD cell.

N<sub>basic identify TDD inter</sub> = 80. This is a number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period used in the inter frequency TDD equation where the maximum allowed time for the UE to identify a new detectable inter-frequency TDD cell is defined.

 $N_{\text{basic measurement TDD inter}} = 5$ . This is a number of measurement opportunities for a Beacon timeslot of an interfrequency TDD cell during the time period  $T_{\text{TDD inter}}$  used in the inter-frequency TDD equation where the measurement period for inter-frequency P-CCPCH RSCP measurements is defined.

N<sub>Freq TDD</sub>: This is the number of TDD 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 25.123 [2]. When L3 filtering is used, an additional delay can be expected.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.3.1, 8.1.2.3.2 and A.8.2.1

8.6.2.1.2.2 1.28 Mcps TDD Option

Void.

8.6.2.1.3 Test purpose

8.6.2.1.3.1 3,84 Mcps TDD Option

To verify that the UE meets the minimum requirement.

8.6.2.1.3.2 1.28 Mcps TDD Option

Void.

8.6.2.1.4 Method of test

8.6.2.1.4.1 3,84 Mcps TDD Option

8.6.2.1.4.1.1 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 8.6.2.1.1 and 8.6.2.1.2. The test consists of 2 successive time periods, with a time duration T1 and T2. Two cells shall be present in the test, cell 1 being the serving cell and cell 2 being a UTRA TDD neighbour cell on the unused frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

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

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. The TTI of the uplink DCCH shall be 20 ms.

<u>Table 8.6.2.1.1: General test parameters for Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition</u>

Pa	rameter	<u>Unit</u>	<u>Value</u>	Comment
DPCH parar	<u>neters</u>		DL Reference Measurement	As specified in Annex CTS 25.102
			Channel 12.2 kbps	annex A.2.2
Power Contr	<u>ol</u>		<u>On</u>	
Target qualit	ty value on DTCH	BLER	0.01	
<u>Initial</u>	Active cell		Cell 1	UTRA TDD cell
conditions	Neighbour cell		Cell 2	UTRA TDD cell
Threshold no	on used frequency	<u>dB</u>	<u>-71</u>	Applicable for event 2C
Hysteresis		<u>dB</u>	<u>0</u>	Applicable for event 2C
Time to Trig	<u>ger</u>	<u>ms</u>	<u>0</u>	
Filter coeffic	<u>ient</u>		0	
Monitored cell list size			24 on channel 1	
			16 on channel 2	
<u>T1</u>		<u>s</u>	<u>10</u>	
<u>T2</u>		<u>s</u>	<u>10</u>	

<u>Table 8.6.2.1.2: Cell specific parameters for Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition</u>

<u>Parameter</u>	<u>Unit</u>	<u>Cell 1</u>				Cell 2				
Timeslot Number		(	<u>)</u>	<u>8</u>		<u>0</u>		<u>8</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>	
UTRA RF Channel Number			Char	nnel 1			Channel 2			
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>	_		
SCH_Ec/lor	<u>dB</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	
SCH t <sub>offset</sub>		<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>15</u>	<u>15</u>	<u>15</u>	<u>15</u>	
PICH_Ec/lor				<u>-3</u>	<u>-3</u>			<u>-3</u>	<u>-3</u>	
<u>OCNS</u>		<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	3	3	3	3	-Infinity	<u>9</u>	-Infinity	<u>9</u>	
I <sub>oc</sub>	dBm/3.8 4 MHz				<u>-</u> :	<u>70</u>				
PCCPCH_RSCP	<u>dB</u>	<u>-70</u>	<u>-70</u>			-Infinity	<u>-64</u>			
Propagation Condition					AW	/GN_				

#### 8.6.2.1.4.1.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2c for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5080 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 7) After 10 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

## 8) Repeat steps 1-7 [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	<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)	AMPLO
-Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode	AM RLC 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 requestoy measurement
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE inter-frequency cell removal	No inter-frequency cells removed
-New inter-frequency cells	1 1
-Inter-frequency cell id	1
-Frequency info (10.3.6.36)	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2
-Cell info (10.3.7.2) -Cell individual offset	Not Present
-Reference time difference to cell	Not Present Not Present
-Read SFN indicator	False
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	<u> </u>
-CHOICE mode	TDD
-CHOICE TDD option	3.84 Mcps TDD
-CHOICE Sync case	$\begin{bmatrix} \frac{2}{0} \end{bmatrix}$
Timeslot	
-cell parameters ID	Set to cell parameters ID of cell 2
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2
-Timesllot list	as described in Table 8.6.2.1.2 Not Present
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	<u></u>
-CHOICE reporting critera	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	<u>TDD</u>
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	
-Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	No negati
<u>-SFN-SFN observed time difference reporting indicator</u>	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode -Timeslot ISCP reporting indicator	TDD FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting
	<u>criteria</u>
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	0 dB
Time to trigger	<u>0 ms</u>

Information Element/Group name	<u>Value/Remark</u>
-Reporting Cell Status (10.361)	
-CHOICE reported cell	Report cells within active and/or monitored
	set on used frequency or within virtual
	active and/or monitored set on non-used
	<u>frequency</u>
-Maximum number of reported cells	<u>3</u>
<ul> <li>-Parameters required for each non-used frequenc</li> </ul>	
- Threshold non-used frequency	<u>-71</u>
- W non-used frequency	<u>1</u>
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

## MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	<u>1</u>
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	<u>1</u>
<u>-Frequency info</u>	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	<u>1</u>
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	lates for some or services at a contract to
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity -Inter-frequency cells	2 <u>C</u>
-Inter-frequency ceris -Frequency Info	<u> </u>
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2
-CHOICE mode	TDD
-Primary CCPCH Info	<u>IDD</u>
-CHOICE mode	TDD
-CHOICE TDD Option	3.84 Mcps TDD
-CHOICE Sync Case	Not Present
-Cell Parameters ID	Set to cell parameters ID of Cell 2
-SCTD Indicator	FALSE

# 8.6.2.1.4.2 1.28 Mcps TDD Option

Void.

## 8.6.2.1.5 Test requirements

## 8.6.2.1.5.1 3,84 Mcps TDD Option

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 5080ms from the beginning of time period T2.

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

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

8.6.2.1.5.2 1.28 Mcps TDD Option

Void.

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#### 8.6.3 FDD measurements

#### 8.6.3.1 Correct reporting of FDD neighbours in AWGN propagation condition

#### Void.

#### 8.6.3.1.1 Definition and applicability

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

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

#### 8.6.3.1.2 Minimum requirement

When idle intervals are used for inter-frequency FDD measurements, the UE shall be able to identify a new detectable inter-frequency FDD cell belonging to the monitored set within

$$T_{\text{identify FDD inter}} = Max \left\{ 5000, T_{\text{basic identify FDD inter}} \cdot \frac{T_{\text{measurement period FDD inter}}}{T_{\text{FDD inter}}} \cdot N_{\text{Freq}} \right\} ms$$

If the UE does not require idle intervals to perform FDD inter-frequency measurements, the UE shall be able to identify a new detectable inter-frequency FDD cell belonging to the monitored set within 5000 ms.

When L3 filtering is used an additional delay can be expected.

An inter-frequency FDD cell shall be considered detectable, when CPICH Ec/Io > -20 dB, SCH Ec/Io > -17 dB and SCH Ec/Io is equally divided between primary synchronisation code and secondary synchronisation code.

When idle intervals are used for FDD inter frequency measurements, the UE physical layer shall be capable of reporting measurements to higher layers with measurement period given by

$$T_{\text{measurement FDD inter}} = \textit{Max} \left\{ T_{\text{measurement period FDD inter}}, T_{\text{basic measurement FDD inter}} \cdot \frac{T_{\text{measurement period FDD inter}}}{T_{\text{FDD inter available}}} \cdot N_{\textit{Freq,FDD}} \right\} \textit{ms}$$

If the UE does not require idle intervals to perform FDD inter-frequency measurements, the measurement period for inter frequency CPICH measurements shall be 480 ms.

The UE shall be capable of performing CPICH measurements for  $X_{measurement\ FDD\ inter}$  inter-frequency FDD cells per frequency of the monitored set and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of  $T_{measurement\ FDD\ inter2}$ 

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

 $\underline{T}_{\underline{\text{measurement\_period FDD inter}} \equiv 480 \text{ ms.}$  The time period used for calculating the measurement period  $\underline{T}_{\underline{\text{measurement\_FDD inter}}}$  for inter frequency CPICH measurements.

T<sub>basic\_identify\_FDD inter</sub> = 800 ms. This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new detectable inter-frequency FDD cell is defined.

T<sub>basic\_measurement\_FDD inter\_</sub> = 50 ms. This is the time period used in the inter-frequency equation for defining the measurement period for inter frequency CPICH measurements.

N<sub>Freq</sub>: This is the 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 25.123 [2]. When L3 filtering is used, an additional delay can be expected.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.4 and A.8.3.1

#### 8.6.3.1.3 Test purpose

To verify that the UE meets the minimum requirement.

#### 8.6.3.1.4 Method of test

#### 8.6.3.1.4.1 Initial conditions

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

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

The test parameters are given in Table 8.6.3.1.1 and 8.6.3.1.2. The test consists of two successive time periods, with time durations of T1 and T2 respectively. Two cells shall be present in the test, cell 1 being the serving UTRA TDD cell and cell 2 being a UTRA FDD neighbour cells on the unused frequency.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used and that CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The second Beacon timeslot shall be provided in timeslot 8 for cell 1. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. The TTI of the uplink DCCH shall be 20 ms.

<u>Table 8.6.3.1.1: General test parameters for Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition</u>

Parameter Parame		<u>Unit</u>	<u>Value</u>	Comment		
DPCH parameters			DL Reference Measurement	As specified in TS 25.102 section A.2.2		
			Channel 12.2 kbps			
Power Contr	<u>ol</u>		<u>On</u>			
Target qualit	y value on DTCH	BLER	<u>0.01</u>			
<u>Initial</u>	Active cell		Cell 1	UTRA TDD cell		
conditions	Neighbour cell		Cell 2	UTRA FDD cell		
Final	Active cell		Cell 1			
conditions						
Threshold no	on used	<u>dB</u>	<u>-18</u>	Applicable for event 2C		
<u>frequency</u>						
W non-used	<u>frequency</u>		<u>1</u>	Applicable for event 2C		
<u>Hysteresis</u>		<u>dB</u>	<u>0</u>	Applicable for event 2C		
Time to Trigg	<u>ger</u>	<u>ms</u>	<u>0</u>			
Filter coeffici	<u>ent</u>		<u>0</u>			
Monitored ce	ell list size		6 TDD neighbours on channel 1			
			6 FDD neighbours on channel 2			
<u>T1</u>		<u>s</u>	<u>15</u>			
<u>T2</u>	·	<u>s</u>	<u>10</u>			

<u>Table 8.6.3.1.2: Cell specific parameters for Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition</u>

<u>Parameter</u>	<u>Unit</u>		<u>Ce</u>	<u>ll 1</u>		Cell 2	
Timeslot Number		(	<u>)</u>	<u>8</u>		<u>n.</u>	<u>a</u>
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
UTRA RF Channel Number		Channel 1 Chan		Channel 1 Channel 2		<u>nel 2</u>	
CPICH_Ec/lor	<u>dB</u>	<u>n.</u>	<u>a.</u>	<u>n.</u>	<u>a.</u>	<u>-1</u>	<u>0</u>
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<u>-3</u>			<u>-1</u> :	2
SCH_Ec/lor	<u>dB</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-1</u> :	2
SCH_t <sub>offset</sub>		0	<u>0</u>	<u>0</u>	<u>0</u>	n.a.	
PICH_Ec/lor				<u>-3</u>	<u>-3</u>	<u>-1</u> :	<u>5</u>
<u>OCNS</u>	<u>dB</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-0,9</u>	<u>41</u>
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	-infinity	<u>-1.8</u>
$I_{oc}$	<u>dBm/ 3.84</u> <u>MHz</u>		<u> </u>	<u>70</u>		<u>-7</u>	0
CPICH_Ec/lo			n.a.			-infinity	<u>-14</u>
PCCPCH_RSCP	<u>dB</u>	<u>-70</u> <u>-70</u> <u>-70</u> <u>-70</u>			n.a.		
Propagation Condition		AWGN				<u>AW</u>	<u>GN</u>

#### 8.6.3.1.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL\_DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 15 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5040 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 7) After 10 seconds from the beginning of T2, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 8) Repeat steps 1-7 [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)	
<u>UE information elements</u>	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity -Measurement Command (40.3.7.46)	$\frac{1}{N}$
-Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49)	Modify
-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)	minor maquericy meacurement
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE inter-frequency cell removal	No inter-frequency cells removed
-New inter-frequency cells	
-Inter-frequency cell id	1 1
-Frequency info (10.3.6.36)	
-CHOICE mode	<u>FDD</u>
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
Cell info (10.3.7.2)	
-Cell individual offset	Not Present
-Reference time difference to cell	Not Present
-Read SFN indicator	False
-CHOICE mode -Primary CPICH info	FDD
-Primary scrambling code	Set to Primary scrambling code of Cell2
-Primary CPICH Tx Power	Set to Primary Sciambling code of Cell2  Set to Primary CPICH Tx Power of Cell2
Thinary of fort fix tower	described in Table 8.6.3.1.2
-Tx Diversity Indicator	FALSE
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE reporting critera	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	<u>0</u>
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH_Ec/No
-Inter-frequency reporting quantity (10.3.7.21)	
UTRA carrier RSSI	
Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	No separat
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode -CPICH Ec/N0 reporting indicator	FDD TRUE
-CPICH EC/NO reporting indicator -CPICH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Neasurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting
	criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	<u>1</u>
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	<u>0 dB</u>
-Time to trigger	<u>0 ms</u>
-Reporting Cell Status (10.361)	
-CHOICE reported cell	Report cells within active and/or monitored
	set on used frequency or within virtual
	active and/or monitored set on non-used
1	frequency

Information Element/Group name	<u>Value/Remark</u>
-Maximum number of reported cells	<u>3</u>
-Parameters required for each non-used frequenc	
- Threshold non-used frequency	<u>-18</u>
- W non-used frequency	<u>1</u>
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

## MEASUREMENT REPORT message (step 6)

Information Element	<u>Value/remark</u>
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	<u>1</u>
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	<u>FDD</u>
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	<u>FDD</u>
-Primary CPICH Info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-CPICH Ec/No	Checked that this IE is present
-CPICH RSCP	Not Present
-Pathloss	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2 <u>C</u>
-Inter-frequency cells	1
-Frequency Info	
-CHOICE mode	<u>FDD</u>
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
CHOICE mode	<u>FDD</u>
-Primary CPICH info	
-Primary Scrambling Code	Set to Primary scrambling code of Cell2

#### 8.6.3.1.5 Test requirements

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 5040ms from the beginning of time period T2.

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

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

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

CHANGE REQUEST											
æ	34	.122	CR	139	ж re\	-	ж	Current vers	ion:	4.6.0	¥
For <u>HELP</u> on	using	this for	m, see	bottom o	f this page	or look	at the	e pop-up text	over	the	nbols.
Proposed chang	e affed	ets: \	JICC ap	pps#	ME[	X Rad	dio Ad	ccess Netwo	·k	Core Ne	etwork
Title:  # Addition of Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition test case for UTRA TDD (3.84 Mcps Option)											
Source:	<b>光</b> T1	-RF									
Work item code:	H							Date: ℜ	13/0	01/2003	
Category:	Deta	F (cor. A (cor. B (add C (fun D (edi ailed ex	rection) responds dition of t ctional m torial mo blanation	feature), nodificatior ndification)	ection in an e			Release: 光 Use <u>one</u> of 2 e) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	the fol (GSM (Relea (Relea (Relea	lowing rele Phase 2) ase 1996) ase 1997) ase 1998) ase 1999) ase 4) ase 5)	eases:
Reason for change: # The test case for Correct reporting of FDD inter-frequency neighbours in AWGN propagation conditions is missing from the current version of TS 34.122.											
Summary of change: # Introduction of Correct reporting of FDD inter-frequency neighbours in AWGN propagation conditions test case.							WGN				
Consequences it not approved:	<b>f</b> #	Inco	nsistend	cy 34.122	and 25.123	3					
Clauses affected	l: #	8.6.3	3.1								
Other specs affected:	¥	Y N X X	Test s	core spec pecification Specificat		¥					
Other comments	: X	-									

#### 8.6.3 FDD measurements

## 8.6.3.1 Correct reporting of FDD neighbours in AWGN propagation condition

Void.

#### 8.6.3.1.1 Definition and applicability

#### 8.6.3.1.1.1 3,84 Mcps TDD Option

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

The requirements and this test apply to the combined FDD and TDD (3.84 Mcps option) UE.

8.6.3.1.1.2 1,28 Mcps TDD Option

Void.

8.6.3.1.2 Minimum requirement

8.6.3.1.2.1 3,84 Mcps TDD Option

When idle intervals are used for inter-frequency FDD measurements, the UE shall be able to identify a new detectable inter-frequency FDD cell belonging to the monitored set within

$$\underline{\qquad} T_{\text{identify FDD inter}} = Max \bigg\{ 5000, T_{\text{basic identify FDD inter}} \cdot \frac{T_{\text{measurement period FDD inter}}}{T_{\text{FDD inter}}} \cdot N_{\textit{Freq}} \bigg\} ms$$

If the UE does not require idle intervals to perform FDD inter-frequency measurements, the UE shall be able to identify a new detectable inter-frequency FDD cell belonging to the monitored set within 5000 ms.

When L3 filtering is used an additional delay can be expected.

An inter-frequency FDD 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 idle intervals are used for FDD inter frequency measurements, the UE physical layer shall be capable of reporting measurements to higher layers with measurement period given by

$$T_{\text{measurement FDD inter}} = \textit{Max} \bigg\{ T_{\text{measurement period FDD inter}} \cdot T_{\text{basic measurement FDD inter}} \cdot \frac{T_{\text{measurement period FDD inter}}}{T_{\text{FDD inter available}}} \cdot N_{\textit{Freq,FDD}} \bigg\} \textit{ms}$$

If the UE does not require idle intervals to perform FDD inter-frequency measurements, the measurement period for inter frequency CPICH measurements shall be 480 ms.

The UE shall be capable of performing CPICH measurements for  $X_{measurement\ FDD\ inter}$  inter-frequency FDD cells perfrequency of the monitored set and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of  $T_{measurement\ FDD\ inter-}$ 

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

 $\underline{T_{measurement\ period\ FDD\ inter}}$  = 480 ms. The time period used for calculating the measurement period  $\underline{T_{measurement\ FDD\ inter}}$  for inter frequency CPICH measurements.

 $\underline{T_{FDD\_inter: available}}$ : This is the available time for measurements on inter-frequency FDD cells.  $\underline{T_{FDD\ inter\ available}}$  shall be derived from  $\underline{T_{FDD\ inter}}$  by assuming 2\*0.5 ms implementation margin for frequency switching per idle interval and by only taking into account the remaining number of full timeslots per idle interval. Idle intervals smaller than 3 timeslots shall not be taken into account for calculating  $\underline{T_{FDD\ inter\ available}}$ .

<u>T<sub>basic\_identify\_FDD inter</u> = 800 ms. This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new detectable inter-frequency FDD cell is defined.</u></sub>

T<sub>basic\_measurement\_FDD inter</sub> = 50 ms. This is the time period used in the inter-frequency equation for defining the measurement period for inter frequency CPICH measurements.

N<sub>Free</sub>: This is the 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 25.123 [2]. When L3 filtering is used, an additional delay can be expected.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.4 and A.8.3.1

8.6.3.1.2.2 1.28 Mcps TDD Option

Void.

8.6.3.1.3 Test purpose

8.6.3.1.3.1 3,84 Mcps TDD Option

To verify that the UE meets the minimum requirement.

8.6.3.1.3.2 1.28 Mcps TDD Option

Void.

8.6.3.1.4 Method of test

8.6.3.1.4.1 3,84 Mcps TDD Option

8.6.3.1.4.1.1 Initial conditions

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

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

The test parameters are given in Table 8.6.3.1.1 and 8.6.3.1.2. The test consists of two successive time periods, with time durations of T1 and T2 respectively. Two cells shall be present in the test, cell 1 being the serving UTRA TDD cell and cell 2 being a UTRA FDD neighbour cells on the unused frequency.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used and that CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The second Beacon timeslot shall be provided in timeslot 8 for cell 1. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. The TTI of the uplink DCCH shall be 20 ms.

<u>Table 8.6.3.1.1: General test parameters for Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition</u>

Pa	rameter	Unit	Value	Comment
DPCH parameters			DL Reference Measurement	As specified in TS 25.102 section A.2.2
			Channel 12.2 kbps	
Power Contr	<u>ol</u>		<u>On</u>	
Target qualit	y value on DTCH	BLER	<u>0.01</u>	
<u>Initial</u>	Active cell		Cell 1	UTRA TDD cell
conditions	Neighbour cell		Cell 2	UTRA FDD cell
<u>Final</u>	Active cell		Cell 1	
<u>conditions</u>				
Threshold no	Threshold non used		<u>-18</u>	Applicable for event 2C
frequency				
W non-used	<u>frequency</u>		<u>1</u>	Applicable for event 2C
<u>Hysteresis</u>		<u>dB</u>	<u>0</u>	Applicable for event 2C
Time to Trig	<u>ger</u>	<u>ms</u>	<u>0</u>	
Filter coefficient			<u>0</u>	
Monitored cell list size			6 TDD neighbours on channel 1	
			6 FDD neighbours on channel 2	
<u>T1</u>		<u>s</u>	<u>15</u>	
<u>T2</u>		<u>s</u>	<u>10</u>	

<u>Table 8.6.3.1.2: Cell specific parameters for Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition</u>

<u>Parameter</u>	<u>Unit</u>	<u>Cell 1</u>			Cell 2		
Timeslot Number		<u>0</u>		<u>8</u>		<u>n.a</u>	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
UTRA RF Channel Number		Channel 1			Chani	nel 2	
CPICH_Ec/lor	<u>dB</u>	n.	<u>a.</u>	n.a.		-10	
PCCPCH_Ec/lor	<u>dB</u>	<del>-3</del>	<u>-3</u>			<u>-1:</u>	2
SCH_Ec/lor	<u>dB</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-9</u>	<u>-1:</u>	<u>2</u>
SCH_t <sub>offset</sub>		0	0	0	0	n.a	<u>a.</u>
PICH_Ec/lor				<u>-3</u>	<u>-3</u>	<u>-1</u> :	<u>5</u>
<u>OCNS</u>	<u>dB</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-4,28</u>	<u>-0,9</u>	<u>41</u>
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	-infinity	<u>-1.8</u>
$I_{oc}$	<u>dBm/ 3.84</u> <u>MHz</u>		<u> </u>	<u>70</u>		<u>-7</u>	0
CPICH_Ec/lo		<u>n.a.</u>		-infinity	<u>-14</u>		
PCCPCH_RSCP	<u>dB</u>	<u>-70</u>	<u>-70</u>	<u>-70</u>	<u>-70</u>	<u>n.a</u>	<u>a.</u>
Propagation Condition			AW	<u>'GN</u>		AWO	<u>GN</u>

#### 8.6.3.1.4.1.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 15 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5040 ms. If the UE fails to report the event within the

required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.

- 7) After 10 seconds from the beginning of T2, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 8) Repeat steps 1-7 [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	<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)	AM RLC
-Measurement Report Transfer Mode -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
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE inter-frequency cell removal	No inter-frequency cells removed
-New inter-frequency cells	
-Inter-frequency cell id	$\frac{1}{1}$
-Frequency info (10.3.6.36)	
-CHOICE mode	<u>FDD</u>
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-Cell info (10.3.7.2)	
-Cell individual offset	Not Present
-Reference time difference to cell	Not Present
-Read SFN indicator	False
-CHOICE mode -Primary CPICH info	FDD
-Primary scrambling code	Set to Primary scrambling code of Cell2
-Primary CPICH Tx Power	Set to Primary Scrambling Code of Cell2  Set to Primary CPICH Tx Power of Cell2
Thinary of fort fact ower	described in Table 8.6.3.1.2
-Tx Diversity Indicator	FALSE
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE reporting critera	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	<u>0</u>
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH_Ec/No
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	
-Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	N
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator -Pathloss reporting indicator	FALSE FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting
- C. STOP TOPOR GROUND	criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	<u>0 dB</u>
-Time to trigger	<u>0 ms</u>
-Reporting Cell Status (10.361)	
-CHOICE reported cell	Report cells within active and/or monitored
	set on used frequency or within virtual
	active and/or monitored set on non-used
I	<u>frequency</u>

Information Element/Group name	<u>Value/Remark</u>		
-Maximum number of reported cells	<u>3</u>		
-Parameters required for each non-used frequenc			
- Threshold non-used frequency	<u>-18</u>		
- W non-used frequency	1		
Physical channel information elements			
-DPCH compressed mode status info (10.3.6.34)	Not Present		

## MEASUREMENT REPORT message (step 6)

Information Floresce	Malara las as a al-
Information Element	<u>Value/remark</u>
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	<u>1</u>
<u>-Frequency info</u>	
-CHOICE mode	<u>FDD</u>
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
CHOICE mode	<u>FDD</u>
-Primary CPICH Info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-CPICH Ec/No	Checked that this IE is present
-CPICH RSCP	Not Present
-Pathloss	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	<u>2C</u>
-Inter-frequency cells	<u>2C</u>
<u>-Frequency Info</u>	
-CHOICE mode	<u>FDD</u>
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-CHOICE mode	FDD
-Primary CPICH info	
-Primary Scrambling Code	Set to Primary scrambling code of Cell2

## 8.6.3.1.4.2 1.28 Mcps TDD Option

Void.

## 8.6.3.1.5 Test requirements

### 8.6.3.1.5.1 3,84 Mcps TDD Option

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 5040ms from the beginning of time period T2.

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

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

Void.

## 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

*Tdoc* **≋** *T1-030151* 

CR-Form-v7

CHANGE REQUEST						
*	34.122 CR 140	<b>≭rev</b> ■ <b>#</b> Current v	ersion: 3.10.0 <sup>#</sup>			
For <u><b>HELP</b></u> on us	sing this form, see bottom of this	s page or look at the pop-up t	ext over the % symbols.			
Proposed change affects: UICC apps# ME X Radio Access Network Core Network						
Title:	Corrections/Updates to TDD C	ell Reselection and Handove	r Test Cases			
Source: #	T1-RF					
Work item code: 第		Date:	· 第 <mark>15/01/2003</mark>			
	Use one of the following categories  F (correction)  A (corresponds to a correction  B (addition of feature),  C (functional modification of form  D (editorial modification)  Detailed explanations of the above be found in 3GPP TR 21.900.	n in an earlier release) 2 R96 R97 Peature) R98 R99	e of the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) 4 (Release 4) 5 (Release 5)			
Reason for change:	Reason for change:   Some test cases for TDD cell reselection and handover are inconsistent with 25.123					
Summary of change	Summary of change:   Update existing test cases to correct for inconsistencies. Also updated message contents to remove 3,84 Mcps TDD option (not applicable to R99).					
Consequences if not approved:	第 Inconsistency 34.122 and	25.123				
Clauses affected:	策 8.2.2.4, 8.3.1 and 8.3.2					
Other specs Affected:	Y N  X Other core specifications X O&M Specifications					
Other comments:	<b>X</b>					

## How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked \( \mathcal{H} \) 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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 the clause containing the first piece of changed text. De the change request.	(use CTRL-A to select it) into the specification just in front of elete those parts of the specification which are not relevant to

#### 8.2.2.4 Scenario 4: inter RAT cell re-selection

#### 8.2.2.4.1 Definition and applicability

The cell re-selection delay is defined as the time from when the cell quality levels change to the moment when this change makes the UE reselect a better ranked cell, and starts to send LOCATION UPDATING REQUEST message to perform a Location update to the new cell.

This test is for the case where the UE camps on a TDD cell and reselects to a GSM cell.

The requirements and this test apply to UEs supporting both TDD and GSM.

## 8.2.2.4.2 Minimum requirement

The cell re-selection delay shall be less than  $26 \text{ s} + T_{\text{BCCH}}$ , where  $T_{\text{BCCH}}$  is the maximum time allowed to read BCCH data in the GSM cell.8 s when the DRX cycle length is 1,28 s. The cell selection parameters in the BCCH of the GSM cell in system info 3 and 4 are transmitted at least every second.

NOTE: The cell re-selection delay can be expressed as:

 $4 * T_{\underline{\text{measureGSM}}} + T_{\underline{\text{BCCH}}}$ 

#### where:

T<sub>measureGSM</sub> Specified in Table 4.1 in sub clause 4.2.2.7.1 in [2].

T<sub>BCCH</sub> Equal to 1.9 s, i.e. the maximum time allowed to read BCCH data when synchronised to a BCCH carrier from a GSM cell (specified in TS 45.005).

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

The normative reference for this requirement is TS 25.123 [2] clauses 4.3.2.1 and A.4.2.4

## 8.2.2.4.3 Test purpose

This test verifies the UE meets the minimum requirement for the case where the UE camps on a TDD cell and reselects to a GSM cell.

## 8.2.2.4.4 Method of Test

#### 8.2.2.4.4.1 Initial conditions

This scenario implies the presence of 1 TDD and 1 GSM cell as given in table 8.2.2.4.1, 8.2.2.4.2, and 8.2.2.4.3. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.4.1: General test parameters for UTRAN to GSM Cell Re-selection

I	Parameter		Value	Comment
Initial	Active cell		Cell1	TDD Cell
condition	Neighbour cell		Cell2	GSM Cell
Final	Active cell		Cell2	
condition				
DR	XX cycle length	S	1,28	UTRAN cell
BCCH re	petition period (GSM	S	1,87	In GSM the system information is scheduled according to an 8 x (51
cell)				x 8) cycle (i.e. a system information message is transmitted every
·				235 ms). The cell selection parameters in system info 3 and 4 are
				transmitted at least every second. (GSM 05.02)
	T1	S	<del>15</del> 45	
	T2	S	<del>15</del> 35	

Table 8.2.2.4.2: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter Unit C		Cell 1 (	(UTRA)			
Timeslot Number		0		8		
		T1	T2	T1	T2	
UTRA RF Channel Number		Channel 1 C		Char	nannel 1	
PCCPCH_Ec/lor	DB	-3	-3			
SCH_Ec/lor	DB	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		0	0	0	0	
PICH_Ec/lor	DB			-3	-3	
OCNS_Ec/lor	DB	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	DB	3	-2	3	-2	
$I_{oc}$	dBm/3, 84 MHz	_/()		-7	70	
PCCPCH RSCP	DBm	-70	-75			
Propagation Condition		AWGN		AW	AWGN	
Treselection	S	0				
Ssearch <sub>RAT</sub>	DB	not sent		·		

Table 8.2.2.4.3: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)		
raiailletei	Oilit	T1	T2	
Absolute RF Channel Number		ARI	FCN 1	
RXLEV	dBm	- <del>80</del> 90	- <del>70</del> 75	
RXLEV_ACCESS_MIN	dBm	IBm -100		
MS TXPWR MAX CCH	dBm 30			

### 8.2.2.4.4.2 Procedure

- a) The SS activates cell 1 and 2 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST and LOCATION UPDATING REQUEST messages from the UE.
- b) The UE is switched on.
- c) The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- d) After  $\frac{15}{45}$  s, the parameters are changed as described for T2.
- e) The SS waits for LOCATION UPDATING REQUEST messages from the UE.
- f) After  $\frac{15}{35}$  s, the parameters are changed as described for T1.
- g) The SS waits for RRC CONNECTION REQUEST messages from the UE.

h) Repeat steps d) to g) [TBD] times.

#### 8.2.2.4.4.2.2 Procedure

- a) The SS activates cell 1 and 2 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST and LOCATION UPDATING REQUEST messages from the UE.
- b) The UE is switched on.
- c) The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- d) After 15 s, the parameters are changed as described for T2.
- e) The SS waits for LOCATION UPDATING REQUEST messages from the UE.
- f) After 15 s, the parameters are changed as described for T1.
- g) The SS waits for RRC CONNECTION REQUEST messages from the UE.
- h) Repeat steps d) to g) [TBD] times.

#### 8.2.2.4.5 Test Requirements

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8-27.9 s.
- 3) In step g), the UE shall respond on cell 1.

For the test to pass, the total number of fulfilled test requirements in step 2) shall be at least 90% 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 UTRAN Connected Mode Mobility

#### 8.3.1 TDD/TDD Handover

#### 8.3.1.1 Handover to intra-frequency cell

### 8.3.1.1.1 Definition and applicability

Handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCHHandover 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 DPCH, excluding the RRC procedure delay as defined in [9].

The requirements and this test apply to the UTRA TDD UE.

## 8.3.1.1.2 Minimum requirement

The <u>interruption time hard handover delay</u> shall be less than 40 ms in the single carrier case when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/TDD intra-frequency handover is commanded, the interruption time shall be less than,

 $T_{interrupt} = T_{offset} + T_{UL} + 30*F_{SFN} + 20*KC + 180*UC ms$ 

#### where,

$T_{\rm offset}$	Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time that can elapse until the appearance of a Beacon channel
T <sub>UL</sub>	Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell
F <sub>SFN</sub>	Equal to 1 if SFN decoding is required and equal to 0 otherwise
KC	Equal to 1 if a known target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise
<u>UC</u>	Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

An intra-frequency TDD target cell shall be considered as known by the UE, if either or both of the following conditions are true:

- the target cell has been measured during the last 5 seconds
- the UE has had a radio link connected to the target cell during the last 5 seconds.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.1.

## 8.3.1.1.3 Test purpose

The purpose of this test is to verify the requirement for the intra-frequency handover delay in CELL\_DCH state in the single carrier case.

#### 8.3.1.1.4 Method of test

#### 8.3.1.1.4.1 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 8.3.1.1.1 and 8.3.1.1.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP and SFN-CFN observed timed difference shall be reported together with Event 1G. 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 message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The UL DPCH shall be transmitted in timeslot 12.

Table 8.3.1.1.1: General test parameters for Handover to intra-frequency cell

Para	meter	Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2
Power Contro	ol		On	
Target quality DTCH	value on	BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 2	
HCS			Not used	
0	0		0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigg	er	ms	0	
Filter coefficient		0		
Monitored cell list size			6 TDD neighbours on Channel 1	
T1		S	10	
T2		S	10	
T3		S	10	

Table 8.3.1.1.2: Cell specific test parameters for Handover to intra-frequency cell

T3	T1	0 T2 T3 Cha	T1 T2	T3		
T3	T1	L	l l	T3		
		Cha				
		0110	Channel 1			
		-3	n.a.			
		-9	n.a.			
n.a.		5	n.a.			
n.a.	n.a.		n.a.	Note 1		
n.a.	n.a.	-3,12	n.a.	Note 2		
	-Inf.	3	-Inf.	3		
-72 n.a.		-70	n.a	ā.		
-70						
AWGN						
	n.a.	n.a. n.a. -Inf. -Inf.	n.a. n.a3,12 -Inf. 3 -Inf70	n.a.         n.a.         n.a.           n.a.         n.a.         -3,12         n.a.           -Inf.         3         -Inf.           -Inf.         -70         n.a.		

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 lor .

#### 8.3.1.1.4.2 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) 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 triggered by event 1G.
- 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 DPCH to cell 2 less than 40 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 10 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)	Value/Nemaik
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)	Not Present
-Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38)	Not Present
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-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 synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	TRUE FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE FALSE
-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 -Timeslot ISCP reporting indicator	TDD TRUEFALSE
-Proposed TGSN reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUEFALSE
-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
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1 Frent 1C
-Intra-frequency event identity -Triggering condition 2	Event 1G
- riggering condition 2 - Reporting Range Constant	Not Present Not Present
-Reporting Range Constant -Cells forbidden to affect Reporting Range	Not Present
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
— -CHOICE TDD option	3.84 Mcps
CHOICE sync case	Case 2
Timeslot	0
-Cell parameters ID	0
-SCTD indicator	FALSE
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms

	Information Element/Group name	Value/Remark			
-Amou	unt of reporting	Infinity			
-Repo	rting interval	0 ms (Note 2)			
	rting cell status	Not Present			
Physical	channel information elements				
	-DPCH compressed mode status info (10.3.6.34) Not Present				
Note 1:	te 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:	ote 2: Reporting interval = 0 ms means no periodical reporting				

## PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator -UTRAN DRX cycle length coefficient	CELL_DCH Not Present
CN Information Elements	Not Flesent
-CN Information info	Not Present
UTRAN mobility information elements	Not i resent
-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	TDD
-UARFCN (Nt)	Same 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	TDD
—-CHOICE TDD option	3.84 Mcps TDD
UL Target SIR	Not Present
CHOICE UL OL PC info	Individually signalled
- CHOICE TDD option - Indivdual Timeslot interference info	3.84 Mcps TDD
Individual Timeslot interference info     Individual timeslot interference (10.3.6.38)	1
Timeslot Number (10.3.6.84)	
CHOICE TDD option	3.84 Mcps TDD
Timeslot number	12
-UL Timeslot Interference	-90 dBm
-CHOICE mode	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE Timing Advance	Disabled
-UL CCTrCH list	1
-UL Target SIR	TBD dB
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	0.04 Mars
	3.84 Mcps
Timeslot number	12
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41) Choice TDD option	3.84 Mcps
Choice Burst Type	Type 1
	Default
Midamble configuration burst type 1 and 3	16
Midamble shift	Not present
	3.84 Mcps
-First timeslot code list	1
-Channelisation code	8/1
-Choice more timeslots	No more timeslots

	V 1 /2
Information Element	Value/Remark
Downlink radio resources	
-CHOICE mode	TDD
-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)	
-CHOICE mode	TDD
-TPC Step size	1 dB
-CHOICE mode	TDD
-CHOICE mode	TDD
CHOICE TDD option	3.84 Mcps
-TX Diversity mode (10.3.6.86)	None
-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	TDD
-Primary CCPCH info (10.3.6.57)	155
-CHOICE mode	TDD
— CHOICE TDD option	3.84 Mcps
CHOICE sync case	Case 2
Timeslot	0
-Cell parameters ID	20
•	False
-SCTD indicator	raise
-Downlink DPCH info for each RL (10.3.6.21)	TDD
-CHOICE mode	TDD 1
-DL CCTrCH list	·
-TFCS ID	Not Present
-Time Info (10.3.6.83)	To
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Downlink DPCH timeslots and codes (10.3.6.32)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
	3.84 Mcps
Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
	3.84 Mcps
CHOICE Burst Type	Type 1
Midamble Allocation Mode	Default
<ul> <li>- Midamble configuration burst type 1 and 3</li> </ul>	16
Midamble shift	Not present
	3.84 Mcps
-First timeslot channelisation codes (10.3.6.17)	
-CHOICE codes representation	Consecutive codes
-First channelisation code	16/1
-Last channelisation code	16/2
-CHOICE more timeslots	No more timeslots
-SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message (step 6) 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.

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	<u>1</u>
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	<u>1</u>
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Checked that this IE is present
-CHOICE mode	TDD
-Cell parameters ID	<u>20</u>
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results Event results (10.3.7.7)	Not Present
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	10
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	100
-CHOICE mode	TDD
-Cell parameters ID	40
Con paramotor is	

### 8.3.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than [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.

## 8.3.1.2 Handover to inter-frequency cell

#### 8.3.1.2.1 Definition and applicability

The handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH. 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 DPCH, excluding the RRC procedure delay as defined in [9].

The requirements and this test apply to the UTRA TDD UE.

#### 8.3.1.2.2 Minimum requirement

The hard handover delayinterruption time shall be less than 40 ms in the dual carrier case when the cell is known by the UE and the SFN of the target cell needs to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/TDD inter-frequency handover is commanded, the interruption time shall be less than,

$$T_{interrupt} = T_{offset} + T_{UL} + 30*F_{SFN} + 20*KC + 180*UC ms$$

where,

Toffset Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time that can elapse until the appearance of a Beacon channel

T <sub>UL</sub>	Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell
F <sub>SFN</sub>	Equal to 1 if SFN decoding is required and equal to 0 otherwise
<u>KC</u>	Equal to 1 if a known target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise
<u>UC</u>	Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

An inter-frequency TDD target cell shall be considered as known by the UE, if either or both of the following conditions are true:

- the target cell has been measured during the last 5 seconds
- the UE has had a radio link connected to the target cell during the last 5 seconds.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.2.

## 8.3.1.2.3 Test purpose

The purpose of this test is to verify the requirement for the inter-frequency handover delay in CELL\_DCH state in the dual carrier case.

#### 8.3.1.2.4 Method of test

#### 8.3.1.2.4.1 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 8.3.1.2.1 and 8.3.1.2.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The PCCPCH RSCP and SFN-CFN observed time difference 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 message with activation time at beginning of T3 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. The UL DPCH shall be transmitted in timeslot 12.

Table 8.3.1.2.1: General test parameters for Handover to inter-frequency cell

Para	ameter Unit Value		Value	Comment		
DCH parame	OCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2		
Power Contro	ol		On			
Target quality	y value on	BLER	0.01			
Initial	Active cell		Cell 1			
conditions	ions Neighbour cell		Cell 2			
Final condition	Active cell		Cell 2			
HCS			Not used			
0		dB	0	Cell individual offset. This value shall be used for all cells in the test.		
Hysteresis	ysteresis dB		0	Hysteresis parameter for event 2C		
Time to Trigg	jer	ms	0			
Threshold no frequency	n-used	dBm	-80	Applicable for Event 2C		
Filter coeffici	ent		0			
Monitored ce	Monitored cell list size				6 TDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T <sub>SI</sub>		s 1,28		The value shall be used for all cells in the test.		
T1	T1		S		10	
T2	s		s 10		10	
T3		S	10			

Table 8.3.1.2.2: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1			Cell 2								
DL timeslot number		0		4		2		5					
		T1 T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	
UTRA RF Channel Number		Chan		nnel 1		Channel 2							
PCCPCH_Ec/lor	dB	-3			n.a.			-3			n.a.		
SCH_Ec/lor	dB	-9		n.a.			-9			n.a.			
SCH_t <sub>offset</sub>	dB	0		n.a.		5		n.a.					
DPCH_Ec/lor	dB	n.a.		Note 1 n.a.		n.a.		n.	a.	Note 1			
OCNS_Ec/lor	dB	-3,12		Note 2		n.a.	n.a.	n.a3,12		n.	a.	Note 2	
$\hat{I}_{or}/I_{oc}$	dB	1			-Inf.		7	-lı	nf	7			
PCCPCH RSCP	dBm	-72	-72 n.a.		-Inf66		n.a.						
$I_{oc}$	dBm/ 3,84 MHz	-70											
Propagation Condition		AWGN											
Note 1: The DPCH level is	s controlle	d by the nower	contro	al loon									

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 lor .

#### 8.3.1.2.4.2 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) 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 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 DPCH to cell 2 less than 40 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 10 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, event 2C (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	raido, Nomai N
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)	N . B
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	lates for some some still a seite of
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Inter-frequency reporting criteria -Filter coefficient	0
-CHOICE mode	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	Tilliary Cor Cit Nooi
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	171202
-SFN-SFN observed time difference reporting indicator	Type 1No Report
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	TRUE FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE FALSE
-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	1
frequency	Not Decout
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22) -CHOICE report criteria	Not Present
-CHOICE report citiena	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	ontona
-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-
	used frequency
-Maximum number of reported cells per reported non-used	1
frequency	
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-80 dBm
-W non-used frequency	<u>  1</u>
Physical channel information elements	Not Propert
-DPCH compressed mode status info (10.3.6.34)	Not Present

## PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0 Not December
-Integrity check info	Not Present
-Integrity protection mode info -Ciphering mode info	Not Present Not Present
-Activation time	At T3
-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	140t Frescrit
-CN Information info	Not Present
UTRAN mobility information elements	TYOU TOOOTIC
-URA identity	Not Present
RB information elements	THE THEODIN
-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	TDD
-UARFCN (Nt)	Same 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	TDD
—-CHOICE TDD option	3.84 Mcps TDD
UL Target SIR	Not Present
CHOICE UL OL PC info	Individually signalled
—-CHOICE TDD option	3.84 Mcps TDD
<ul> <li>Indivdual Timeslot interference info</li> </ul>	1
<ul> <li>- Individual timeslot interference (10.3.6.38)</li> </ul>	
<ul> <li>- Timeslot Number (10.3.6.84)</li> </ul>	
CHOICE TDD option	3.84 Mcps TDD
<ul> <li>-Timeslot number</li> </ul>	12
<ul> <li>- UL Timeslot Interference</li> </ul>	-90 dBm
-CHOICE mode	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE Timing Advance	Disabled
-UL CCTrCH list	1
-UL Target SIR	TBD dB
-Time Info (10.3.6.83)	то
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	False
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	2.04 Mana
——————————————————————————————————————	3.84 Mcps
- Timeslot number	12 True
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	3.84 Mcps
CHOICE Puret Turo	
<ul><li>- CHOICE Burst Type</li><li>- Midamble Allocation Mode</li></ul>	Type 1 Default
	16
- Midamble configuration burst type 1 and 3	
Midamble shift	Not present
	3 <del>.84 Mcps</del> 1
-First timeslot code list -Channelisation code	8/1
	No more timeslots
-CHOICE more timeslots	INO ITIOTE UITIESIOIS

Information Element	Value/Remark
Downlink radio resources	Taido/Nomain
-CHOICE mode	TDD
-Downlink information common for all radio links (10.3.6.24)	166
-Downlink Information common for all RL (10.3.6.18)	
-Timing indicator	Initialiaa
	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	TDD
-CHOICE mode	TDD
-TPC Step size	1 dB
-CHOICE mode	TDD
-CHOICE mode	TDD
CHOICE TDD option	3.84 Mcps
-TX Diversity mode (10.3.6.86)	None
-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	TDD
-Primary CCPCH info (10.3.6.57)	
- CHOICE mode	TDD
—- CHOICE TDD option	3.84 Mcps
CHOICE sync case	Case 2
Timeslot	2
- Cell parameters ID	20
- SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	1 4.00
-CHOICE mode	TDD
- DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	Not i resem
-Activation Time	Т3
-Duration	Infinite
-Common timeslot info	Not Present
	Not i lesent
- Downlink DPCH timeslots and codes (10.3.6.32)	
- First individual timeslot info (10.3.6.37)	
- Timeslot Number (10.3.6.84)	2.04 Mana
——————————————————————————————————————	3.84 Mcps
- Timeslot number	5
- TFCI existence	True
- Midamble shift and burst type (10.3.6.41)	0.0444
	3.84 Mcps
CHOICE Burst Type	Type 1
- Midamble Allocation Mode	Default
- Midamble configuration burst type 1 and 3	16
- Midamble shift	Not present
	3.84 Mcps
<ul> <li>First timeslot channelisation codes (10.3.6.17)</li> </ul>	
- CHOICE codes representation	Consecutive codes
- First channelisation code	16/1
- Last channelisation code	16/2
- CHOICE more timeslots	No more timeslots
- SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Inter frequency test cases (step 6)

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

Information Element	Value/remark
Message Type (10.2.17)	<u>valuo/remaik</u>
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	<u> -</u>
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	<u> </u>
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2 in Table 8.6.2.4.1.2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Checked that this IE is present
-CHOICE mode	TDD
-Cell parameters ID	Set to cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2 <u>C</u>
-Inter-frequency cells	<u>  1</u>
-Frequency Info	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2 in Table 8.6.2.4.1.2
-CHOICE mode	TDD
-Primary CCPCH Info	TDD
-CHOICE mode	TDD Not Property
-CHOICE Sync Case	Not Present
-Cell Parameters ID	Set to cell parameters ID of Cell 2
-SCTD Indicator	FALSE

## 8.3.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than [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 TDD/FDD Handover

## 8.3.2.1 Definition and applicability

The handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCCH. 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, excluding the RRC procedure delay as defined in [9].

The requirements and this test apply to the UTRA TDD / FDD UE.

## 8.3.2.2 Minimum requirement

The <u>interruption time</u>hard handover delay shall be less than 100 ms in the single carrier case when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/FDD handover is commanded, the interruption time shall be less than,

 $T_{\text{interrupt}} = T_{\text{offset}} + 40 + 50 * \text{KC} + 150 * \text{UC ms}$ 

where,

<u>T<sub>offset</sub></u> Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell.

KC Equal to 1 if a known target cell is indicated in the RRC message implying TDD/FDD handover

and equal to 0 otherwise

UC Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/FDD

handover and equal to 0 otherwise

An inter-frequency FDD target cell shall be considered known by the UE, if the target cell has been measured by the UE during the last 5 seconds.

The phase reference is the Primary CPICH.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.2 and A.5.2.

## 8.3.2.3 Test purpose

The purpose of this test is to verify the requirement for the TDD/FDD handover delay in CELL\_DCH state.

#### 8.3.2.4 Method of test

#### 8.3.2.4.1 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.

The test parameters are given in table 8.3.2.1, 8.3.2.2 and 8.3.2.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G and 2B shall be used. The CPICH\_RSCP of the best cell on the unused frequency shall be reported together with Event 2B reporting. 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 message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

Table 8.3.2.1: General test parameters for TDD/FDD handover

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2
Power	Power Control		On	
	Target quality value on DTCH		0.01	
Initial	Active cell		Cell 1	TDD cell
conditions	Neighbour cell		Cell 2	FDD cell
Final condition	Active cell		Cell 2	FDD cell
HC	CS		Not used	
C	)	dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	3	Hysteresis parameter for event 2B
Time to Trigger		ms	0	
Absolute threshold used frequency		dBm	-71	Applicable for Event 2B
Threshold non-used frequency		dBm	-80	Applicable for Event 2B
W used f	requency		4	Applicable for Event 2B
	d frequency		1	Applicable for Event 2B
	efficient		0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 FDD neighbours on Channel 2	
T <sub>SI</sub>		S	1.28	The value shall be used for all cells in the test.
Т	1	S	5	
Т	2	S	15	
Т	3	S	5	

Table 8.3.2.2: Cell 1 specific test parameters for TDD/FDD handover

Parameter	Unit	Cell 1						
DL timeslot number			0			2		
		T1	T2	T3	T1	T2	T3	
UTRA RF Channel Number		Channel 1						
PCCPCH_Ec/lor	dB		-3			n.a.		
SCH_Ec/lor	dB		-9			n.a.		
SCH_t <sub>offset</sub>	dB		0		n.a.			
DPCH_Ec/lor	dB		n.a.		Note 1		n.a.	
OCNS_Ec/lor	dB		-3,12		Not	te 2	n.a.	
$\hat{I}_{or}/I_{oc}$	dB	5	-	1	5 -1		1	
PCCPCH RSCP	dBm	-68	-7	'4		n.a.		
$I_{oc}$	dBm/ 3,84 MHz	-70						
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 lor.

Table 8.3.2.3: Cell 2 specific test parameters for TDD/FDD handover

Unit	Cell 2		
	T1, T2	T3	
dB	-10		
dB	-12		
dB	-12		
dB	-15		
dB	n.a.	Note 1	
dB	-0,941	Note 2	
dBm	-83	-77	
dB	-3	3	
dBm/3. 84 MHz	-70		
	AWGN		
	dB dB dB dB dB dB dBm dBm dB MBM	T1, T2           dB         -10           dB         -12           dB         -12           dB         -15           dB         n.a.           dB         -0,941           dBm         -83           dB         -3           dBm/3.         -70	

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  $I_{\rm or}$ 

#### 8.3.2.4.2 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) 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 2B.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.
- 8) After 15 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:

## MEASUREMENT CONTROL message, event 2B (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)	
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Inter-frequency reporting criteria	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH RSCP
-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 1No Report
-Cell synchronisation information reporting indicator	TRUEFALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE FALSE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUEFALSE
-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	1
frequency	
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting
	criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity (10.3.7.14)	Event 2B
-Threshold used frequency	-71 dBm
-W used frequency	1
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within monitored set on non-
	used frequency
-Maximum number of reported cells per reported non-used	1
frequency	
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-80 dBm
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

## PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI -New C-RNTI	Not Present Not Present
-RRC State Indicator	CELL DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	Hottioont
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36) -CHOICE <i>mode</i>	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 - PC Preamble	-6dB 1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
-CHOICE mode	FDD
-Scrambling code type	Long
-Scrambling code number	0 (0 to 16777215)
-Number of DPDCH	Not Present(1)
-Spreading factor	SF is reference to TS34.108 clause 6.10
TEOL suitatamas	Parameter Set
-TFCI existence -Number of FBI bit	TRUE Not Present(0)
-Puncturing Limit	Reference to TS34.108 clause 6.10
Tunicianing Entite	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	0 (single) FDD
-Power offset P <sub>Pilot-DPDCH</sub>	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 <i>mode</i> -DPCH compressed mode info (10.3.6.33)	FDD Not Present (Note 1)
To the compressed mode into (10.5.0.55)	Not i resent (Note i)

Information Element Value/Remark							
	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						
BEEN RECEIVED BEAREN GETEN OF THE CONTRACTION GETEN							

MEASUREMENT REPORT message for Inter frequency test cases (step 6)

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

Information Element	Value/remark
	<u>value/remark</u>
Message Type (10.2.17)	Not Decout
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
Inter-frequency measured results	1
-Frequency info	500
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2 in Table 8.3.2.3
UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	a
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	<u>FDD</u>
-Primary CPICH Info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-CPICH Ec/No	Not Present
-CPICH RSCP	Checked that this IE is present
-Pathloss	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	<u>2B</u>
-Inter-frequency cells	1
-Frequency Info	500
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
<u>-UARFCN downlink (Nd)</u>	Same frequency as channel 2 in Table 8.3.2.3
-CHOICE mode	<u>FDD</u>
-Primary CPICH info	
-Primary Scrambling Code	Set to Primary scrambling code of Cell2

## 8.3.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than [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 #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

*Tdoc* **≋** *T1-030152* 

CR-Form-v7

CHANGE REQUEST									
*	34.122 CR 141	<b>≭rev</b> - <b>≭</b> Current	version: <b>4.6.0</b> **						
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the 策 symbols.									
Proposed change a	Proposed change affects: UICC apps# ME X Radio Access Network Core Network								
Title: ₩	Corrections/Updates to TDD COption)	Cell Reselection and Handov	er Test Cases (3.84 Mcps						
Source: #	T1-RF								
Work item code: ₩		Date	e:						
Category: 岩	A Use one of the following categories F (correction) A (corresponds to a correction B (addition of feature), C (functional modification of the deliteration) Detailed explanations of the above be found in 3GPP TR 21.900.	s: Use <u>on</u> 2 on in an earlier release) R96 R97 feature) R98 R99	(Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5)						
Reason for change	Some test cases for TDD 25.123	cell reselection and handov	er are inconsistent with						
Summary of chang Consequences if not approved:	ge:   We Update existing test case   Inconsistency 34.122 and	s to correct for inconsistenci	es						
Clauses affected:	策 8.2.2.4, 8.3.1 and 8.3.2								
Other specs Affected:	Y N      X Other core specifications     X O&M Specifications								
Other comments:	<b>x</b>								

## How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked \( \mathcal{H} \) 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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 the clause containing the first piece of changed text. De the change request.	(use CTRL-A to select it) into the specification just in front of elete those parts of the specification which are not relevant to

#### 8.2.2.4 Scenario 4: inter RAT cell re-selection

#### 8.2.2.4.1 Definition and applicability

#### 8.2.2.4.1.1 3,84 Mcps Option

The cell re-selection delay is defined as the time from when the cell quality levels change to the moment when this change makes the UE reselect a better ranked cell, and starts to send LOCATION UPDATING REQUEST message to perform a Location update to the new cell.

This test is for the case where the UE camps on a 3,84 Mcps TDD cell and reselects to a GSM cell.

The requirements and this test apply to UEs supporting both 3,84 Mcps TDD and GSM.

#### 8.2.2.4.1.2 1,28 Mcps Option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send LOCATION UPDATING REQUEST message to perform a Location update.

This test is for the case where the UE camps on a 1,28 Mcps TDD cell and reselects to a GSM cell.

The requirements and this test apply to UEs supporting both 1,28 Mcps TDD and GSM.

#### 8.2.2.4.2 Minimum requirement

#### 8.2.2.4.2.1 3,84 Mcps Option

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 in the GSM cell.8 s when the DRX cycle length is 1,28 s. The cell selection parameters in the BCCH of the GSM cell in system info 3 and 4 are transmitted at least every second.

NOTE: The cell re-selection delay can be expressed as:

$$4*T_{\text{measureGSM}}+T_{\text{BCCH}}$$

#### where:

 $T_{\text{measureGSM}}$  Specified in Table 4.1 in sub clause 4.2.2.7.1 in [2].

<u>T<sub>BCCH</sub></u> Equal to 1.9 s, i.e. the maximum time allowed to read BCCH data when synchronised to a BCCH carrier from a GSM cell (specified in TS 45.005).

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

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.4

#### 8.2.2.4.2.2 1,28 Mcps Option

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.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

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

 $T_{measureTDD}$  Specified in 4.2.2.7.2 table 4.1A in [2].

 $T_{BCCH}$  Maximum time allowed to read BCCH data from GSM cell in TS 45.005.

This gives a total of  $3.84s + T_{BCCH}$ , thus allow  $4s + T_{BCCH}$ .

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.4

## 8.2.2.4.3 Test purpose

This test verifies the UE meets the minimum requirement for the case where the UE camps on a TDD cell and reselects to a GSM cell.

#### 8.2.2.4.4 Method of Test

8.2.2.4.4.1 3,84 Mcps Option

## 8.2.2.4.4.1.1 Initial conditions

This scenario implies the presence of 1 3,84 Mcps TDD and 1 GSM cell as given in table 8.2.2.4.1, 8.2.2.4.2, and 8.2.2.4.3. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.4.1: General test parameters for UTRAN to GSM Cell Re-selection

Parameter		Unit	Value	Comment
Initial Active cell			Cell1	TDD Cell
condition	condition Neighbour cell		Cell2	GSM Cell
Final Active cell condition			Cell2	
DRX cycle length		S	1,28	UTRAN cell
BCCH repetition period (GSM cell)		S	1,87	In GSM the system information is scheduled according to an 8 x (51 x 8) cycle (i.e. a system information message is transmitted every 235 ms). The cell selection parameters in system info 3 and 4 are transmitted at least every second. (GSM 05.02)
T1		S	<del>15</del> 45	
T2		s	<del>15</del> 35	

Table 8.2.2.4.2: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)				
Timeslot Number		0		8		
		T1	T2	T1	T2	
UTRA RF Channel Number		Chan	Channel 1 C		hannel 1	
PCCPCH_Ec/lor	DB	-3	-3			
SCH_Ec/lor	DB	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		0	0	0	0	
PICH_Ec/lor	DB			-3	-3	
OCNS_Ec/lor	DB	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	DB	3	-2	3	-2	
$I_{oc}$	dBm/3, 84 MHz	-70		-7	70	
PCCPCH RSCP	DBm	-70	-75			
Propagation Condition		AWGN		AWGN		
Treselection	S	0			•	
Ssearch <sub>RAT</sub>	DB	not sent				

Table 8.2.2.4.3: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2	(GSM)
Parameter	Offic	T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	- <del>80</del> 90	- <del>70</del> 75
RXLEV_ACCESS_MIN	dBm	-100	
MS_TXPWR_MAX_CCH	dBm	30	

#### 8.2.2.4.4.1.2 Procedure

- a) The SS activates cell 1 and 2 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST and LOCATION UPDATING REQUEST messages from the UE.
- b) The UE is switched on.
- c) The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- d) After <u>15-45</u> s, the parameters are changed as described for T2.
- e) The SS waits for LOCATION UPDATING REQUEST messages from the UE.
- f) After <u>15-35</u> s, the parameters are changed as described for T1.
- g) The SS waits for RRC CONNECTION REQUEST messages from the UE.
- h) Repeat steps d) to g) [TBD] times.

#### 8.2.2.4.4.2 1,28 Mcps Option

#### 8.2.2.4.4.2.1 Initial conditions

This scenario implies the presence of 1 1.28 Mcps TDD serving cell, and 1 GSM cell to be re-selected. Test parameters are given in table 8.2.2.4.1A, 8.2.2.4.2A, and 8.2.2.4.3A.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304. Cell 1 and cell 2 shall belong to different location areas.

Table 8.2.2.4.1A: General test parameters for UTRAN (1.28 Mcps TDD OPTION) to GSM Cell Reselection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cell		Cell2	
Final condition	Active cell		Cell2	
DRX cycle length		S	1,28	
T1		S	15	
T2		S	15	

Table 8.2.2.4.2A: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)					
Timeslot Number		0		Dwl	PTS		
		T1	T2	T1	T2		
UTRA RF Channel Number		Channel 1		Channel 1		Char	nnel 1
PCCPCH_Ec/lor	dB	-3	-3				
DwPCH_Ec/lor	dB			0	0		
$\hat{I}_{or}/I_{oc}$	dB	13	-1	13	-1		
$I_{oc}$	dBm/1. 28 MHz	-80					
PCCPCH RSCP	dBm	-70	-84				
Propagation Condition		AWGN AWGN		/GN			
<del>-</del> :							
Treselection	S	0					
Ssearch <sub>RAT</sub>	dB	Not sent					
Qrxlevmin	dBm	-103					
Qoffset1 <sub>s,n</sub>	dB	C1, C2: 0					
Qhyst1 <sub>s</sub>	dB		(	)	·		

Table 8.2.2.4.3A: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	(GSM)	
	Oilit	T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-75	-70
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

### 8.2.2.4.4.2.2 Procedure

- a) The SS activates cell 1 and 2 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST and LOCATION UPDATING REQUEST messages from the UE.
- b) The UE is switched on.
- c) The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.
- d) After 15 s, the parameters are changed as described for T2.
- e) The SS waits for LOCATION UPDATING REQUEST messages from the UE.
- f) After 15 s, the parameters are changed as described for T1.
- g) The SS waits for RRC CONNECTION REQUEST messages from the UE.
- h) Repeat steps d) to g) [TBD] times.

# 8.2.2.4.5 Test Requirements

# 8.2.2.4.5.1 3,84 Mcps Option

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8-27.9 s.
- 3) In step g), the UE shall respond on cell 1.

For the test to pass, the total number of fulfilled test requirements in step 2) shall be at least 90% 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.

#### 8.2.2.4.5.2 1,28 Mcps Option

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8 s.
- 3) In step g), the UE shall respond on cell 1.

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.

#### **UTRAN Connected Mode Mobility** 8.3

#### 8.3.1 TDD/TDD Handover for 3,84 Mcps Option

#### 8.3.1.1 Handover to intra-frequency cell

#### 8.3.1.1.1 Definition and applicability

Handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH. 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 DPCH, excluding the RRC procedure delay as defined in [9].

The requirements and this test apply to the UTRA TDD UE.

#### 8.3.1.1.2 Minimum requirement

The hard handover delayinterruption time shall be less than 40 ms in the single carrier case when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/TDD intra-frequency handover is commanded, the interruption time shall be less than,

 $\underline{\mathbf{T}_{interrupt}} = \mathbf{T}_{offset} + \mathbf{T}_{UL} + 30^* \mathbf{F}_{SFN} + 20^* \mathbf{KC} + 180^* \mathbf{UC} \mathbf{n}$	<u>ns</u>

	L	_	
<b>11</b> /	n	$\boldsymbol{\omega}$	re

Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time that can elapse until the appearance of a Beacon channel

Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell

Equal to 1 if SFN decoding is required and equal to 0 otherwise

Equal to 1 if a known target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

An intra-frequency TDD target cell shall be considered as known by the UE, if either or both of the following conditions are true:

the target cell has been measured during the last 5 seconds

the UE has had a radio link connected to the target cell during the last 5 seconds.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.1.

### 8.3.1.1.3 Test purpose

The purpose of this test is to verify the requirement for the intra-frequency handover delay in CELL\_DCH state in the single carrier case.

#### 8.3.1.1.4 Method of test

#### 8.3.1.1.4.1 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 8.3.1.1.1 and 8.3.1.1.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP and SFN-CFN observed timed difference shall be reported together with Event 1G. 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 message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The UL DPCH shall be transmitted in timeslot 12.

Table 8.3.1.1.1: General test parameters for Handover to intra-frequency cell

Para	meter	Unit	Value	Comment
DCH parame	DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2
Power Contro	ol		On	
Target quality DTCH	value on	BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 2	
HCS	•		Not used	
0		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigg	er	ms	0	
Filter coefficie	ent		0	
Monitored cel	I list size		6 TDD neighbours on Channel 1	
T1		S	10	
T2	T2		10	
T3		S	10	

Table 8.3.1.1.2: Cell specific test parameters for Handover to intra-frequency cell

Parameter	Unit	С	Cell 1			Co	ell 2	
DL timeslot number		0	4			0	5	
		T1 T2 T3	T1 T2 7	T3	T1	T2 T3	T1 T2	T3
UTRA RF Channel Number		Channel 1		Channel 1				
PCCPCH_Ec/lor	dB	-3	n.a.			-3	n.a	١.
SCH_Ec/lor	dB	9	n.a.		-9		n.a	١.
SCH_t <sub>offset</sub>	dB	0	n.a.		5 n.a.		١.	
DPCH_Ec/lor	dB	n.a.	Note 1 r	n.a.		n.a.	n.a.	Note 1
OCNS_Ec/lor	dB	-3,12	Note 2 r	ı.a.	n.a.	-3,12	n.a.	Note 2
$\hat{I}_{or}/I_{oc}$	dB		1		-Inf.	3	-Inf.	3
PCCPCH RSCP	dBm	-72 n.aInf70 n.a.			١.			
$I_{oc}$	dBm/ 3,84 MHz	-70						
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 lor .

#### 8.3.1.1.4.2 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) 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 triggered by event 1G.
- 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 DPCH to cell 2 less than 40 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 10 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)	Value/Nemaik
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 (10.3.7.36)	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)	Not i resem
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-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 synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator -Primary CCPCH RSCP reporting indicator	TRUE TRUE
-Pathloss reporting indicator	TRUEFALSE
-Reporting quantities for monitored set cells (10.3.7.5)	TROE ALGE
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	TRUE FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUEFALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -CHOICE reported cell	Depart all active act calls u calls within
-CHOICE reported cell	Report all active set cells + cells within
-Maximum number of reported cells	monitored set on used frequency 2
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
—-CHOICE mode —-Primary CCPCH info (10.3.6.57)	TDD
——-Primary CCPCH into (10.3.6.57) ——-CHOICE mode	TDD
	3.84 Mcps
——————————————————————————————————————	Case 2
	0
	0
SCTD indicator	FALSE
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms

	Information Element/Group name	Value/Remark		
-Amou	unt of reporting	Infinity		
-Repo	rting interval	0 ms (Note 2)		
	rting cell status	Not Present		
Physical	channel information elements			
	ompressed 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-RNTI -New C-RNTI	Not Present Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	Not i resent
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE mode	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	00 ID
-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	TDD
-CHOICE TIDD option	3.84 Mcps TDD
-UL Target SIR	Not Present
-CHOICE UL OL PC info	Individually signalled
-CHOICE TDD option	3.84 Mcps TDD
-Indivdual Timeslot interference info	1
-Individual timeslot interference (10.3.6.38)	·
-Timeslot Number (10.3.6.84)	
-CHOICE TDD option	3.84 Mcps TDD
-Timeslot number	12
-UL Timeslot Interference	-90 dBm
-CHOICE mode	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE Timing Advance	Disabled
-UL CCTrCH list	1
-UL Target SIR	TBD dB
-Time Info (10.3.6.83)	To
-Activation Time	T3
-Duration -Common timeslot info	Infinite
-Common timeslot into -Uplink DPCH timeslots and codes (10.3.6.94)	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94) -Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	i aise
-First individual timeslot linio (10.3.6.37) -Timeslot Number (10.3.6.84)	
-CHOICE TDD option	3.84 Mcps
-Timeslot number	12
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-Choice TDD option	3.84 Mcps
-Choice Burst Type	Type 1
-Midamble Allocation Mode	Default
-Midamble configuration burst type 1 and 3	16
-Midamble shift	Not present
-CHOICE TDD option	3.84 Mcps
-First timeslot code list	1
-Channelisation code	8/1
-Choice more timeslots	No more timeslots

Information Element	Value/Remark
Downlink radio resources	T dido/itolilalit
-CHOICE mode	TDD
-Downlink information common for all radio links (10.3.6.24)	100
-Downlink Information common for all RL (10.3.6.18)	
	Initialiaa
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	TDD
-CHOICE mode	TDD
-TPC Step size	1 dB
-CHOICE mode	TDD
-CHOICE mode	TDD
-CHOICE TDD option	3.84 Mcps
-TX Diversity mode (10.3.6.86)	None
-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	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-CHOICE TDD option	3.84 Mcps
-CHOICE sync case	Case 2
-Timeslot	0
-Cell parameters ID	20
-SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	1 4130
-CHOICE mode	TDD
-DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	Not i lesent
-Activation Time	Т3
-Activation Time	Infinite
-Duration -Common timeslot info	Not Present
	Not Flesent
-Downlink DPCH timeslots and codes (10.3.6.32)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	0.0444
-CHOICE TDD option	3.84 Mcps
-Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE TDD option	3.84 Mcps
-CHOICE Burst Type	Type 1
-Midamble Allocation Mode	Default
-Midamble configuration burst type 1 and 3	16
-Midamble shift	Not present
-CHOICE TDD option	3.84 Mcps
-First timeslot channelisation codes (10.3.6.17)	
-CHOICE codes representation	Consecutive codes
-First channelisation code	16/1
-Last channelisation code	16/2
-CHOICE more timeslots	No more timeslots
-SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message (step 6) 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.

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	<u>1</u>
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	<u>1</u>
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Checked that this IE is present
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	<u>20</u>
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>1G</u>
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	TDD
-CHOICE mode	TDD
-Cell parameters ID	<u>40</u>

## 8.3.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than [FFS]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.

# 8.3.1.2 Handover to inter-frequency cell

# 8.3.1.2.1 Definition and applicability

The handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH. 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 DPCH, excluding the RRC procedure delay as defined in [9].

The requirements and this test apply to the UTRA TDD UE.

### 8.3.1.2.2 Minimum requirement

The <u>interruption time</u> hard handover delay shall be less than 40 ms in the dual carrier case when the cell is known by the UE and the SFN of the target cell needs to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/TDD inter-frequency handover is commanded, the interruption time shall be less than,

$$T_{\text{interrupt}} = T_{\text{offset}} + T_{\text{UL}} + 30*F_{\text{SFN}} + 20*KC + 180*UC \text{ ms}$$

where,

$T_{\text{offset}}$	Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time
	that can elapse until the appearance of a Beacon channel
T <sub>UL</sub> .	Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell
F <sub>SFN</sub>	Equal to 1 if SFN decoding is required and equal to 0 otherwise
<u>KC</u>	Equal to 1 if a known target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise
UC	Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

An inter-frequency TDD target cell shall be considered as known by the UE, if either or both of the following conditions are true:

- the target cell has been measured during the last 5 seconds
- the UE has had a radio link connected to the target cell during the last 5 seconds.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.2.

## 8.3.1.2.3 Test purpose

The purpose of this test is to verify the requirement for the inter-frequency handover delay in CELL\_DCH state in the dual carrier case.

#### 8.3.1.2.4 Method of test

#### 8.3.1.2.4.1 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 8.3.1.2.1 and 8.3.1.2.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The PCCPCH RSCP and SFN-CFN observed time difference 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 message with activation time at beginning of T3 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. The UL DPCH shall be transmitted in timeslot 12.

Table 8.3.1.2.1: General test parameters for Handover to inter-frequency cell

Para	ameter	Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2
Power Contro	ol		On	
Target quality	y value on	BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbour cell		Cell 2	
Final condition	Final Active cell		Cell 2	
HCS			Not used	
0			0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigg	jer	ms	0	
Threshold no frequency	Threshold non-used dE		-80	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T <sub>SI</sub>		S	1,28	The value shall be used for all cells in the test.
T1		S	10	
T2	T2		10	
T3		S	10	

Table 8.3.1.2.2: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1 Cell 2											
DL timeslot number		0		4		2		5					
		T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1			Channel 2								
PCCPCH_Ec/lor	dB		-3			n.a.			-3			n.a	١.
SCH_Ec/lor	dB		-9 n.a.			-9			n.a.				
SCH_t <sub>offset</sub>	dB	0		n.a.		5		n.a.					
DPCH_Ec/lor	dB		n.a.		Not	e 1	n.a.	n.a.		n.	a.	Note 1	
OCNS_Ec/lor	dB		-3,12		Not	e 2	n.a.	n.a3,12		,12	n.	a.	Note 2
$\hat{I}_{or}/I_{oc}$	dB		1			-Inf.		7	-lı	nf	7		
PCCPCH RSCP	dBm	-72 n.aInf66 n.a.				١.							
$I_{oc}$	dBm/ 3,84 MHz	-70											
Propagation Condition		AWGN											
Note 1: The DPCH level is controlled by the power control loop													

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 lor.

### 8.3.1.2.4.2 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) 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 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 DPCH to cell 2 less than 40 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 10 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, event 2C (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	raido, Nomai N
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)	N . B
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	lates for some some still a seite of
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Inter-frequency reporting criteria -Filter coefficient	0
-CHOICE mode	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	Tilliary Cor Cit Nooi
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	171202
-SFN-SFN observed time difference reporting indicator	Type 1No Report
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	TRUE FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE FALSE
-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	1
frequency	Not Decout
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22) -CHOICE report criteria	Not Present
-CHOICE report citiena	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	ontona
-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-
	used frequency
-Maximum number of reported cells per reported non-used	1
frequency	
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-80 dBm
-W non-used frequency	<u>  1</u>
Physical channel information elements	Not Propert
-DPCH compressed mode status info (10.3.6.34)	Not Present

# PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE mode	TDD
-UARFCN (Nt)	Same 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	TDD
-CHOICE TDD option	3.84 Mcps TDD
-UL Target SIR	Not Present
-CHOICE UL OL PC info	Individually signalled
-CHOICE TDD option	3.84 Mcps TDD
-Indivdual Timeslot interference info	1
-Individual timeslot interference (10.3.6.38)	
-Timeslot Number (10.3.6.84)	2.04 Mana TDD
-CHOICE TDD option -Timeslot number	3.84 Mcps TDD 12
- UL Timeslot Interference	-90 dBm
- OL Timesiot interierence -CHOICE mode	TDD
	100
-Uplink timing advance control (10.3.6.96) -CHOICE <i>Timing Advance</i>	Disabled
-UL CCTrCH list	1
-UL Target SIR	TBD dB
-DL Target SIK -Time Info (10.3.6.83)	100 40
-Activation Time	Т3
-Activation Time -Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	HOLI TOSOTIL
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	. 3.30
-Timeslot Number (10.3.6.84)	
-CHOICE TDD option	3.84 Mcps
-Timeslot number	12
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	-
-CHOICE TDD option	3.84 Mcps
-CHOICE Burst Type	Type 1
-Midamble Allocation Mode	Default
-Midamble configuration burst type 1 and 3	16
-Midamble shift	Not present
-CHOICE TDD option	3.84 Mcps
-First timeslot code list	1
-Channelisation code	8/1
-CHOICE more timeslots	No more timeslots
	1

Information Element	Value/Remark
Downlink radio resources	raidoment
-CHOICE mode	TDD
-Downlink information common for all radio links (10.3.6.24)	166
-Downlink Information common for all RL (10.3.6.18)	
-Timing indicator	Initialia
	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	TDD
-CHOICE mode	TDD
-TPC Step size	1 dB
-CHOICE mode	TDD
-CHOICE mode	TDD
-CHOICE TDD option	3.84 Mcps
-TX Diversity mode (10.3.6.86)	None
-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	TDD
-Primary CCPCH info (10.3.6.57)	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps
- CHOICE sync case	Case 2
- Timeslot	2
- Cell parameters ID	20
- SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	1 4.00
-CHOICE mode	TDD
- DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	Not i lesem
-Activation Time	Т3
-Duration	Infinite
-Common timeslot info	Not Present
	Not i lesent
- Downlink DPCH timeslots and codes (10.3.6.32)	
- First individual timeslot info (10.3.6.37)	
- Timeslot Number (10.3.6.84)	2.04 Mana
- CHOICE TDD option	3.84 Mcps
- Timeslot number	5
- TFCI existence	True
- Midamble shift and burst type (10.3.6.41)	2011
- CHOICE TDD option	3.84 Mcps
- CHOICE Burst Type	Type 1
- Midamble Allocation Mode	Default
<ul> <li>Midamble configuration burst type 1 and 3</li> </ul>	16
- Midamble shift	Not present
- CHOICE TDD option	3.84 Mcps
<ul> <li>First timeslot channelisation codes (10.3.6.17)</li> </ul>	
- CHOICE codes representation	Consecutive codes
- First channelisation code	16/1
- Last channelisation code	16/2
- CHOICE more timeslots	No more timeslots
- SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message (step 6) for Inter frequency test cases

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

Information Element	<u>Value/remark</u>
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	<u>1</u>
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	<u>1</u>
-Frequency info	
-CHOICE mode	<u>TDD</u>
UARFCN(Nt)	Same frequency as channel 2 in Table 8.6.2.4.1.2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	<u>1</u>
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Checked that this IE is present
-CHOICE mode	TDD
-Cell parameters ID	Set to cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	2 <u>C</u>
-Frequency Info	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2 in Table 8.6.2.4.1.2
-CHOICE mode	TDD
-Primary CCPCH Info	
-CHOICE mode	TDD
-CHOICE TDD Option	3.84 Mcps TDD
-CHOICE Sync Case	Not Present
-Cell Parameters ID	Set to cell parameters ID of Cell 2
-SCTD Indicator	FALSE

# 8.3.1.2.5 Test requirements

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

<Next Changed Section>

# 8.3.2 TDD/FDD Handover for 3,84 Mcps Option

### 8.3.2.1 Definition and applicability

The handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCCH. 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, excluding the RRC procedure delay as defined in [9].

The requirements and this test apply to the UTRA TDD / FDD UE.

# 8.3.2.2 Minimum requirement

The <u>interruption time</u>hard handover delay shall be less than 100 ms in the single carrier case when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/FDD handover is commanded, the interruption time shall be less than,

 $T_{interrupt} = T_{offset} + 40 + 50 * KC + 150 * UC ms$ 

#### where,

<u>Toffset</u>	Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell.
KC	Equal to 1 if a known target cell is indicated in the RRC message implying TDD/FDD handover and equal to 0 otherwise
UC	Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/FDD handover and equal to 0 otherwise

An inter-frequency FDD target cell shall be considered known by the UE, if the target cell has been measured by the UE during the last 5 seconds.

The phase reference is the Primary CPICH.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.2 and A.5.2.

# 8.3.2.3 Test purpose

The purpose of this test is to verify the requirement for the TDD/FDD handover delay in CELL\_DCH state.

#### 8.3.2.4 Method of test

#### 8.3.2.4.1 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.

The test parameters are given in table 8.3.2.1, 8.3.2.2 and 8.3.2.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G and 2B shall be used. The CPICH\_RSCP of the best cell on the unused frequency shall be reported together with Event 2B reporting. 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 message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

Table 8.3.2.1: General test parameters for TDD/FDD handover

Parai	Parameter		Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2
Power	Control		On	
Target qual DT	ity value on CH	BLER	0.01	
Initial	Active cell		Cell 1	TDD cell
conditions	Neighbour cell		Cell 2	FDD cell
Final condition	Active cell		Cell 2	FDD cell
Н	CS		Not used	
(	0		0	Cell individual offset. This value shall be used for all cells in the test.
Hyste	eresis	dB	3	Hysteresis parameter for event 2B
Time to	Trigger	ms	0	
Absolute threshold used frequency		dBm	-71	Applicable for Event 2B
Threshold non-used frequency		dBm	-80	Applicable for Event 2B
W used frequency			4	Applicable for Event 2B
W non-use	d frequency		1	Applicable for Event 2B
	efficient		0	
Monitored cell list size		ored cell list size 6 TDD neighbours on Channel 1 6 FDD neighbours on Channel 2		
T <sub>SI</sub>		S	1.28	The value shall be used for all cells in the test.
Т	•	S	5	
Т	2	S	15	
T3		S	5	

Table 8.3.2.2: Cell 1 specific test parameters for TDD/FDD handover

Parameter	Unit		Cell 1					
DL timeslot number		0						
		T1	T2	T3	T1	T2	T3	
UTRA RF Channel Number				Chani	nel 1			
PCCPCH_Ec/lor	dB		-3			n.a.		
SCH_Ec/lor	dB		-9			n.a.		
SCH_t <sub>offset</sub>	dB	0 n.a.						
DPCH_Ec/lor	dB		n.a.		Note 1		n.a.	
OCNS_Ec/lor	dB		-3,12		Note 2		n.a.	
$\hat{I}_{or}/I_{oc}$	dB	5	-	1	5	-	1	
PCCPCH RSCP	dBm	-68 -74 n.a.						
$I_{oc}$	dBm/ 3,84 MHz	-70						
Propagation Condition				AW	GN			

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 lor.

Table 8.3.2.3: Cell 2 specific test parameters for TDD/FDD handover

Parameter	Unit	Cell 2			
		T1, T2	T3		
CPICH_Ec/lor	dB	-10			
PCCPCH_Ec/lor	dB	-12			
SCH_Ec/lor	dB	-12			
PICH_Ec/lor	dB	-15			
DPCH_Ec/lor	dB	n.a.	Note 1		
OCNS_Ec/lor	dB	-0,941	Note 2		
CPICH_RSCP	dBm	-83	-77		
$\hat{I}_{or}/I_{oc}$	dB	-3	3		
$I_{oc}$	dBm/3. 84 MHz	-70			
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  $I_{\rm or}$ 

#### 8.3.2.4.2 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) 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 2B.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.
- 8) After 15 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:

# MEASUREMENT CONTROL message, event 2B (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)	AMPLO
-Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode	AM RLC
-Additional measurements list (10.3.7.1)	Event trigger Not Present
-Additional measurements list (10.5.7.1) -CHOICE Measurement type	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	inter-nequency measurement
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	THOU TOOGHT
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Inter-frequency reporting criteria	and the question represents a series
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH RSCP
-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 1No Report
-Cell synchronisation information reporting indicator	TRUEFALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator	TRUE TRUE
-Pathloss reporting indicator	TRUEFALSE
-Reporting cell status (10.3.7.61)	TROE ALSE
-CHOICE reported cell	Report cells within monitored set on non-
Citate Lipoted con	used frequency
-Maximum number of reported cells per reported non-used	1
frequency	
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting
	criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity (10.3.7.14)	Event 2B
-Threshold used frequency	-71 dBm
-W used frequency	1   0 dB
-Hysteresis -Time to trigger	0 dB 0 ms
-Reporting cell status (10.3.7.61)	O III3
-CHOICE reported cell	Report cells within monitored set on non-
	used frequency
-Maximum number of reported cells per reported non-used	1
frequency	
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-80 dBm
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

# PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI -New C-RNTI	Not Present Not Present
-RRC State Indicator	CELL DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	Hottioont
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements  Frequency info (10.3.6.36)	
-Frequency info (10.3.6.36) -CHOICE <i>mode</i>	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 - PC Preamble	-6dB 1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
-CHOICE mode	FDD
-Scrambling code type	Long
-Scrambling code number	0 (0 to 16777215)
-Number of DPDCH	Not Present(1)
-Spreading factor	SF is reference to TS34.108 clause 6.10
TEOL suitatamas	Parameter Set
-TFCI existence -Number of FBI bit	TRUE Not Present(0)
-Puncturing Limit	Reference to TS34.108 clause 6.10
Tunicianing Entite	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	0 (single) FDD
-Power offset P <sub>Pilot-DPDCH</sub>	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 <i>mode</i> -DPCH compressed mode info (10.3.6.33)	FDD Not Present (Note 1)
To the compressed mode into (10.5.0.55)	Not i resent (Note i)

	Value/Remark None Not Present				
1					
-55D1 Information (10.3.6.77)					
	-				
	0				
-Downlink information per radio link list	1				
-Downlink information for each radio link (10.3.6.27)	EDD				
	FDD				
-Primary CPICH info (10.3.6.60)					
· ····································	350				
. =	Not Present				
3 ( )	Not Present				
-Downlink DPCH info for each RL (10.3.6.21)					
0.10.01 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				
	Not Present				
Note 1: IE "DPCH compressed mode info" is not needed as def	fault values are applied that have previously				
been received in RADIO BEARER SETUP or RRC CON					

MEASUREMENT REPORT message for Inter frequency test cases

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

Information Element	Value/remark
Message Type (10.2.17)	<u>value/remark</u>
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	<del> </del>
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	<del> </del>
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2 in Table 8.3.2.3
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1 1
-Cell measured results (10.3.7.3)	<del> </del>
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	FDD
-Primary CPICH Info	1 <u>1 DD</u>
-Primary scrambling code	Set to Primary scrambling code of Cell2
-CPICH Ec/No	Not Present
-CPICH RSCP	Checked that this IE is present
-Pathloss	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	11001100011
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	
-Inter-frequency cells	2 <u>B</u> 1
-Frequency Info	<del>-</del>
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2 in Table 8.3.2.3
-CHOICE mode	FDD
-Primary CPICH info	
-Primary Scrambling Code	Set to Primary scrambling code of Cell2

# 8.3.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than [FFS] 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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# 8.7.2 CPICH measurements (FDD)

# 8.7.2.1 CPICH RSCP

**Void** 

### 8.7.2.1.1 Absolute measurement accuracy

# 8.7.2.1.1.1 Definition and applicability

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

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

#### 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 RSCP1,2|<sub>dBm</sub> ≥ -114 dBm.

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

## Table 8.7.2.1.1.1: CPICH RSCP inter frequency absolute accuracy

		Accura	<b>Conditions</b>	
<u>Parameter</u>	<u>Unit</u>	Normal condition	Extreme condition	lo [dBm/ 3.84 MHz]
CPICH RSCP	<u>dBm</u>	<u>± 6</u>	<u>± 9</u>	<u>-9470</u>
CPICH RSCP	<u>dBm</u>	<u>± 8</u>	<u>± 11</u>	<u>-7050</u>

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.2.1 and A.9.1.2.1.

### 8.7.2.1.1.3 Test purpose

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

#### 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. In this case both cells are on different frequencies. Cell 1 is a UTRA TDD cell and cell 2 is a UTRA FDD cell. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. No second Beacon timeslot shall be provided for cell 1. CPICH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in table 8.7.2.1.1.2.

Test 1 Test 2 **Parameter Unit** Cell 1 Cell 2 Cell 1 Cell<sub>2</sub> DL timeslot number n.a. n.a. UTRA RF Channel number Channel 2 Channel 1 Channel 1 Channel 2 CPICH\_Ec/lor -10 -10 n.a n.a PCCPCH\_Ec/lor dB -12 -12 dB -12 SCH\_toffset 5 n.a. PICH\_Ec/lor dB <u>n.a</u> OCNS\_Ec/lor dB -3.12 -0.94 -3.12 -0.94 dBm/ 3.84 <u>-57.7</u> -84.7 <del>-84</del> loc <u>-60</u> MHz 9.54 0 Îor/loc dB PCCPCH RSCP. Note 1 dBm -53.7 -84 7 n.a. n.a. CPICH RSCP, Note 1 <u>dBm</u> -60.46-94 n.a n.a dBm/ 3.84 lo, Note 1 <u>-50</u> <u>-50</u> <del>-80</del> <u>-81</u> MHz Propagation condition **AWGN AWGN** PCCPCH RSCP, CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves

Table 8.7.2.1.1.2: 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 8.7.2.1.1.2.

# 8.7.<u>2.1.1.4.2 Procedure</u>

- 1) SS shall transmit the MEASUREMENT CONTROL message for inter frequency measurement.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check CPICH RSCP value of Cell 2 in the MEASUREMENT REPORT messages. CPICH RSCP levels of Cell 2 reported by the UE is compared to the actual CPICH RSCP value of Cell 2 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, steps 2) and 3) 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 I, with the following exceptions:

# MEASUREMENT CONTROL message for inter frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
<u>UE information elements</u>	
-RRC transaction identifier	<u>0</u>
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2 <u>Setup</u>
-Measurement Command	<u>Setup</u>
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
<u>Mode</u>	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	<u>0</u>
-CHOICE mode	FDD
-Measurement quantity for frequency quality	<u>CPICH RSCP</u>
<u>estimate</u>	
-Inter-frequency reporting quantity	
<u>-UTRA Carrier RSSI</u>	<u>FALSE</u>
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-SFN-SFN observed time difference reporting	No report
indicator	
-Cell synchronisation information reporting	<u>FALSE</u>
indicator	
-Cell Identity reporting indicator	<u>FALSE</u>
-CHOICE mode	<u>FDD</u>
-CPICH Ec/N0 reporting indicator	FALSE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	<u>FALSE</u>
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	<u>500 ms</u>
Physical channel information elements	
-DPCH compressed mode status info	Not Present

# 8.7.2.1.1.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.2.1.1.2.

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.

# 8.7.2.2 CPICH Ec/lo

Void

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Category: $\mathbb{R}$ Release: $\mathbb{R}$ Rel-4Use one of the following categories:Use one of the following release $F$ (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-4 (Release 4)Rel-5 (Release 5)Rel-6 (Release 6)							) ) ) )						
Reason for change	e: X	purp	ose of	e require handove sing from	r evalua	ation fro	om in	UTF	RA TDD	(3.84)			
Summary of chang	ge: ૠ			of CPIC DD (3.84				nent	perform	ance	requii	rements	and test
Consequences if not approved:	ж			formance (3.84 Me			and	test	for the (	CPICH	d mea	asureme	nt in
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# 8.7.2 CPICH measurements (FDD)

# 8.7.2.1 CPICH RSCP

**Void** 

### 8.7.2.1.1 Absolute measurement accuracy for 3.84 Mcps TDD Option

#### 8.7.2.1.1.1 Definition and applicability

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

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

#### 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 RSCP1,2|<sub>dBm</sub> ≥ -114 dBm.

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

# Table 8.7.2.1.1.1: CPICH RSCP inter frequency absolute accuracy

		Accura	<b>Conditions</b>	
<u>Parameter</u>	<u>Unit</u>	Normal condition	Extreme condition	lo [dBm/ 3.84 MHz]
CPICH RSCP	<u>dBm</u>	<u>± 6</u>	<u>± 9</u>	<u>-9470</u>
CFICH ROCE	<u>dBm</u>	<u>± 8</u>	<u>± 11</u>	<u>-7050</u>

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.2.1 and A.9.1.2.1.

### 8.7.2.1.1.3 Test purpose

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

#### 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. In this case both cells are on different frequencies. Cell 1 is a UTRA TDD cell and cell 2 is a UTRA FDD cell. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. No second Beacon timeslot shall be provided for cell 1. CPICH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in table 8.7.2.1.1.2.

Test 1 Test 2 **Parameter Unit** Cell 1 Cell 2 Cell 1 Cell<sub>2</sub> DL timeslot number n.a. n.a. UTRA RF Channel number Channel 2 Channel 1 Channel 1 Channel 2 CPICH\_Ec/lor -10 -10 n.a n.a PCCPCH\_Ec/lor dB -12 -12 dB -12 5 SCH\_toffset n.a. PICH\_Ec/lor dB <u>n.a</u> OCNS\_Ec/lor dB -3.12 -0.94 -3.12 -0.94 dBm/ 3.84 <u>-57.7</u> -84.7 <del>-84</del> loc <u>-60</u> 9.54 0 Îor/loc dB PCCPCH RSCP. Note 1 dBm -53.7 -84 7 n.a. n.a. CPICH RSCP, Note 1 <u>dBm</u> -60.46-94 n.a n.a dBm/ 3.84 lo, Note 1 <u>-50</u> <u>-50</u> <del>-80</del> <u>-81</u> MHz Propagation condition **AWGN AWGN** PCCPCH RSCP, CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves

Table 8.7.2.1.1.2: 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 8.7.2.1.1.2.

# 8.7.<u>2.1.1.4.2 Procedure</u>

- 1) SS shall transmit the MEASUREMENT CONTROL message for inter frequency measurement.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check CPICH RSCP value of Cell 2 in the MEASUREMENT REPORT messages. CPICH RSCP levels of Cell 2 reported by the UE is compared to the actual CPICH RSCP value of Cell 2 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, steps 2) and 3) 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 I, with the following exceptions:

# MEASUREMENT CONTROL message for inter frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
<u>UE information elements</u>	
-RRC transaction identifier	<u>0</u>
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2 Setup
-Measurement Command	<u>Setup</u>
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
<u>Mode</u>	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	<u>0</u>
-CHOICE mode	<u>FDD</u>
<ul> <li>-Measurement quantity for frequency quality</li> </ul>	<u>CPICH RSCP</u>
estimate	
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	<u>FALSE</u>
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-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	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	<del></del>
-DPCH compressed mode status info	Not Present
	1.000 TOO TOO TOO TOO TOO TOO TOO TOO TOO

# 8.7.2.1.1.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.2.1.1.2.

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.

#### 8.7.2.1A.1 Absolute measurement accuracy for 1.28 Mcps TDD Option

Void

# 8.7.2.2 CPICH Ec/lo

Void

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

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# 8.7.3 Timeslot ISCP

**Void** 

# 8.7.3.1 Intra frequency measurement accuracy

### 8.7.3.1.1 Absolute accuracy requirement

#### 8.7.3.1.1.1 Definition and applicability

The absolute accuracy of Timeslot ISCP is defined as the Timeslot ISCP meaasured from one cell / timeslot combination compared to the actual Timeslot ISCP level for the same cell / timeslot combination.

The requirements and this test apply to all types of UTRA TDD UE.

### 8.7.3.1.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.3.1.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P - CCPCH _E_c}{I_o}\right)_{in, dB} \ge -8dB$$

$$\left(\frac{SCH_{-}E_{c}}{I_{o}}\right)_{in\ dB} \ge -13dB$$

Table 8.7.3.1.1.1: Timeslot ISCP intra frequency absolute accuracy

<u>Parameter</u>	<u>Unit</u>	Accura	<b>Conditions</b>	
		Normal conditions	Extreme conditions	<u>lo [dBm/ 3.84</u> <u>MHz]</u>
Timeslot ISCP	<u>dB</u>	<u>± 6</u>	<u>± 9</u>	<u>-10574</u>

The normative reference for this requirement is TS 25.123 [2] clauses 9.2.1.2.1.1 and A.9.1.3.

# 8.7.3.1.1.3 Test Purpose

The purpose of this test is to verify that the Timeslot ISCP measurement accuracy is within the specified limits.

8.7.3.1.1.4 Method of test

8.7.3.1.1.4.1 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. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The Timeslot ISCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.3.1.1.2.

Test 1 Test 2 Test 3 **Parameter Unit** Cell 2 Cell 1 Cell 2 Cell 1 Cell 2 Cell 1 DL timeslot number 0 0 0 0 **UTRA RF Channel number** Channel 1 Channel 1 Channel 1 PCCPCH\_Ec/lor dB SCH\_Ec/lor dB SCH\_toffset O OCNS Ec/lor dB 3,12 3,12 dBm / 3.84 MHz -75.7 -598 -98 7 Timeslot ISCP, Note 1 -73.7 -70.7 -57.8 -50.8 -98.7 -95.7 dBm lo, Note 1 dBm / 3.84 MHz -94 **Propagation condition AWGN** AWGN **AWGN** NOTE 1: Timeslot ISCP and lo levels have been calculated from other parameters for information purposes. They

Table 8.7.3.1.1.2: Timeslot ISCP intra frequency test parameters

NOTE 1: Timeslot ISCP and to levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

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 8.7.3.1.1.2.

#### 8.7.3.1.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check Timeslot ISCP values for Cell 1 / Timeslot 0 and Cell 2 / Timeslot 0 combinations in MEASUREMENT REPORT messages. These Timeslot ISCP values reported by the UE are compared to the actual Timeslot ISCP levels 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 8.7.3.1.1.2 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 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.1.2 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 2) and 3) above are 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 I, with the following exceptions:

# MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	<u>value/IVeIIIaIN</u>
UE information elements	
-RRC transaction identifier	<u>0</u>
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity -Measurement Command (10.3.7.46)	1 Modify
-Measurement Reporting Mode (10.3.7.49)	Woully
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33) -CHOICE Intra-frequency cell removal	Not present
-New intra-frequency cells	
-Intra-frequency cell id	<u>2</u> 1
-Cell info	
-Cell individual offset	0
-Reference time difference to cell	Not present
-Read SFN indicator -CHOICE mode	FALSE TDD
-Primary CCPCH info (10.3.6.57)	100
-CHOICE mode	TDD
-CHOICE Sync case	<u>TDD</u> <u>2</u>
-Timeslot	<u>0</u>
-Cell parameters ID	Set to cell parameter ID of cell 1
-SCTD indicator -Primary CCPCH Tx power	FALSE Set to Primary CCPCH Tx power of cell 1
Timary CCT CTT TX power	as described in Table 8.7.3.1.2.
-Timeslot number	
-Burst type	<u>0</u> <u>1</u> <u>2</u>
-Intra-frequency cell id	2
-Cell info -Cell individual offset	
-Cell individual offset -Reference time difference to cell	0 Not present
-Read SFN indicator	FALSE
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-CHOICE Sync case	2
-Timeslot -Cell parameters ID	Set to cell parameter ID of cell 2
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2
	as described in Table 8.7.3.1.2.
-Timeslot number	<u>0</u> <u>1</u>
-Burst type	1
-Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9)	0
-Filter Coefficient (10.3.7.9) -CHOICE mode	TDD
-Measurement quantity list	1 1
-Measurement quantity	Timeslot ISCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	No series
-SFN-SFN observed time difference reporting indicator	No report
<ul> <li>Cell synchronisation information reporting indicator</li> <li>Cell Identity reporting indicator</li> </ul>	FALSE FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	<u>FALSE</u>
-Reporting quantities for monitored set cells (10.3.7.5)	No report
-SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator	No report FALSE
-oen synonionisation inionnation reporting indicator	IALOE

Information Element/Group name	Value/Remark
-Cell Identity reporting indicator	FALSE
-CHOICE mode	<u>TDD</u>
-Timeslot ISCP reporting indicator	<u>TRUE</u>
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	<u>FALSE</u>
-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	Virtual / active set cells + 1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	<u>Infinity</u>
-Reporting interval	<u>500 ms</u>
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

## 8.7.3.1.1.5 Test requirements

The Timeslot ISCP measurement accuracy shall meet the requirements in clause 8.7.3.1.1.2 for at least 900 of the reported Timeslot ISCP levels at each input level in step 4 for both Cell 1 / Timeslot 0 and Cell 2 / Timeslot 0 combinations.

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

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## 8.7.3 Timeslot ISCP

**Void** 

## 8.7.3.1 Intra frequency measurement accuracy for 3.84 Mcps TDD Option

### 8.7.3.1.1 Absolute accuracy requirement

### 8.7.3.1.1.1 Definition and applicability

The absolute accuracy of Timeslot ISCP is defined as the Timeslot ISCP meaasured from one cell / timeslot combination compared to the actual Timeslot ISCP level for the same cell / timeslot combination.

The requirements and this test apply to all types of UTRA TDD UE.

### 8.7.3.1.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.3.1.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P - CCPCH _E_c}{I_o}\right)_{in, dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)_{in\ dB} \ge -13dB$$

Table 8.7.3.1.1.1: Timeslot ISCP intra frequency absolute accuracy

<u>Parameter</u>	<u>Unit</u>	Accura	<b>Conditions</b>	
		Normal conditions	Extreme conditions	<u>lo [dBm/ 3.84</u> <u>MHz]</u>
Timeslot ISCP	<u>dB</u>	<u>± 6</u>	<u>± 9</u>	<u>-10574</u>

The normative reference for this requirement is TS 25.123 [2] clauses 9.2.1.2.1.1 and A.9.1.3.

# 8.7.3.1.1.3 Test Purpose

The purpose of this test is to verify that the Timeslot ISCP measurement accuracy is within the specified limits.

### 8.7.3.1.1.4 Method of test

### 8.7.3.1.1.4.1 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. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The Timeslot ISCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.3.1.1.2.

Test 1 Test 2 Test 3 **Parameter Unit** Cell 2 Cell 1 Cell 2 Cell 1 Cell 2 Cell 1 DL timeslot number 0 0 0 0 UTRA RF Channel number Channel 1 Channel 1 Channel 1 PCCPCH\_Ec/lor dB SCH\_Ec/lor dB SCH\_toffset O OCNS Ec/lor dB 3,12 3,12 dBm / 3.84 MHz -75.7 -598 -98 7 Timeslot ISCP, Note 1 -73.7 -70.7 -57.8 -50.8 -98.7 -95.7 dBm lo, Note 1 dBm / 3.84 MHz -94 **Propagation condition AWGN** AWGN **AWGN** NOTE 1: Timeslot ISCP and lo levels have been calculated from other parameters for information purposes. They

Table 8.7.3.1.1.2: Timeslot ISCP intra frequency test parameters

are not settable parameters themselves.

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 8.7.3.1.1.2.

### 8.7.3.1.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check Timeslot ISCP values for Cell 1 / Timeslot 0 and Cell 2 / Timeslot 0 combinations in MEASUREMENT REPORT messages. These Timeslot ISCP values reported by the UE are compared to the actual Timeslot ISCP levels 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 8.7.3.1.1.2 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 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.1.2 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 2) and 3) above are 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 I, with the following exceptions:

# MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	<u>valdo/Nomark</u>
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 -Additional measurements list (10.3.7.1)	Periodical reporting
-Additional measurements list (10.3.7.1) -CHOICE Measurement type	Not Present Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	intra-frequency measurement
-Intra-frequency measurement objects list (10.3.7.33)	
-CHOICE Intra-frequency cell removal	Not present
-New intra-frequency cells	
-Intra-frequency cell id	2 1
-Cell info	<del>-</del>
-Cell individual offset	<u>o</u>
-Reference time difference to cell	Not present
-Read SFN indicator	FALSE
-CHOICE mode	<u>TDD</u>
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-CHOICE TDD option	3.84 Mcps TDD
-CHOICE Sync case	$\frac{2}{3}$
-Timeslot	O Set to cell peremeter ID of cell 4
-Cell parameters ID -SCTD indicator	Set to cell parameter ID of cell 1 FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 1
Timary Cor off Tx power	as described in Table 8.7.3.1.2.
-Timeslot number	
-Burst type	$\begin{bmatrix} 0\\1\\2 \end{bmatrix}$
-Intra-frequency cell id	$\frac{1}{2}$
-Cell info	=
-Cell individual offset	<u>0</u>
-Reference time difference to cell	Not present
-Read SFN indicator	<u>FALSE</u>
-CHOICE mode	<u>TDD</u>
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-CHOICE TDD option	3.84 Mcps TDD
-CHOICE Sync case	2
-Timeslot -Cell parameters ID	O Sot to call parameter ID of call 2
-SCTD indicator	Set to cell parameter ID of cell 2 FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2
	as described in Table 8.7.3.1.2.
-Timeslot number	
-Burst type	<u>0</u> <u>1</u>
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	<u>0</u>
-CHOICE mode	TDD
-Measurement quantity list	<u>1</u>
-Measurement quantity	Timeslot ISCP
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 synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode -Timeslot ISCP reporting indicator	TDD TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
	I

Information Element/Group name	Value/Remark
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	<u>FALSE</u>
-CHOICE mode	<u>TDD</u>
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	<u>FALSE</u>
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	<u>FALSE</u>
-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>Virtual / active set cells + 1</u>
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	<u>Infinity</u>
-Reporting interval	<u>500 ms</u>
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

## 8.7.3.1.1.5 Test requirements

The Timeslot ISCP measurement accuracy shall meet the requirements in clause 8.7.3.1.1.2 for at least 900 of the reported Timeslot ISCP levels at each input level in step 4 for both Cell 1 / Timeslot 0 and Cell 2 / Timeslot 0 combinations.

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.

8.7.3.1A Intra frequency measurement accuracy for 1.28 Mcps TDD Option

Void

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# 8.7.4 UTRA carrier RSSI

**Void** 

## 8.7.4.1 Absolute measurement accuracy

### 8.7.4.1.1 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 TDD UE.

### 8.7.4.1.2 Minimum Requirements

Table 8.7.4.1.1: UTRA carrier RSSI inter frequency absolute accuracy

		Accura	<b>Conditions</b>	
<u>Parameter</u>	<u>Unit</u>	Normal condition	Extreme condition	lo [dBm/ 3.84 MHz]
UTRA carrier RSSI	<u>dBm</u>	<u>± 4</u>	<u>± 7</u>	<u>-9470</u>
OTRA Carrier RSSI	<u>dBm</u>	<u>± 6</u>	<u>± 9</u>	<u>-7050</u>

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.4.

### 8.7.4.1.3 Test Purpose

The purpose of this test is to verify that the UTRA carrier RSSI measurement accuracy is within the specified limits.

### 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.

In this case both cells are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. UTRA carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.4.1.2.

Test 1 Test 2 Test 3 **Parameter Unit** Cell 1 Cell 2 Cell 1 Cell 2 Cell 1 Cell 2 DL timeslot number **UTRA RF Channel** Channel 1 Channel 2 Channel 1 Channel 2 Channel 1 Channel 2 PCCPCH Ec/lor dB dB SCH\_Ec/lor SCH toffset 0 5 5 0 0 OCNS Ec/lor dB -3.12 -3.12 -3.12 dBm / **-75.2 -75.2** <u>-54.1</u> -98.7 -97 loc <u>-57.8</u> 3.84 MHz Îor/loc dB 5 5 0 dBm / Io, Note 1 -69 -50 -94 3.84 MHz Propagation **AWGN AWGN AWGN** condition NOTE 1: lo levels have been calculated from other parameters for information purposes. They are not settable

Table 8.7.4.1.2: UTRA carrier RSSI inter frequency test parameters

parameters themselves.

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 the MEASUREMENT CONTROL message for inter frequency measurements.
- 2) UE shall transmit periodically the MEASUREMENT REPORT messages.
- 3) 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.
- 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 8.7.4.1.2 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 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 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 2) and 3) above are 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 I, with the following exceptions:

# MEASUREMENT CONTROL message for inter frequency measurement (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	T STORY TO THE STORY
UE information elements	+
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	NOT FESCH
-Measurement Identity	
-Measurement Command (10.3.7.46)	2 Setup
-Measurement Reporting Mode (10.3.7.49)	Setup
-Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-Additional measurement sist (10.3.7.1) -CHOICE Measurement type	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	Inter-nequency measurement
-Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13)	
-ther-frequency measurement objects list (10.3.7.13) -CHOICE inter-frequency cell removal	Not present
-New inter-frequency cells	Cell 2 information is included
-New Inter-frequency cells -Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	NOUT TESETIL
-CHOICE reporting critera	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	Thirdly our critice.
-UTRA carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	INOL
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-Cell identity reporting indicator -CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Proposed TGSN Reporting required -Primary CCPCH RSCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	FALSE
-Pathloss reporting indicator -Reporting cell status (10.3.7.61)	FALSE
-Reporting cell status (10.3.7.61) -CHOICE reported cell	Report all active set cells + cells within
-CHOICE reponed cell	monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Maximum number of reported cells -Measurement validity (10.3.7.51)	Not present
-inter-frequency set update	Not present
-CHOICE report criteria (10.3.7.	Not present
-CHOICE report criteria (10.3.7Periodical reporting criteria (10.3.7.53)	
	Infinite
-Amount of reporting	Infinity 500 ms
-Reporting interval	500 ms
Physical channel information elements	10.00
-DPCH compressed mode status info (10.3.6.34)	Not Present

# 8.7.4.1.5 Test requirements

The UTRA carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.4.1.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) shall be added into the required accuracy defined in subclause 8.7.4.1.2 as shown in table 8.7.4.1.3.

Table 8.7.4.1.3: UTRA carrier RSSI absolute accuracy

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

The normative reference for this requirement is TS 25.123 [2] clause A.9.1.4.

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

### 8.7.4.2 Relative measurement accuracy

### 8.7.4.2.1 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 TDD UE.

## 8.7.4.2.2 Minimum Requirements

The accuracy requirements in table 8.7.4.2.1 are valid under the following condition:

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

Table 8.7.4.2.1: UTRA carrier RSSI inter frequency relative accuracy

		Accura	acy [dB]	Conditions
<u>Parameter</u>	<u>Unit</u>	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
UTRA carrier RSSI	<u>dBm</u>	<u>± 7</u>	<u>± 11</u>	<u>-9450</u>

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.4.

### 8.7.4.2.3 Test Purpose

The purpose of this test is to verify that the UTRA carrier RSSI measurement accuracy is within the specified limits.

### 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.

In this case both cells are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. UTRA carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.4.1.2.

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 8.7.4.1.2.

### 8.7.4.2.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message for Inter-frequency measurements.
- 2) UE shall transmit periodically the MEASUREMENT REPORT messages.
- 3) 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.
- 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 8.7.4.1.2 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 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 I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurements in clause 8.7.4.1.4.2 is used.

### 8.7.4.2.5 Test requirements

The UTRA carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.4.2.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) shall be added into the required accuracy defined in subclause 8.7.4.2.2 as shown in table 8.7.4.2.2.

Table 8.7.4.2.2: UTRA carrier RSSI relative accuracy

		Accura	acy [dB]	<b>Conditions</b>
<u>Parameter</u>	<u>Unit</u>	Normal condition	Extreme condition	<u>lo [dBm/3.84</u> <u>MHz]</u>
UTRA carrier RSSI	<u>dBm</u>	<u>-45.2</u>	<u>-7…8.2</u>	<u>-9487</u>
	<u>dBm</u>	<u>± 4</u>	<u>± 7</u>	<u>-8770</u>
	dBm	± 6	± 9	-7050

The normative reference for this requirement is TS 25.123 [2] clause A.9.1.4.

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

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# 8.7.4 UTRA carrier RSSI

**Void** 

## 8.7.4.1 Absolute measurement accuracy for 3.84 Mcps TDD Option

### 8.7.4.1.1 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 TDD UE.

### 8.7.4.1.2 Minimum Requirements

Table 8.7.4.1.1: UTRA carrier RSSI inter frequency absolute accuracy

		Accura	<b>Conditions</b>	
<u>Parameter</u>	<u>Unit</u>	Normal condition	Extreme condition	lo [dBm/ 3.84 MHz]
UTRA carrier RSSI	<u>dBm</u>	<u>± 4</u>	<u>± 7</u>	<u>-9470</u>
OTRA Carrier RSSI	<u>dBm</u>	<u>± 6</u>	<u>± 9</u>	<u>-7050</u>

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.4.

### 8.7.4.1.3 Test Purpose

The purpose of this test is to verify that the UTRA carrier RSSI measurement accuracy is within the specified limits.

### 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.

In this case both cells are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. UTRA carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.4.1.2.

Test 1 Test 2 Test 3 **Parameter Unit** Cell 1 Cell 2 Cell 1 Cell 2 Cell 1 Cell 2 DL timeslot number **UTRA RF Channel** Channel 1 Channel 2 Channel 1 Channel 2 Channel 1 Channel 2 PCCPCH Ec/lor dB dB SCH\_Ec/lor SCH toffset 0 5 5 0 0 OCNS Ec/lor dB -3.12 -3.12 -3.12 dBm / **-75.2 -75.2** <u>-54.1</u> -98.7 -97 loc <u>-57.8</u> 3.84 MHz Îor/loc dB 5 5 0 dBm / Io, Note 1 -69 -50 -94 3.84 MHz Propagation **AWGN AWGN AWGN** condition NOTE 1: lo levels have been calculated from other parameters for information purposes. They are not settable

Table 8.7.4.1.2: UTRA carrier RSSI inter frequency test parameters

parameters themselves.

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 the MEASUREMENT CONTROL message for inter frequency measurements.
- 2) UE shall transmit periodically the MEASUREMENT REPORT messages.
- 3) 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.
- 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 8.7.4.1.2 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 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 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 2) and 3) above are 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 I, with the following exceptions:

# MEASUREMENT CONTROL message for inter frequency measurement (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	T STORY TO THE STORY
UE information elements	+
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	NOT FESCH
-Measurement Identity	
-Measurement Command (10.3.7.46)	2 Setup
-Measurement Reporting Mode (10.3.7.49)	Setup
-Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-Additional measurements list (10.3.7.1) -CHOICE Measurement type	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	Inter-nequency measurement
-Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13)	
-ther-frequency measurement objects list (10.3.7.13) -CHOICE inter-frequency cell removal	Not present
-New inter-frequency cells	Cell 2 information is included
-New Inter-frequency cells -Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	NOUT TESETIL
-CHOICE reporting critera	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	Thirdly our critice.
-UTRA carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	INOL
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-Cell identity reporting indicator -CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Proposed TGSN Reporting required -Primary CCPCH RSCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	FALSE
-Pathloss reporting indicator -Reporting cell status (10.3.7.61)	FALSE
-Reporting cell status (10.3.7.61) -CHOICE reported cell	Report all active set cells + cells within
-CHOICE reponed cell	monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Maximum number of reported cells -Measurement validity (10.3.7.51)	Not present
-inter-frequency set update	Not present
-CHOICE report criteria (10.3.7.	Not present
-CHOICE report criteria (10.3.7Periodical reporting criteria (10.3.7.53)	
	Infinite
-Amount of reporting	Infinity 500 ms
-Reporting interval	500 ms
Physical channel information elements	10.00
-DPCH compressed mode status info (10.3.6.34)	Not Present

# 8.7.4.1.5 Test requirements

The UTRA carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.4.1.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) shall be added into the required accuracy defined in subclause 8.7.4.1.2 as shown in table 8.7.4.1.3.

Table 8.7.4.1.3: UTRA carrier RSSI absolute accuracy

		Accura	acy [dB]	<b>Conditions</b>
<u>Parameter</u>	<u>Unit</u>	Normal condition	Extreme condition	<u>lo [dBm/3.84</u> <u>MHz]</u>
	<u>dBm</u>	<u>-45.2</u>	<u>-78.2</u>	<u>-9487</u>
<b>UTRA carrier RSSI</b>	<u>dBm</u>	<u>± 4</u>	<u>± 7</u>	<u>-8770</u>
	<u>dBm</u>	<u>± 6</u>	<u>± 9</u>	<u>-7050</u>

The normative reference for this requirement is TS 25.123 [2] clause A.9.1.4.

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

## 8.7.4.1A Absolute measurement accuracy for 1.28 Mcps TDD Option

Void

# 8.7.4.2 Relative measurement accuracy for 3.84 Mcps TDD Option

### 8.7.4.2.1 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 TDD UE.

### 8.7.4.2.2 Minimum Requirements

The accuracy requirements in table 8.7.4.2.1 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 8.7.4.2.1: UTRA carrier RSSI inter frequency relative accuracy

		Accura	acy [dB]	<u>Conditions</u>
<u>Parameter</u>	<u>Unit</u>	Normal condition	Extreme condition	<u>lo [dBm/3.84</u> <u>MHz]</u>
UTRA carrier RSSI	<u>dBm</u>	<u>± 7</u>	<u>± 11</u>	<u>-9450</u>

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.4.

#### 8.7.4.2.3 Test Purpose

The purpose of this test is to verify that the UTRA carrier RSSI measurement accuracy is within the specified limits.

### 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.

In this case both cells are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. UTRA carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.4.1.2.

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 8.7.4.1.2.

### 8.7.4.2.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message for Inter-frequency measurements.
- 2) UE shall transmit periodically the MEASUREMENT REPORT messages.

- 3) 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.
- 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 8.7.4.1.2 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 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 I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurements in clause 8.7.4.1.4.2 is used.

## 8.7.4.2.5 Test requirements

The UTRA carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.4.2.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) shall be added into the required accuracy defined in subclause 8.7.4.2.2 as shown in table 8.7.4.2.2.

Table 8.7.4.2.2: UTRA carrier RSSI relative accuracy

		Accura	acy [dB]	<b>Conditions</b>
<u>Parameter</u>	<u>Unit</u>	Normal condition	Extreme condition	<u>lo [dBm/3.84</u> <u>MHz]</u>
	<u>dBm</u>	<u>-45.2</u>	<u>-78.2</u>	<u>-9487</u>
<b>UTRA carrier RSSI</b>	<u>dBm</u>	<u>± 4</u>	<u>± 7</u>	<u>-8770</u>
	<u>dBm</u>	<u>± 6</u>	<u>± 9</u>	<u>-7050</u>

The normative reference for this requirement is TS 25.123 [2] clause A.9.1.4.

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

### 8.7.4.2A Relative measurement accuracy for 1.28 Mcps TDD Option

Void

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

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# 8.7.8 SFN-SFN observed time difference

## 8.7.8.1 SFN-SFN observed time difference type 1

**Void** 

### 8.7.8.1.1 Measurement accuracy

# 8.7.8.1.1.1 Definition and applicability

This measurement is specified in clause 5.1.10 of TS 25.225 [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 TDD UE.

### 8.7.8.1.1.2 Minimum requirements

The accuracy requirement in table 8.7.8.1.1.1 is valid under the following conditions:

P-CCPCH RSCP1,2 ≥ -102 dBm..

$$\left| P - CCPCH RSCP1 \right|_{in \ dBm} - P - CCPCH RSCP2 \Big|_{in \ dBm} \right| \le 20dB$$

$$\left. \left( \frac{P - CCPCH _E_c}{I_o} \right) \right|_{in \ dB} \ge -8dB$$

$$\left. \left( \frac{SCH \_E_c}{I_o} \right) \right|_{in \ dB} \ge -13dB$$

where the received P-CCPCH Ec/Io is defined as,

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

and the received SCH Ec/Io is defined as,

$$\left(\frac{SCH\_E_c}{I_o}\right)_{in\ dB} = \left(\frac{SCH\_E_c}{I_{or}}\right)_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)}_{in\ dB}$$

and SCH\_Ec/Ior is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

Table 8.7.8.1.1.1: SFN-SFN observed time difference type 1 accuracy

<u>Parameter</u>	<u>Unit</u>	Accuracy [chip]	Conditions lo [dBm/3.84 MHz]
SFN-SFN observed time difference type 1	<u>chip</u>	<u>+/-0,5</u>	<u>-9450</u>

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.8 and A.9.1.8.

### 8.7.8.1.1.3 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 8.7.8.1.1.2.

#### 8.7.8.1.1.4 Method of test

### 8.7.8.1.1.4.1 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.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0...9830400 chip. The SFN-SFN observed time difference type 1 accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.8.1.1.2.

Table 8.7.8.1.1.2: SFN-SFN observed time difference type 1 intra frequency test parameters

Parameter	Unit	Tes	st 1	Te	st 2	Te	st 3	
<u>rarameter</u>	Onit	Cell 1	Cell 2	Cell 1	Cell 1 Cell 2		Cell 2	
DL timeslot number		0	2	<u>0</u>	2	<u>0</u>	2	
UTRA RF Channel number		Char	nel 1	Channel 1		Channel 1		
PCCPCH Ec/lor	<u>dB</u>	T.	<u>3</u>		<u>3</u>		<u>·3</u>	
SCH_Ec/lor	<u>dB</u>	7	<u>9</u>		<u>9</u>	<u>-9</u>		
SCH_t <sub>offset</sub>		0	<u>5</u>	<u>0</u> <u>5</u>		<u>0</u>	<u>5</u>	
OCNS Ec/lor	<u>dB</u>	<u>-3,</u>	<u>12</u>	<u>-3</u>	<u>,12</u>	<u>-3,12</u>		
loc	<u>dBm /</u> 3.84 MHz	<u>-75.2</u>	<u>-75.2</u>	<u>-57.8</u>	<u>-54.7</u>	<u>-98.7</u>	<u>-98.7</u>	
<u>Îor/loc</u>	<u>dB</u>	<u>5</u>	<u>5</u>	<u>7</u>	<u>3</u>	<u>3</u>	<u>3</u>	
lo, Note 1	<u>dBm /</u> 3.84 MHz	<u>-6</u>	<u>89</u>	<u>-50</u>		<u>-94</u>		
Propagation condition		AW	'GN	AW	<u>/GN</u>	AW	/GN	
	ve been calc		ther paramete	ers for informa	ation purposes	s. They are no	t settable	

parameters themselves.

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 8.7.8.1.1.2.

### 8.7.8.1.1.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check "SFN-SFN observed time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to the actually set 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 8.7.8.1.1.2 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 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.8.1.1.2 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 2) and 3) above are 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 I, with the following exceptions:

## MEASUREMENT CONTROL message (Step 1):

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)	Modify
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency 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)	Not Flesent
-Filter coefficient (10.3.7.9)	
-Filter coefficient (10.3.7.9) -CHOICE mode	<u>0</u>   TDD
-Measurement quantity list	100
	Drimon, CCDCH DCCD
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	T
-SFN-SFN observed time difference reporting indicator	Type 1
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH 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	Type 1
<ul> <li>Cell synchronisation information reporting indicator</li> </ul>	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode	<u>TDD</u>
-Timeslot ISCP reporting indicator	FALSE
<ul> <li>Proposed TGSN reporting required</li> </ul>	<u>FALSE</u>
<ul> <li>-Primary CCPCH RSCP reporting indicator</li> </ul>	TRUE
-Pathloss reporting indicator	<u>TRUE</u>
-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	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

## 8.7.8.1.1.5 Test requirements

The SFN-SFN observed time difference type 1 accuracy shall meet the requirements in clause 8.7.8.1.1.2.

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.

# 8.7.8.2 SFN-SFN observed time difference type 2

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# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

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# 8.7.8 SFN-SFN observed time difference

## 8.7.8.1 SFN-SFN observed time difference type 1

**Void** 

### 8.7.8.1.1 Measurement accuracy for 3.84 Mcps TDD Option

## 8.7.8.1.1.1 Definition and applicability

This measurement is specified in clause 5.1.10 of TS 25.225 [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 TDD UE.

### 8.7.8.1.1.2 Minimum requirements

The accuracy requirement in table 8.7.8.1.1.1 is valid under the following conditions:

P-CCPCH RSCP1,2 ≥ -102 dBm..

$$\left| P - CCPCH RSCP1 \right|_{in \ dBm} - P - CCPCH RSCP2 \Big|_{in \ dBm} \right| \le 20dB$$

$$\left. \left( \frac{P - CCPCH _{E_c}}{I_o} \right) \right|_{in \ dB} \ge -8dB$$

$$\left. \left( \frac{SCH \_E_c}{I_o} \right) \right|_{in \ dB} \ge -13dB$$

where the received P-CCPCH Ec/Io is defined as,

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

and the received SCH Ec/Io is defined as,

$$\left(\frac{SCH\_E_c}{I_o}\right)_{in\ dB} = \left(\frac{SCH\_E_c}{I_{or}}\right)_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)}_{in\ dB}$$

and SCH\_Ec/Ior is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

Table 8.7.8.1.1.1: SFN-SFN observed time difference type 1 accuracy

<u>Parameter</u>	<u>Unit</u>	Accuracy [chip]	Conditions lo [dBm/3.84 MHz]
SFN-SFN observed time difference type 1	<u>chip</u>	<u>+/-0,5</u>	<u>-9450</u>

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.8 and A.9.1.8.

### 8.7.8.1.1.3 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 8.7.8.1.1.2.

#### 8.7.8.1.1.4 Method of test

### 8.7.8.1.1.4.1 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.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0...9830400 chip. The SFN-SFN observed time difference type 1 accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.8.1.1.2.

Table 8.7.8.1.1.2: SFN-SFN observed time difference type 1 intra frequency test parameters

<u>Parameter</u>	Unit	Tes	st 1	Te	st 2	Test 3	
	<u>Omt</u>	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		<u>0</u>	2	<u>0</u>	2	<u>0</u>	2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH Ec/lor	<u>dB</u>	<u> </u>	<u>3</u>		<u>-3</u>		<u>-3</u>
SCH_Ec/lor	<u>dB</u>	<u>-9</u>		<u>-9</u>		<u>-9</u>	
SCH toffset		<u>0</u>	<u>5</u>	<u>0</u>	<u>5</u>	<u>0</u>	<u>5</u>
OCNS_Ec/lor	<u>dB</u>	<u>-3,12</u>		<u>-3,12</u>		<u>-3,12</u>	
loc	<u>dBm /</u> 3.84 MHz	<u>-75.2</u>	<u>-75.2</u>	<u>-57.8</u>	<u>-54.7</u>	<u>-98.7</u>	<u>-98.7</u>
<u>Îor/loc</u>	<u>dB</u>	<u>5</u>	<u>5</u>	<u>7</u>	<u>3</u>	<u>3</u>	<u>3</u>
lo, Note 1	<u>dBm /</u> 3.84 MHz	<u>-69</u> <u>-50</u> <u>-94</u>					94
Propagation condition		<u>AW</u>	GN	AWGN AWGN			/GN
NOTE 1: lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

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 8.7.8.1.1.2.

### 8.7.8.1.1.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check "SFN-SFN observed time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to the actually set 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 8.7.8.1.1.2 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 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.8.1.1.2 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 2) and 3) above are 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 I, with the following exceptions:

## MEASUREMENT CONTROL message (Step 1):

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)	Modify
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency 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)	Not Flesent
-Filter coefficient (10.3.7.9)	
-Filter coefficient (10.3.7.9) -CHOICE mode	<u>0</u>   TDD
-Measurement quantity list	100
	Drimon, CCDCH DCCD
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	T
-SFN-SFN observed time difference reporting indicator	Type 1
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH 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	Type 1
<ul> <li>Cell synchronisation information reporting indicator</li> </ul>	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode	<u>TDD</u>
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	<u>FALSE</u>
<ul> <li>-Primary CCPCH RSCP reporting indicator</li> </ul>	TRUE
-Pathloss reporting indicator	<u>TRUE</u>
-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	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

## 8.7.8.1.1.5 Test requirements

The SFN-SFN observed time difference type 1 accuracy shall meet the requirements in clause 8.7.8.1.1.2.

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.

8.7.8.1.1A Measurement accuracy for 1.28 Mcps TDD Option

Void

8.7.8.2 SFN-SFN observed time difference type 2

Void

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

CHANGE REQUEST											
ж	34.	122	CR	150	3	rev	-	¥	Current vers	sion:	3.10.0 <sup>#</sup>
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Other comments:	¥	-									

## 8.7.11 SFN-CFN observed time difference

**Void** 

# 8.7.11.1 <u>Intra frequency measurement requirement</u>

### 8.7.11.1.1 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 5.1.11 of TS 25.225 [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 TDD UE.

## 8.7.11.1.2 Minimum requirements

The accuracy requirement in table 8.7.11.1.1 is valid under the following conditions:

P-CCPCH RSCP1,2 ≥ -102 dBm..

$$\left| P - CCPCH RSCP1 \right|_{in \ dBm} - P - CCPCH RSCP2 \right|_{in \ dBm} \le 20 dB$$

$$\left(\frac{P - CCPCH _E_c}{I_o}\right)_{in \ dB} \ge -8dB$$

$$\left(\frac{SCH _{E_c}}{I_o}\right)_{in\ dB} \ge -13dB$$

where the received P-CCPCH Ec/Io is defined as,

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

and the received SCH Ec/Io is defined as,

$$\left(\frac{SCH\_E_c}{I_o}\right)_{in\ dB} = \left(\frac{SCH\_E_c}{I_{or}}\right)_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}}$$

and SCH Ec/Ior is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

<u>Table 8.7.11.1: SFN-CFN observed time difference accuracy for an intra frequency UTRA TDD neighbour cell</u>

Parameter	Unit	Accuracy [chip]	Conditions		
<u>rarameter</u>	<u>Unit</u>	Accuracy [Clip]	lo [dBm/3.84 MHz]		
SFN-CFN observed time difference	<u>chip</u>	<u>+/-0,5</u>	<u>-9450</u>		

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.11 and A.9.1.10.

### 8.7.11.1.3 Test Purpose

The purpose of this test is to verify that the measurement accuracy of SFN-CFN observed time difference is within the limit specified in clause 8.7.11.1.2.

### 8.7.11.1.4 Method of test

### 8.7.11.1.4.1 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.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0...255 frames. The SFN-CFN observed time difference accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.11.1.2.

Table 8.7.11.1.2: SFN-CFN observed time difference intra frequency test parameters

Parameter	Heit	Tes	st 1	Te	st 2	Te	st 3
<u>rafameter</u>	<u>Unit</u>	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		<u>0</u>	<u>2</u>	<u>0</u>	<u>2</u>	<u>0</u>	<u>2</u>
UTRA RF Channel		Chan	inal 1	Channal 1		Channel 1	
<u>number</u>		Cital	<u>irrer r</u>	Channel 1		<u>Channel 1</u>	
PCCPCH_Ec/lor	<u>dB</u>		<u>3</u>		-3		<u>3</u>
SCH_Ec/lor	<u>dB</u>	<u>=</u>	9	-9		<u>-9</u>	
SCH_t <sub>offset</sub>		<u>0</u>	<u>5</u>	<u>0</u>	<u>5</u>	<u>0</u>	<u>5</u>
OCNS_Ec/lor	<u>dB</u>	-3,12		<u>-3,12</u>		<u>-3,12</u>	
loc	<u>dBm /</u> 3.84 MHz	<u>-75.2</u>	<u>-75.2</u>	<u>-57.8</u>	<u>-54.7</u>	<u>-98.7</u>	<u>-98.7</u>
<u>Îor/loc</u>	<u>dB</u>	<u>5</u>	<u>5</u>	<u>7</u>	<u>3</u>	<u>3</u>	<u>3</u>
lo, Note 1	<u>dBm /</u> 3.84 MHz	<u>-6</u>	<u>69</u>	<u>-50</u>		<u>-94</u>	
Propagation condition		<u>AW</u>	GN	<u>AWGN</u>		<u>AWGN</u>	
NOTE 1: lo levels have been calculated from other parameters for information purposes. They are not settable							

parameters themselves.

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 8.7.11.1.2.

#### 8.7.11.1.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 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 5.1.11 of TS 25.225 [22]. This value shall be compared to the actually set 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 8.7.11.1.2 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 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.1.2 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 2) and 3) above are 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 I, with the following exceptions:

## MEASUREMENT CONTROL message (Step 1):

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)	Modify
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	intra-frequency measurement
-Intra-frequency measurement (10.3.7.30) -Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	Not Flesent
-Filter coefficient (10.3.7.9)	
-Filter coefficient (10.3.7.9) -CHOICE mode	<u>0</u>   TDD
-Measurement quantity list	100
	Drimon, CCDCH DCCD
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	N. C. C.
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH 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
-Cell Identity reporting indicator	TRUE
-CHOICE mode	<u>TDD</u>
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	<u>FALSE</u>
-Primary CCPCH 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	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

### 8.7.11.1.5 Test requirements

The SFN-CFN observed time difference accuracy shall meet the requirements in clause 8.7.11.1.2.

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.

## 8.7.11.2 Inter frequency measurement requirement

## 8.7.11.2.1 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 UTRA TDD neighbour cell that is in a different frequency. This measurement is specified in clause 5.1.11 of TS 25.225 [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 TDD UE.

### 8.7.11.2.2 Minimum requirements

The accuracy requirement in table 8.7.11.2.1 is valid under the following conditions:

P-CCPCH\_RSCP1,2 ≥ -102 dBm..

$$\left| P - CCPCH RSCP1 \right|_{in \ dBm} - P - CCPCH RSCP2 \Big|_{in \ dBm} \right| \le 20 dB$$

$$\left. \left( \frac{P - CCPCH _{E_c}}{I_o} \right) \right|_{in \ dB} \ge -8dB$$

$$\left. \left( \frac{SCH \_E_c}{I_o} \right) \right|_{in \ dB} \ge -13dB$$

where the received P-CCPCH Ec/Io is defined as,

$$\left. \left( \frac{P - CCPCH _{-}E_{c}}{I_{o}} \right) \right|_{in \ dB} = \left( \frac{P - CCPCH _{-}E_{c}}{I_{or}} \right) \right|_{in \ dB} - \frac{I_{o}}{\left( \hat{I}_{or} \right) } \right|_{in \ dB}$$

and the received SCH Ec/Io is defined as,

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

and SCH Ec/Ior is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

<u>Table 8.7.11.2.1: SFN-CFN observed time difference accuracy for an inter frequency UTRA TDD neighbour cell</u>

Parameter	Unit	Accuracy [chip] Conditions		
<u>r arameter</u>	<u>Unit</u>	Accuracy [CIIID]	<u>lo [dBm/3.84 MHz]</u>	
SFN-CFN observed time difference	<u>chip</u>	<u>+/-0,5</u>	<u>-9450</u>	

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.11 and A.9.1.10.

### 8.7.11.2.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-CFN observed time difference is within the limit specified in clause 8.7.11.2.2.

### 8.7.11.2.4 Method of test

### 8.7.11.2.4.1 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.

In this case, UTRA TDD cell 1 and UTRA TDD cell 2 are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0...256 frames. The SFN-CFN observed time difference accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.11.2.2.

Table 8.7.11.2.2: SFN-CFN observed time difference inter frequency test parameters

Doromotor	Unit	Tes	st 1	Tes	st 2	Te	st 3	
<u>Parameter</u>	<u>Unit</u>	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
DL timeslot number		<u>0</u>	2	<u>0</u>	2	<u>0</u>	2	
UTRA RF Channel		Channal 1	Channal 2	Channal 1	Channal 2	Channal 1	Channal 2	
<u>number</u>		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2	
PCCPCH Ec/lor	<u>dB</u>	T.	<u>3</u>	-	<u>-3</u>		<u>-3</u>	
SCH_Ec/lor	<u>dB</u>	-	<u>9</u>	-	<u>-9</u>		<u>-9</u>	
SCH_t <sub>offset</sub>		<u>0</u>	<u>5</u>	<u>0</u>	<u>5</u>	<u>0</u>	<u>5</u>	
OCNS_Ec/lor	<u>dB</u>	-3,12		<u>-3,12</u>		<u>-3,12</u>		
loc	<u>dBm /</u> 3.84 MHz	<u>-75.2</u>	<u>-75.2</u>	<u>-57.8</u>	<u>-54.7</u>	<u>-98.7</u>	<u>-98.7</u>	
<u>Îor/loc</u>	<u>dB</u>	<u>5</u>	<u>5</u>	<u>7</u>	<u>3</u>	<u>3</u>	<u>3</u>	
lo, Note 1	<u>dBm /</u> 3.84 MHz	<u>-6</u>	<u>89</u>	<u>-50</u>		<u>-94</u>		
Propagation condition		AW	'GN	<u>AWGN</u>		<u>AWGN</u>		
NOTE 1: lo levels have been calculated from other parameters for information purposes. They are not settable								
parameters themselves.								

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 8.7.11.2.2.

### 8.7.11.2.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 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 5.1.11 of TS 25.225 [22]. This value shall be compared to the actually set 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 8.7.11.2.2 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 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.2.2 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 2) and 3) above are 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 I, with the following exceptions:

### MEASUREMENT CONTROL message for inter frequency measurements (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	<u>varao/remark</u>
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	HOLLIOONE
-Measurement Identity	2
-Measurement Command (10.3.7.46)	2 Setup
-Measurement Reporting Mode (10.3.7.49)	<u> </u>
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE inter-frequency cell removal	Not present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE reporting critera	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	<u>TDD</u>
<ul> <li>-Measurement quantity for frequency quality estimate</li> </ul>	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
<u>-UTRA carrier RSSI</u>	<u>FALSE</u>
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	<u>TRUE</u>
-Cell identity reporting indicator	TRUE
-CHOICE mode	<u>TDD</u>
-Timeslot ISCP reporting indicator	<u>FALSE</u>
-Proposed TGSN Reporting required	<u>FALSE</u>
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	<u>FALSE</u>
-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>Virtual/active set cells + 2</u>
-Measurement validity (10.3.7.51)	Not present
-Inter-frequency set update	Not present
-CHOICE report criteria (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	In finite.
-Amount of reporting	Infinity
-Reporting interval	<u>500 ms</u>
Physical channel information elements	Not Present
-DPCH compressed mode status info (10.3.6.34)	Not Present

## 8.7.11.2.5 Test requirements

The SFN-CFN observed time difference accuracy shall meet the requirements in clause 8.7.11.2.2.

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.

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

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Other comments:	ж	-										

# 8.7.11 SFN-CFN observed time difference

Void

# 8.7.11.1 Intra frequency measurement requirement for 3.84 Mcps option

### 8.7.11.1.1 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 5.1.11 of TS 25.225 [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 TDD UE.

# 8.7.11.1.2 Minimum requirements

The accuracy requirement in table 8.7.11.1.1 is valid under the following conditions:

P-CCPCH RSCP1,2 ≥ -102 dBm..

$$\left| P - CCPCH RSCP1 \right|_{in \ dBm} - P - CCPCH RSCP2 \Big|_{in \ dBm} \right| \le 20 dB$$

$$\left. \left( \frac{P - CCPCH _E_c}{I_o} \right) \right|_{in \ dB} \ge -8dB$$

$$\left(\frac{SCH _E_c}{I_o}\right)_{in\ dB} \ge -13dB$$

where the received P-CCPCH Ec/Io is defined as,

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

and the received SCH Ec/Io is defined as,

$$\left(\frac{SCH\_E_c}{I_o}\right)_{in\ dB} = \left(\frac{SCH\_E_c}{I_{or}}\right)_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}}$$

and SCH Ec/Ior is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

<u>Table 8.7.11.1: SFN-CFN observed time difference accuracy for an intra frequency UTRA TDD neighbour cell</u>

Parameter	Unit Accuracy [chip]		Conditions
<u>rarameter</u>	<u>Unit</u>	Accuracy [CIIID]	lo [dBm/3.84 MHz]
SFN-CFN observed time difference	<u>chip</u>	<u>+/-0,5</u>	<u>-9450</u>

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.11 and A.9.1.10.

### 8.7.11.1.3 Test Purpose

The purpose of this test is to verify that the measurement accuracy of SFN-CFN observed time difference is within the limit specified in clause 8.7.11.1.2.

### 8.7.11.1.4 Method of test

### 8.7.11.1.4.1 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.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0...255 frames. The SFN-CFN observed time difference accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.11.1.2.

Table 8.7.11.1.2: SFN-CFN observed time difference intra frequency test parameters

Parameter	Unit	Test 1		Tes	st 2	Test 3	
<u>Parameter</u>	<u>Unit</u>	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		<u>0</u>	<u>2</u>	<u>0</u>	<u>2</u>	<u>0</u>	<u>2</u>
UTRA RF Channel		Chan	nol 1	Char	nnel 1	Char	nnel 1
<u>number</u>		Cilai	iller i	Cital	iiiei i	Cital	iiiei i
PCCPCH_Ec/lor	<u>dB</u>	<u> </u>	<u>3</u>	_	<u>3</u>		<u>3</u>
SCH_Ec/lor	<u>dB</u>	-9		<u>-9</u>		<u>-9</u>	
SCH_t <sub>offset</sub>		<u>0</u>	<u>5</u>	<u>0</u>	<u>5</u>	<u>0</u>	<u>5</u>
OCNS_Ec/lor	<u>dB</u>	<u>-3,</u>	<u>12</u>	<u>-3,12</u>		<u>-3,12</u>	
loc	<u>dBm /</u> 3.84 MHz	<u>-75.2</u>	<u>-75.2</u>	<u>-57.8</u>	<u>-54.7</u>	<u>-98.7</u>	<u>-98.7</u>
<u>Îor/loc</u>	<u>dB</u>	<u>5</u>	<u>5</u>	<u>7</u>	<u>3</u>	<u>3</u>	<u>3</u>
lo, Note 1	<u>dBm /</u> 3.84 MHz	<u>-69</u>		<u>-50</u>		<u>-94</u>	
Propagation condition		<u>AW</u>	<u>GN</u>	<u>AWGN</u>		<u>AWGN</u>	
NOTE 1: lo levels have been calculated from other parameters for information purposes. They are not settable							

parameters themselves.

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 8.7.11.1.2.

#### 8.7.11.1.4.2 Procedure

- 1) SS shall transmit the MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 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 5.1.11 of TS 25.225 [22]. This value shall be compared to the actually set 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 8.7.11.1.2 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 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.1.2 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 2) and 3) above are 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 I, with the following exceptions:

# MEASUREMENT CONTROL message (Step 1):

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)	Modify
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	intra-frequency measurement
-Intra-frequency measurement (10.3.7.30) -Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	Not Flesent
-Filter coefficient (10.3.7.9)	
-CHOICE mode	<u>0</u> TDD
-Measurement quantity list	100
	Drimon, CCDCH DCCD
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	N
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH 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
-Cell Identity reporting indicator	<u>TRUE</u>
-CHOICE mode	<u>TDD</u>
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	<u>FALSE</u>
-Primary CCPCH 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	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

### 8.7.11.1.5 Test requirements

The SFN-CFN observed time difference accuracy shall meet the requirements in clause 8.7.11.1.2.

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.

# 8.7.11.1A Intra frequency measurement requirement for 1.28 Mcps option

Void

### 8.7.11.2 Inter frequency measurement requirement for 3.84 Mcps option

# 8.7.11.2.1 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 UTRA TDD neighbour cell that is in a different frequency. This measurement is specified in clause 5.1.11 of TS 25.225 [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 TDD UE.

### 8.7.11.2.2 Minimum requirements

The accuracy requirement in table 8.7.11.2.1 is valid under the following conditions:

P-CCPCH\_RSCP1,2 ≥ -102 dBm..

$$\left| P - CCPCH RSCP1 \right|_{in \ dBm} - P - CCPCH RSCP2 \right|_{in \ dBm} \le 20 dB$$

$$\left. \left( \frac{P - CCPCH _{-}E_{c}}{I_{o}} \right) \right|_{in \ dB} \ge -8dB$$

$$\left. \left( \frac{SCH _E_c}{I_o} \right) \right|_{in \ dB} \ge -13dB$$

where the received P-CCPCH Ec/Io is defined as,

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

and the received SCH Ec/Io is defined as,

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

and SCH\_Ec/Ior is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

<u>Table 8.7.11.2.1: SFN-CFN observed time difference accuracy for an inter frequency UTRA TDD</u>

neighbour cell

Parameter	Unit Accuracy [chip]		<u>Conditions</u>
<u>r arameter</u>	<u> </u>	Accuracy [criip]	<u>lo [dBm/3.84 MHz]</u>
SFN-CFN observed time difference	<u>chip</u>	<u>+/-0,5</u>	<u>-9450</u>

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.11 and A.9.1.10.

# 8.7.11.<u>2.3 Test purpose</u>

The purpose of this test is to verify that the measurement accuracy of SFN-CFN observed time difference is within the limit specified in clause 8.7.11.2.2.

### 8.7.11.2.4 Method of test

### 8.7.11.2.4.1 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.

In this case, UTRA TDD cell 1 and UTRA TDD cell 2 are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0...256 frames. The SFN-CFN observed time difference accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.11.2.2.

Table 8.7.11.2.2: SFN-CFN observed time difference inter frequency test parameters

Doromotor	Unit	Tes	st 1	Tes	st 2	Te	st 3
<u>Parameter</u>	<u>Unit</u>	<u>Cell 1</u>	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		<u>0</u>	<u>2</u>	<u>0</u>	<u>2</u>	<u>0</u>	<u>2</u>
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/lor	<u>dB</u>	T.	<u>3</u>	=	<u>3</u>		<u>·3</u>
SCH_Ec/lor	<u>dB</u>	<u>-9</u>		<u>-9</u>		<u>-9</u>	
SCH_t <sub>offset</sub>		<u>0</u>	<u>5</u>	<u>0</u>	<u>5</u>	<u>0</u>	<u>5</u>
OCNS_Ec/lor	<u>dB</u>	-3,12		<u>-3,12</u>		<u>-3,12</u>	
loc	<u>dBm /</u> 3.84 MHz	<u>-75.2</u>	<u>-75.2</u>	<u>-57.8</u>	<u>-54.7</u>	<u>-98.7</u>	<u>-98.7</u>
<u>Îor/loc</u>	<u>dB</u>	<u>5</u>	<u>5</u>	<u>7</u>	<u>3</u>	<u>3</u>	<u>3</u>
lo, Note 1	<u>dBm /</u> 3.84 MHz	<u>-69</u> <u>-50</u> <u>-94</u>					<u>94</u>
Propagation condition		AW	'GN	<u>AWGN</u>		<u>AWGN</u>	
NOTE 1: lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

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

#### 8.7.11.2.4.2 Procedure

1) SS shall transmit the MEASUREMENT CONTROL message.

for Test 1 are set up according to table 8.7.11.2.2.

- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 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 5.1.11 of TS 25.225 [22]. This value shall be

<u>compared to the actually set SFN-CFN observed time difference value for each MEASUREMENT REPORT message.</u>

- 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 8.7.11.2.2 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 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.2.2 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 2) and 3) above are 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 I, with the following exceptions:

# MEASUREMENT CONTROL message for inter frequency measurements (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	varas/rtomark
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	Not i lesent
-Measurement Identity	2
-Measurement Command (10.3.7.46)	2 Setup
-Measurement Reporting Mode (10.3.7.49)	Setup
-Measurement Reporting Mode (10.3.7.43)  -Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-Additional measurement sist (10.3.7.1) -CHOICE Measurement type	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	inter-frequency measurement
-Inter-frequency measurement objects list (10.3.7.13)	Not present
-CHOICE inter-frequency cell removal	Not present Cell 2 information is included
-New inter-frequency cells -Cell for measurement	Not Present
-Cell for measurement -Inter-frequency measurement quantity (10.3.7.18)	INOU FIESEIIL
-CHOICE reporting critera	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-Filter Coefficient (10.3.7.9) -CHOICE mode	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
	Fillidly CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21) -UTRA carrier RSSI	FALCE
	FALSE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	N
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE
-Cell identity reporting indicator	TRUE
-CHOICE mode	<u>TDD</u>
-Timeslot ISCP reporting indicator	<u>FALSE</u>
-Proposed TGSN Reporting required	<u>FALSE</u>
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	<u>FALSE</u>
-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>Virtual/active set cells + 2</u>
-Measurement validity (10.3.7.51)	Not present
-Inter-frequency set update	Not present
-CHOICE report criteria (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	<u>Infinity</u>
-Reporting interval	<u>500 ms</u>
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

# 8.7.11.2.5 Test requirements

The SFN-CFN observed time difference accuracy shall meet the requirements in clause 8.7.11.2.2.

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.

# 8.7.11.2A Inter frequency measurement requirement for 1.28 Mcps option

Void

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA 10<sup>th</sup>-14<sup>th</sup> February 2003

		CHANGE	REQU	JEST		CR-Form-v7
<sup></sup> TS 3	4.122 CR	152	жrev	<b>-</b> # (	Current versi	ion: 3.10.0 <sup>#</sup>
For <u>HELP</u> on using	g this form, se	ee bottom of this	page or lo	ok at the	pop-up text	over the X symbols.
Proposed change affe	ects: UICC	apps <b>ж</b>	ME <mark>X</mark> I	Radio Ac	cess Networ	k Core Network
Title: 第 A	ddition of TD	D-GSM handove	er case for	UTRA TE	DD	
Source: # T	1-RF					
Work item code: ₩					<i>Date:</i> ∺	17/01/2003
De	e <u>one</u> of the fo.  F (correction A (correspo. B (addition of C (functional of	nds to a correction of feature), I modification of fe modification) ions of the above	n in an earlie eature)	er release)	2 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) (Release 6)
Reason for change:	f Test Case	for TDD-GSM I	handover is	s missing	from the cui	rrent version of 34 122
Summary of change:	€ Addition o		TDD-GSM	handove		
not approved:						
	X Tes	er core specifica t specifications A Specifications		₩		
Other comments:	#					

# How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked \( \mathbb{H} \) 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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 Inter-system Handover from UTRAN TDD to GSM

Void.

# 8.3.3.1 Definition and applicability

The UTRAN to GSM cell handover interruption time 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 TDD (3.84 Mcps option) and GSM UE.

# 8.3.3.2 Minimum requirement

The interruption time shall be less than 40 ms in the case where the UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.3.2 and A.5.3.

# 8.3.3.3 Test purpose

To verify that the UE meets the minimum requirement.

# 8.3.3.4 Method of test

### 8.3.3.4.1 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.

[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 8.3.3.1, 8.3.3.2 and 8.3.3.3 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 message with activation time at beginning of T3 with one active cell, cell 2. The HANDOVER FROM UTRAN COMMAND message shall be sent to the UE such that the delay between the last the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [9]. In the GSM Handover command contained in this message, IE starting time shall not be included.

Cell 1 is a UTRA TDD cell and cell 2 is a GSM cell. The Beacon timeslot shall be transmitted in timeslot 0 for cell 1 and no second Beacon timeslot shall be provided for cell 1. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3.

Table 8.3.3.1: General test parameters for TDD/GSM handover

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	Comment
DCH parameters		DL Reference Measurement Channel	As specified in TS 25.102 section A.2.2
		<u>12.2 kbps</u>	
Power Control		<u>On</u>	
Target quality value	BLER	<u>0.01</u>	
on DTCH			
Initial conditions	Active cell	<u>Cell 1</u>	UTRA TDD cell
	<u>Neighbour</u>	Cell 2	GSM cell
	<u>cell</u>		
Final condition	Active cell	<u>Cell 2</u>	GSM cell
Inter-RAT		GSM carrier RSSI	
measurement			
<u>quantity</u>			
BSIC verification		<u>Required</u>	
<u>required</u>			
Threshold other	<u>dBm</u>	<u>-80</u>	Absolute GSM carrier RSSI threshold
<u>system</u>			for Event 3C.
<u>Hysteresis</u>	<u>dB</u>	<u>0</u>	
Time to Trigger	<u>ms</u>	<u>0</u>	
Filter coefficient		<u>0</u>	
Monitored cell list		12 TDD neighbours on Channel 1	Measurement control information is
<u>size</u>		6 GSM neighbours including ARFCN 1	sent before the start of time period T1.
Tidentify abort	<u>s</u>	<u>5</u>	
Treconfirm abort	<u>s</u>	<u>5</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>	

Table 8.3.3.2: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 1)

<u>Parameter</u>	Unit	<u>Cell 1</u>						
DL timeslot number		0			1			
		<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	
UTRA RF Channel Number		Channel 1						
PCCPCH Ec/lor	<u>dB</u>		<u>-3</u>			n.a.		
SCH_Ec/lor	<u>dB</u>		<u>-9</u>			<u>n.a.</u>		
SCH_t <sub>offset</sub>	<u>dB</u>		<u>0</u>			n.a.		
DPCH Ec/lor	<u>dB</u>	<u>n.a.</u>			No	<u>te 1</u>	n.a.	
OCNS Ec/lor	<u>dB</u>		<u>-3,12</u>		No	<u>te 2</u>	<u>n.a.</u>	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>6</u>		<u>6</u>			
PCCPCH RSCP	<u>dBm</u>		<u>-68</u>			n.a.		
$I_{oc}$	<u>dBm/</u> 3,84 <u>MHz</u>	<u>-70</u>						
Propagation Condition	pagation 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 lor.								

Table 8.3.3.3: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2		
<u>Farameter</u>	OIIIL	<u>T1</u>	T2, T3	
Absolute RF Channel Number		ARFO	N 1	
RXLEV	<u>dBm</u>	<u>-85</u>	<u>-75</u>	

### 8.3.3.4.2 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 10 seconds, the SS shall switch the power settings from T1 to T2
- 7) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C
- 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 10 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 10 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)	<u>value/Nemark</u>
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	Not resent
-Measurement Identity	Δ
-Measurement Command (10.3.7.46)	4 Setup
-Measurement Reporting Mode (10.3.7.49)	<u> </u>
-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	<u>0</u>
-CHOICE mode	<u>0</u> TDD
-Measurement quantity list	<u>1</u>
-Measurement quantity	Primary CCPCH RSCP
-CHOICE system	<u>GSM</u>
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	<u>0</u>
-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	$\frac{2}{1}$
-CHOICE report criteria	Inter-RAT measurement reporting criteria
-Inter-RAT measurement reporting criteria (10.3.7.30)	
-Parameters required for each event	1 5
-Inter-RAT event identity (10.3.7.24)	Event 3C
-Threshold own system	Not Present
Three hold other customs	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB 0 ms
-Time to trigger  Penarting cell status (10.3.7.61)	
-Reporting cell status (10.3.7.61) Physical channel information elements	Not Present
	Not Proport
-DPCH compressed mode status info (10.3.6.34)	Not Present

### HANDOVER FROM UTRAN COMMAND message (step 8):

Information Element	<u>Value/remark</u>
Message Type	
<u>UE information elements</u>	
-RRC transaction identifier	<u>0</u>
-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	<u>GSM</u>
-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 (step 7)

Information Element	<u>Value/remark</u>
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	<u>1</u>
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-RAT Measured results list
-Inter-RAT-frequency measured results (10.3.7.26)	<u>1</u>
-CHOICE System	GSM
-Measured GSM cells	<u>1</u>
-GSM Carrier RSSI	Checked that this IE is present
-CHOICE BSIC	Verified BSIC
-inter-RAT cell id	Checked that this IE is present
-Observed Time difference to GSM cell	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-RAT measurement event results
-Inter-RAT event identity	<u>3C</u>
-Cells to report	1
-CHOICE BSIC	<u>Verified BSIC</u>
<u>-inter-RAT cell id</u>	Checked that this IE is present

# 8.3.3.5 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 #18 San Antonio, Texas, USA 10<sup>th</sup>-14<sup>th</sup> February 2003

CHANGE REQUEST	CR-Form-v7
* TS 34.122 CR 153	<b>0</b> *
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: UICC apps# ME X Radio Access Network Core	Network
Title:	
Title:	
Source: # T1-RF	
Work item code: 第 Date: 第 17/01/200	3
Category: # A Release: # Rel-4	
Use <u>one</u> of the following categories:  Use <u>one</u> of the following  F (correction)  2 (GSM Phase	2)
<b>B</b> (addition of feature), R97 (Release 199	97)
C (functional modification of feature) R98 (Release 1995) D (editorial modification) R99 (Release 1995)	,
Detailed explanations of the above categories can Rel-4 (Release 4) be found in 3GPP TR 21.900. Rel-5 (Release 5)	
Rel-6 (Release 6)	
Reason for change: # Test Case for TDD-GSM handover is missing from the current version	of 34.122
Summary of change:   Addition of Test Case for TDD-GSM handover	
Consequences if # 34.122 will be inconsistent with 25.123	
not approved:	
Clauses affected:	
YN	
Other specs # X Other core specifications # Test specifications	
O&M Specifications	
Other comments: #	

# How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked \( \mathcal{H} \) 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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 Inter-system Handover from UTRAN TDD to GSM

Void.

# 8.3.3.1 Definition and applicability

8.3.3.1.1 3,84 Mcps option

The UTRAN to GSM cell handover interruption time 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 TDD (3,84 Mcps option) and GSM UE.

8.3.3.1.2 1,28 Mcps option

Void.

8.3.3.2 Minimum requirement

8.3.3.2.1 3,84 Mcps option

The interruption time shall be less than 40 ms in the case where the UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.3.2 and A.5.3.

8.3.3.2.2 1,28 Mcps option

Void.

8.3.3.3 Test purpose

8.3.3.3.1 3,84 Mcps option

To verify that the UE meets the minimum requirement.

8.3.3.3.2 1,28 Mcps option

Void.

8.3.3.4 Method of test

8.3.3.4.1 3,84 Mcps option

8.3.3.4.1.1 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 8.3.3.1, 8.3.3.2 and 8.3.3.3 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 message with activation time at beginning of T3 with one active cell, cell 2. The HANDOVER FROM UTRAN COMMAND message shall be sent to the UE such that the delay between the last the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [9]. In the GSM Handover command contained in this message, IE starting time shall not be included.

Cell 1 is a UTRA TDD cell and cell 2 is a GSM cell. The Beacon timeslot shall be transmitted in timeslot 0 for cell 1 and no second Beacon timeslot shall be provided for cell 1. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3.

Table 8.3.3.1: General test parameters for TDD/GSM handover

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	Comment
DCH parameters		DL Reference Measurement Channel	As specified in TS 25.102 section A.2.2
•		<u>12.2 kbps</u>	
Power Control		<u>On</u>	
Target quality value	BLER	<u>0.01</u>	
on DTCH			
Initial conditions	Active cell	<u>Cell 1</u>	UTRA TDD cell
	<u>Neighbour</u>	Cell 2	GSM cell
	cell		
Final condition	Active cell	Cell 2	GSM cell
Inter-RAT		GSM carrier RSSI	
measurement			
<u>quantity</u>			
BSIC verification		Required	
<u>required</u>			
Threshold other	<u>dBm</u>	<u>-80</u>	Absolute GSM carrier RSSI threshold
<u>system</u>			for Event 3C.
<u>Hysteresis</u>	<u>dB</u>	<u>0</u>	
Time to Trigger	<u>ms</u>	<u>0</u>	
Filter coefficient		<u>0</u>	
Monitored cell list		12 TDD neighbours on Channel 1	Measurement control information is
<u>size</u>		6 GSM neighbours including ARFCN 1	sent before the start of time period T1.
Tidentify abort	<u>s</u>	<u>5</u>	
Treconfirm abort	<u>s</u>	<u>5</u>	
<u>T1</u>	<u>s</u>	<u>10</u>	
<u>T2</u>	<u>s</u>	<u>10</u>	
T3	S	10	

Table 8.3.3.2: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 1)

Parameter	<u>Unit</u>	Cell 1							
DL timeslot number			<u>0</u>		1				
		<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>		
UTRA RF Channel Number		Channel 1							
PCCPCH Ec/lor	<u>dB</u>		<u>-3</u>			n.a.			
SCH_Ec/lor	<u>dB</u>		<u>-9</u>			<u>n.a.</u>			
SCH_t <sub>offset</sub>	<u>dB</u>		<u>0</u>			<u>n.a.</u>			
DPCH_Ec/lor	<u>dB</u>		<u>n.a.</u>		No	n.a.			
OCNS_Ec/lor	<u>dB</u>		<u>-3,12</u>		No	n.a.			
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>6</u> <u>6</u>							
PCCPCH RSCP	<u>dBm</u>	<u>-68</u> <u>n.a.</u>							
$I_{oc}$	dBm/ 3,84 MHz	<u>-70</u>							
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 lor.									

Table 8.3.3.3: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 2)

Parameter	Unit	<u>Cell</u>	ell 2			
<u>rarameter</u>	OIIIL	<u>T1</u>	T2, T3			
Absolute RF Channel		ADECNIA				
Number		ARFCN 1				
RXLEV	<u>dBm</u>	<u>-85</u>	<u>-75</u>			

### 8.3.3.4.1.2 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 10 seconds, the SS shall switch the power settings from T1 to T2
- 7) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C
- 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 10 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 10 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)	<u> varao/remark</u>
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	HOLLIOGIN
-Measurement Identity	4
-Measurement Command (10.3.7.46)	4 Setup
-Measurement Reporting Mode (10.3.7.49)	<u> </u>
-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 TDD
-CHOICE mode	<u>TDD</u>
-Measurement quantity list	<u>1</u>
-Measurement quantity	Primary CCPCH RSCP
-CHOICE system	<u>GSM</u>
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	<u>0</u>
-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 5
-Inter-RAT event identity (10.3.7.24)	Event 3C
-Threshold own system	Not Present
The second state of the second second	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	Not Present
Physical channel information elements  DBCH compressed made status info (10.2.6.24)	Not Present
-DPCH compressed mode status info (10.3.6.34)	Not Present

# HANDOVER FROM UTRAN COMMAND message (step 8):

Information Element	<u>Value/remark</u>
Message Type	
<u>UE information elements</u>	
-RRC transaction identifier	<u>0</u>
-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	<u>GSM</u>
-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 (step 7)

Information Element	<u>Value/remark</u>
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	<u>1</u>
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-RAT Measured results list
-Inter-RAT-frequency measured results (10.3.7.26)	1
-CHOICE System	<u>GSM</u>
-Measured GSM cells	<u>1</u>
-GSM Carrier RSSI	Checked that this IE is present
-CHOICE BSIC	<u>Verified BSIC</u>
-inter-RAT cell id	Checked that this IE is present
-Observed Time difference to GSM cell	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-RAT measurement event results
-Inter-RAT event identity	<u>3C</u>
-Cells to report	1
-CHOICE BSIC	<u>Verified BSIC</u>
<u>-inter-RAT cell id</u>	Checked that this IE is present

# 8.3.3.4.2 1,28 Mcps option

Void.

# 8.3.3.5 Test requirements

# 8.3.3.5.1 3,84 Mcps option

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.

8.3.3.5.2 1,28 Mcps option

Void.

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

Tdoc # T1-030165

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### Reason for change: \$\mathbb{H}\$ 1.) It is not clear in the procedure what should happen in the event of an error

be found in 3GPP TR 21.900.

2.) The RRC procedure delay of system information blocks defined in 25.331 is not accounted for in 25.123 or in 34.122.

Rel-5

Rel-6

(Release 5)

(Release 6)

- 3.) Periodical Location Updating timer and periodical Routing Area Updating timer is set up in the generic set-up procedure described in TS 34.108 subclause 7.4.2. Hence the UE may perform a Location Updating or Routing Area Updating procedure that is not expected in test procedure since UE is in CELL\_PCH/URA\_UPDATE states, and so the test procedure is not executed correctly. Periodical cell update/ura update procedures are also initiated in CELL\_PCH/URA\_PCH states according to T305.
- 4) The beginning of time period T1 isn't clear in "Procedure".
- 5)It is not clear how random access procedure is terminated in test procedure.

- Summary of change: # 1) An error recovery process is proposed that avoids the possibility of double counting errors.
  - 2) T<sub>SI</sub> of 1280 ms is increased by the maximum RRC procedure delay for Broadcast of system information described in TS25.331 13.5.2. This is 100 ms as maximum. Therefore Tsi is set to 1380ms. Tsi is explained in test procedure.
  - 3) Test procedure described in TS34.108 7.3.3 in which periodical AS and NAS timers are deactivated is used in this test case with a modification as IE "RRC State Indicator" in RADIO BEARER SETUP (STEP3) is set to "CELL\_PCH"/"URA\_PCH".
  - 4) The timing when call set up has completed at step 3 is made the beginning of time period T1.
  - 5) CELL UPDATE CONFIRM/URA UPDATE CONFIRM message is used to

	terminate the random access procedure.
Consequences if # not approved:	1) This test case may give false readings which may unfairly penalise a good UE. 34.122 and 25.123 will be inconsistent.
	2) The test procedure cannot be executed properly with a compliant UE and test requirement cannot be met.
	3) Ability beyond Minimum requirement is required. Even "Good UE" may not pass this test.
	4) Test procedure will not terminate properly

Clauses affected:	第 8.3.5 and 8.3.6
Other specs affected:	Y N  X Other core specifications   Test specifications   O&M Specifications
Other comments:	ж

### How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked \( \mathcal{H} \) 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a>. 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 Cell Re-selection in CELL PCH

# 8.3.5.1 Scenario 1: TDD/TDD cell re-selection single carrier case

# 8.3.5.1.1 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 causes the UE to camp on a new cell , and starts to send the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the TDD UE.

# 8.3.5.1.2 Minimum requirement

The cell re-selection delay shall be less than 8 s.

NOTE:

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

T<sub>evaluateTDD</sub> A DRX cycle length of 1280ms is assumed for this test case, this leads to a T<sub>evaluateTDD</sub> of 6.4s

according to TS 25.123 [2] table 4.1 in clause 4.2.2.7.

T<sub>SI</sub> 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 25.123 [2] clauses 5.5 and A.5.5.1.

### 8.3.5.1.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay in CELL\_PCH for the single carrier case

### 8.3.5.1.4 Method of test

### 8.3.5.1.4.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.5.1.1, and 8.3.5.1.1.2.

Table 8.3.5.1.1: General test parameters for Cell Re-selection single carrier multi-cell case

	Parameter	Unit	Value	Comment				
Initial	Active cell		Cell1					
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6					
Final	Active cell		Cell2					
condition								
	HCS		Not used					
UE_TX	UE_TXPWR_MAX_RACH		21	The value shall be used for all cells in the test.				
	Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.				
	Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.				
$T_{SI}$		S	1.28	The value shall be used for all cells in the test.				
DR	DRX cycle length		1.28	The value shall be used for all cells in the test.				
	T1		15					
	T2	S	15					

Table 8.3.5.1.2: Cell re-selection single carrier multi-cell case

Parameter	Unit		Се	Cell 1				Cell 2				Cell 3			
Timeslot Number		,	0 8			0 8			(	0	,	8			
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2		
UTRA RF Channel Number			Channel 1			Channel 1				Channel 1					
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3				
SCH_Ec/lor	dB	-9	9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9		
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10		
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3		
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28		
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1		
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74				
Qoffset1 <sub>s,n</sub>	dB	,		C3:0; C <sup>2</sup>	•			C3:0; C2; C2; C2, C6:			1: 0; C3, 3, C5: 0				
Qhyst1 <sub>s</sub>	dB		(	)			(	)			(	)			
Treselection	S		0			0				0					
Sintrasearch	dB		not sent			not sent				not sent					
		Cell 4				Ce	II 5			Ce	II 6				
Timeslot			)		3		)		3		0 8				
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2		
UTRA RF Channel Number			Chan	nel 1		Channel 1				Channel 1					
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3				
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9		
SCH_t <sub>offset</sub>		15	15	15	15	20	20	20	20	25	25	25	25		
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3		
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28		
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74				
Qoffset1 <sub>s,n</sub>	dB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4, C6:0					C2:0; C5 C5, C6:		,	1: 0; C6, C6, C4:0;		•			
Qhyst1 <sub>s</sub>	dB	0					)				)				
Treselection	S	0				(	)			(	)				
Sintrasearch	dB	not sent			not sent					not	sent				
$I_{oc}$	dBm/3, 84 MHz	-70													
Propagation Condition		AWGN													

### 8.3.5.1.4.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.1 to place the UE in the CELL PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) <u>If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step g). The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE.</u>
- f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step g) The SS sends the UE CELL UPDATE CONFIRM message with "RRC State Indicater" = "CELL\_PCH".
- g) After a total of another 15 s from the beginning of T2, the parameters are changed as described for T1.

- h) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step j) The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE.
- i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step j).
- i) Repeat steps d) to g)i) [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

### **Specific Message Contents**

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

### RADIO BEARER SETUP (STEP3)

Information Element	<u>Value/remark</u>
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	<u>7</u>

### 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.

- 1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8 s.
- 3) In step h), the UE shall respond on cell 1 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [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.

### 8.3.5.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

# 8.3.5.2.1 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 causes the UE to camp on a new cell , and starts to send the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the option TDD UE.

### 8.3.5.2.2 Minimum requirement

The cell re-selection delay shall be less than 8 s.

NOTE:

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

T<sub>evaluateTDD</sub> A DRX cycle length of 1280ms is assumed for this test case, this leads to a T<sub>evaluateTDD</sub> of 6.4s

according to TS 25.123 [2] table 4.1 in clause 4.2.2.7.

T<sub>SI</sub> 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 25.123 [2] clauses 5.5 and A.5.5.2.

# 8.3.5.2.3 Test purpose

This test verifies that the UE meets the requirement for the cell re-selection delay in CELL\_PCH for the multi carrier case.

### 8.3.5.2.4 Method of test

### 8.3.5.2.4.1.1 Initial conditions

This scenario contains 6 cells and 2 carrier frequencies. The test parameters are given in Tables 8.3.5.2.1 and 8.3.5.2.2.

Table 8.3.5.2.1: General test parameters for Cell Re-selection in Multi carrier case

	Parameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4,	
			Cell5, Cell6	
Final condition	Active cell		Cell2	
	HCS		Not used	
UE_TX	UE_TXPWR_MAX_RACH		21	The value shall be used for all cells in the test.
	Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.
	Service Class (ASC#0)			Selected so that no additional delay is caused
- Persistence value			1	by the random access procedure. The value shall be used for all cells in the test.
$T_{SI}$		S	1.28	The value shall be used for all cells in the test.
D	DRX cycle length		1.28	The value shall be used for all cells in the test.
	T1	S	30	
	T2	S	15	

Table 8.3.5.2.2: Cell re-selection multi carrier multi cell case

Parameter	Unit		Се	II 1		Cell 2				Cell 3			
Timeslot Number		0	0 8			(	0 8			0 8			3
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Channel 1			Channel 2			Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
$\hat{I}_{or}/I_{oc}$	dB	6	0	6	0	0	6	0	6	-3	-3	-3	-3
PCCPCH RSCP	dBm	-67	-73			-73	-67			-76	-76		
Qoffset1 <sub>s,n</sub>	dB			C1, C3:05:0; C1,				C2, C3: 5:0; C2,				C2:0; C3; C6:	
Qhyst1 <sub>s</sub>	dB		(	)				)				0	
Treselection	s		(	)			(	)			(	0	
Sintrasearch	dB		not sent			not sent				not sent			
Sintersearch	dB		not sent			not sent				not sent			
			Cell 4				Се	II 5			Ce	II 6	
Timeslot		0			3	0 8			0 8			3	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nel 1		Channel 2				Channel 2			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t <sub>offset</sub>	_	15	15	15	15	20	20	20	20	25	25	25	25
PICH Ec/lor	dB	_	_	-3	-3	_		-3	-3	_		-3	-3
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
$\hat{I}_{or}/I_{oc}$	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-76	-76			-76	-76			-76	-76		
Qoffset1 <sub>s,n</sub>	dB		C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0					C2:0; C5 C5, C6:				C2:0; C0; C6; C6, C5:	
Qhyst1 <sub>s</sub>	dB		0				)				0		
Treselection	S	0				(	)				0		
Sintrasearch	dB	not sent			not sent				not sent				
Sintersearch	dB	not sent				not	sent			not	sent		
$I_{oc}$	dBm/3, 84 MHz							-70					
Propagation Condition			AWGN										

# 8.3.5.2.4.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.1 to place the UE in the CELL PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step g). The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE.
- f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step g) The SS sends the UE CELL UPDATE CONFIRM message with "RRC State Indicater" = "CELL\_PCH".

- g) After a total of another 15 s from the beginning of T2, the parameters are changed as described for T1.
- h) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step j) The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE.
- i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step j).
- i) Repeat steps d) to ig) [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.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

### **RADIO BEARER SETUP (STEP3)**

Information Element	<u>Value/remark</u>					
RRC State Indicator	CELL PCH					
UTRAN DRX cycle length coefficient	<u>7</u>					

# 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.

- 1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 1 within 8 s.
- 3) In step h), the UE shall respond on cell 2 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [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.

# 8.3.6 Cell Re-selection in URA\_PCH

# 8.3.6.1 Scenario 1: TDD/TDD cell re-selection single carrier case

# 8.3.6.1.1 Definition and applicability

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

The requirements and this test apply to the TDD UE.

### 8.3.6.1.2 Minimum requirement

The cell re-selection delay shall be less than  $8\ s.$ 

### NOTE:

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

 $T_{evaluateTDD}$  A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluateTDD}$  of 6.4s

according to TS25.123 [2] table 4.1 in clause 4.2.2.7.

T<sub>SI</sub> 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 25.123 [2] clauses 5.6 and A.5.6.1.

# 8.3.6.1.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay in URA\_PCH for the single carrier case.

### 8.3.6.1.4 Method of test

#### 8.3.6.1.4.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.6.1.1, and 8.3.6.1.2.

Table 8.3.6.1.1: General test parameters for Cell Re-selection single carrier multi-cell case

F	Parameter	Unit	Value	Comment				
Initial	Active cell		Cell1					
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6					
Final condition	Active cell		Cell2					
	HCS		Not used					
UE_TXI	PWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.				
	Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.				
	Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.				
T <sub>SI</sub>		S	1.28	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		15					
	T2		15					

Table 8.3.6.1.2: Cell re-selection single carrier multi-cell case

Parameter	Unit		Се	Cell 1				Cell 2				Cell 3			
Timeslot Number		,	0 8			0 8			(	0		8			
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2		
UTRA RF Channel Number			Channel 1			Channel 1				Channel 1					
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3				
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9		
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10		
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3		
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12		
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1		
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74				
Qoffset1 <sub>s,n</sub>	dB			C3:0; C <sup>2</sup> ; C1,C6:0				C3:0; C2; C2, C6:			1: 0; C3, 3, C5: 0				
Qhyst1 <sub>s</sub>	dB		(	)			(	)			(	)			
Treselection	S		0			0				0					
Sintrasearch	dB		not sent			not sent				not sent					
		Cell 4				Ce	II 5			Ce	II 6				
Timeslot		(	)		3	(	)		3	(	0 8				
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2		
UTRA RF Channel Number			Char	nel 1		Channel 1				Channel 1					
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3				
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9		
SCH_t <sub>offset</sub>		15	15	15	15	20	20	20	20	25	25	25	25		
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3		
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12		
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		
PCCPCH RSCP	DBm	-74	-74			-74	-74			-74	-74				
Qoffset1 <sub>s,n</sub>	DB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4, C6:0					C2:0; C5; C5; C6:		C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0						
Qhyst1 <sub>s</sub>	DB	0				)				)					
Treselection	S	0			0				0						
Sintrasearch	DB	not sent				not	sent			not	sent				
$I_{oc}$	dBm/3, 84 MHz	-70													
Propagation Condition		AWGN													

### 8.3.6.1.4.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.2 to place the UE in the URA PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step g) The SS waits for URA UPDATE message with cause value "change of URA" from the UE.
- f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step g). The SS sends the UE CELL UPDATE CONFIRM message with "RRC State Indicater" = "URA\_PCH".
- g) After a total of another 15 s from the beginning of T2, the parameters are changed as described for T1.

- h) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded and the procedure moves to step j). The SS waits for URA UPDATE message with cause value "change of URA" from the UE.
- i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step j).
- i) Repeat steps d) to ig) [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

### RADIO BEARER SETUP (STEP3)

Information Element	<u>Value/remark</u>						
RRC State Indicator	URA PCH						
UTRAN DRX cycle length coefficient	7						

### 8.3.6.1.5 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.

- 1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8 s.
- 3) In step h), the UE shall respond on cell 1 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [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.

# 8.3.6.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

### 8.3.6.2.1 Definition and applicability

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

The requirements and this test apply to the TDD UE.

### 8.3.6.2.2 Minimum requirement

The cell re-selection delay shall be less than 8 s.

NOTE:

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

 $T_{evaluateTDD}$  A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluateTDD}$  of 6.4s according to TS25.123 [2] table 4.1 in clause 4.2.2.7.

T<sub>SI</sub> 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 25.123 [2] clauses 5.6 and A.5.6.1.

# 8.3.6.2.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay in URA\_PCH for the single carrier case

# 8.3.6.2.4 Method of test

### 8.3.6.2.4.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.6.2.1, and 8.3.6.2.2.

Table 8.3.6.2.1: General test parameters for Cell Re-selection single carrier multi-cell case

	Parameter	Unit	Value	Comment				
Initial	Active cell		Cell1					
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6					
Final condition	Active cell		Cell2					
	HCS		Not used					
UE_TX	UE_TXPWR_MAX_RACH		21	The value shall be used for all cells in the test.				
	Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.				
	Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.				
$T_{SI}$		S	1.28	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					
	T2	S	15					

Table 8.3.6.2.2: Cell re-selection single carrier multi-cell case

Parameter	Unit		Cell 1				Cell 2				Cell 3			
Timeslot Number		0 8				0 8				(	0		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Channel 1			Channel 1				Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1	
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74			
Qoffset1 <sub>s,n</sub>	dB			C3:0; C <sup>2</sup> ; C1,C6:0				C3:0; C2; C2, C6:			1: 0; C3, 3, C5: 0			
Qhyst1 <sub>s</sub>	dB		(	)			(	)			(	)		
Treselection	S		0			0				0				
Sintrasearch	dB		not sent			not sent				not sent				
		Cell 4				Ce	II 5			Ce	II 6			
Timeslot		•	)		3	(	)		3		0 8		8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Chan	nel 1		Channel 1				Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		15	15	15	15	20	20	20	20	25	25	25	25	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74			
Qoffset1 <sub>s,n</sub>	dB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4, C6:0					C2:0; C5; C6:		C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0					
Qhyst1 <sub>s</sub>	dB	0				)				)				
Treselection	S	0				(	)			(	)			
Sintrasearch	dB	not sent				not	sent			not	sent			
$I_{oc}$	dBm/3, 84 MHz	-70												
Propagation Condition		AWGN												

### 8.3.6.2.4.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.2 to place the UE in the URA PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) <u>If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step g) The SS waits for URA UPDATE message with cause value "change of URA" from the UE.</u>
- f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step g) The SS sends the UE CELL UPDATE CONFIRM message with "RRC State Indicater" = "URA\_PCH".
- g) After a total of another 15 s from the beginning of T2, the parameters are changed as described for T1.

- h) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded and the procedure moves to step j). The SS waits for URA UPDATE message with cause value "change of URA" from the UE.
- i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step j).
- i) Repeat steps d) to ig) [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

# **RADIO BEARER SETUP (STEP3)**

Information Element	<u>Value/remark</u>
RRC State Indicator	<u>URA PCH</u>
UTRAN DRX cycle length coefficient	7

### 8.3.6.2.5 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.

- 1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8 s.
- 3) In step h), the UE shall respond on cell 1 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [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 #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

Tdoc # T1-030166

	(	CHANGE	REQ	JEST	1		CR-Form-v7
*	34.122 CR	155	<b>≋rev</b>	<b>-</b> #	Current vers	ion: <b>4.6.0</b>	Ħ
	using this form, see	_				_	
Proposed change		apps#			ccess Networ		etwork
Title:	Correction to Co	ell Re-selection	in CELL_	PCH and	URA_PCH t	est cases	
Source:	¥ T1-RF						
Work item code:	×				Date: ₩	15/01/2003	
Category:	<b>B</b> (addition o	) ids to a correction f feature), modification of fe nodification) ons of the above	n in an earl eature)		2 R96 R97 R98 R99	Rel-4 the following relation (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5)	

- Reason for change: \$\mathbb{H}\$ 1.) It is not clear in the procedure what should happen in the event of an error
  - 2.) The RRC procedure delay of system information blocks defined in 25.331 is not accounted for in 25.123 or in 34.122.

Rel-6

(Release 6)

- 3.) Periodical Location Updating timer and periodical Routing Area Updating timer is set up in the generic set-up procedure described in TS 34.108 subclause 7.4.2. Hence the UE may perform a Location Updating or Routing Area Updating procedure that is not expected in test procedure since UE is in CELL\_PCH/URA\_UPDATE states, and so the test procedure is not executed correctly. Periodical cell update/ura update procedures are also initiated in CELL\_PCH/URA\_PCH states according to T305.
- 4) The beginning of time period T1 isn't clear in "Procedure".
- 5)It is not clear how random access procedure is terminated in test procedure.

- Summary of change: # 1) An error recovery process is proposed that avoids the possibility of double counting errors.
  - 2) T<sub>SI</sub> of 1280 ms is increased by the maximum RRC procedure delay for Broadcast of system information described in TS25.331 13.5.2. This is 100 ms as maximum. Therefore Tsi is set to 1380ms. Tsi is explained in test procedure.
  - 3) Test procedure described in TS34.108 7.3.3 in which periodical AS and NAS timers are deactivated is used in this test case with a modification as IE "RRC State Indicator" in RADIO BEARER SETUP (STEP3) is set to "CELL\_PCH"/"URA\_PCH".
  - 4) The timing when call set up has completed at step 3 is made the beginning of time period T1.
  - 5) CELL UPDATE CONFIRM/URA UPDATE CONFIRM message is used to

terminate the random access procedure.

6) Corrected misnumbered sub-clauses in 8.3.6.2

Consequences if not approved:

1) This test case may give false readings which may unfairly penalise a good UE. 34.122 and 25.123 will be inconsistent.

2) The test procedure cannot be executed properly with a compliant UE and test requirement cannot be met.

3) Ability beyond Minimum requirement is required. Even "Good UE" may not pass this test.

4) Test procedure will not terminate properly

Clauses affected:	# 8.3.5 and 8.3.6
Other specs affected:	Y N  X Other core specifications   Test specifications   O&M Specifications
Other comments:	ж

#### How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked \( \mathcal{H} \) 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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 Cell Re-selection in CELL PCH

## 8.3.5.1 Scenario 1: TDD/TDD cell re-selection single carrier case

#### 8.3.5.1.1 Definition and applicability

#### 8.3.5.1.1.1 3,84 Mcps TDD option

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

The requirements and this test apply to the 3,84 Mcps TDD UE.

8.3.5.1.1.2 1,28 Mcps TDD option

Void.

8.3.5.1.2 Minimum requirement

8.3.5.1.2.1 3,84 Mcps TDD option

The cell re-selection delay shall be less than  $8\ s.$ 

NOTE:

The cell re-selection delay can be expressed as:  $T_{\text{evaluateTDD}} + T_{\text{SI}},$  where:

T<sub>evaluateTDD</sub> A DRX cycle length of 1280ms is assumed for this test case, this leads to a T<sub>evaluateTDD</sub> of 6.4s

according to TS 25.123 [2] table 4.1 in clause 4.2.2.7.

T<sub>SI</sub> 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 25.123 [2] clauses 5.5 and A.5.5.1.

8.3.5.1.2.2 1,28 Mcps TDD option

Void.

8.3.5.1.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay in CELL\_PCH for the single carrier case

8.3.5.1.4 Method of test

8.3.5.1.4.1 3,84 Mcps TDD option

8.3.5.1.4.1.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.5.1.1.1, and 8.3.5.1.1.2.

Table 8.3.5.1.1.1: General test parameters for Cell Re-selection single carrier multi-cell case

F	Parameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final	Active cell		Cell2	
condition				
	HCS		Not used	
UE_TXI	E_TXPWR_MAX_RACH dBm		21	The value shall be used for all cells in the test.
	Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.
	ervice Class (ASC#0) rsistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	T <sub>SI</sub>	S	1.28	The value shall be used for all cells in the test.
DR	DRX cycle length		1.28	The value shall be used for all cells in the test.
	T1		15	
	T2		15	

Table 8.3.5.1.1.2: Cell re-selection single carrier multi-cell case

Parameter	Unit		Ce	II 1			Ce	II 2		Cell 3			
Timeslot Number		(	)	8			0 8			0			3
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Channel 1			Channel 1			Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset1 <sub>s,n</sub>	dB			C3:0; C'				C3:0; C2; C2, C6:		C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1 <sub>s</sub>	dB		(	)			(	0			(	)	
Treselection	S		0			0				0			
Sintrasearch	dB		not sent			not sent				not sent			
			Ce	II 4		Cell 5				Cell 6			
Timeslot		(	)	8	3	0 8			0 8				
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nel 1		Channel 1				Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t <sub>offset</sub>		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 <sub>s,n</sub>	dB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4, C6:0						C2:0; C: ; C5, C6:			1: 0; C6, C6, C4:0;		
Qhyst1 <sub>s</sub>	dB	0				0			0				
Treselection	S	0				0			0				
Sintrasearch	dB	not sent					not	sent			not	sent	
$I_{oc}$	dBm/3, 84 MHz		-70										
Propagation Condition			AWGN										

#### 8.3.5.1.4.1.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.1 to place the UE in the CELL PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step g). The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE.
- f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step g) The SS sends the UE CELL UPDATE CONFIRM message with "RRC State Indicater" = "CELL\_PCH".
- g) After a total of another 15 s from the beginning of T2, the parameters are changed as described for T1.
- h) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step j) The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE.
- i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step j).
- i)—Repeat steps d) to gi [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

#### **Specific Message Contents**

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

#### RADIO BEARER SETUP (STEP3)

Information Element	<u>Value/remark</u>
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	<u>7</u>

8.3.5.1.4.2 1,28 Mcps TDD option

Void.

8.3.5.1.5 Test Requirements

8.3.5.1.5.1 3,84 Mcps TDD option

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.

- 1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8 s.
- 3) In step h), the UE shall respond on cell 1 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [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.

8.3.5.1.5.2 1,28 Mcps TDD option

Void.

8.3.5.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

8.3.5.2.1 Definition and applicability

8.3.5.2.1.1 3,84 Mcps TDD option

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

The requirements and this test apply to the 3,84 Mcps option TDD UE.

8.3.5.2.1.2 1,28 Mcps TDD option

Void.

8.3.5.2.2 Minimum requirement

8.3.5.2.2.1 3,84 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

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

 $T_{evaluateTDD}$  A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluateTDD}$  of 6.4s

according to TS 25.123 [2] table 4.1 in clause 4.2.2.7.

T<sub>SI</sub> 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 25.123 [2] clauses 5.5 and A.5.5.2.

8.3.5.2.2.2 3,84 Mcps TDD option

Void.

8.3.5.2.3 Test purpose

This test verifies that the UE meets the requirement for the cell re-selection delay in CELL\_PCH for the multi carrier case.

8.3.5.2.4 Method of test

8.3.5.2.4.1 3,84 Mcps TDD option

8.3.5.2.4.1.1 Initial conditions

This scenario contains 6 cells and 2 carrier frequencies. The test parameters are given in Tables 8.3.5.2.1.1 and 8.3.5.2.1.2.

Table 8.3.5.2.1.1: General test parameters for Cell Re-selection in Multi carrier case

	Parameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
	HCS		Not used	
UE_TX	TPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
	Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.
	Service Class (ASC#0) ersistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	T <sub>SI</sub>	S	1.28	The value shall be used for all cells in the test.
DI	RX cycle length	S	1.28	The value shall be used for all cells in the test.
	T1	S	30	
	T2	S	15	

Table 8.3.5.2.1.2: Cell re-selection multi carrier multi cell case

Parameter	Unit		Се	II 1		Cell 2				Cell 3				
Timeslot Number		0	0 8			(	0 8			0			8	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Channel 1			Channel 2			Channel 1					
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	
$\hat{I}_{or}/I_{oc}$	dB	6	0	6	0	0	6	0	6	-3	-3	-3	-3	
PCCPCH RSCP	dBm	-67	-73			-73	-67			-76	-76			
Qoffset1 <sub>s,n</sub>	dB		C1, C2: 0; C1, C3:0; C1,C4:0C1, C5:0; C1, C6:0					C2, C3: 5:0; C2,			C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5:0; C3, C6:0			
Qhyst1 <sub>s</sub>	dB		(	)				)				0		
Treselection	s		(	)			(	)			(	0		
Sintrasearch	dB		not sent			not sent				not sent				
Sintersearch	dB		not	sent		not sent				not sent				
			Ce	II 4		Cell 5				Cell 6				
Timeslot		0			3	0 8		0			3			
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nel 1		Channel 2			Channel 2					
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>	_	15	15	15	15	20	20	20	20	25	25	25	25	
PICH Ec/lor	dB	_		-3	-3	_		-3	-3	_		-3	-3	
OCNS_Ec/lor	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	
$\hat{I}_{or}/I_{oc}$	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	
PCCPCH RSCP	dBm	-76	-76			-76	-76			-76	-76			
Qoffset1 <sub>s,n</sub>	dB			C2:0; C4 C4, C6:				C2:0; C5 C5, C6:		C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0				
Qhyst1 <sub>s</sub>	dB		0					)				0		
Treselection	S	0				(	)		0					
Sintrasearch	dB	not sent			not sent			not sent						
Sintersearch	dB	not sent					not	sent			not	sent		
$I_{oc}$	dBm/3, 84 MHz						-70							
Propagation Condition			AWGN											

### 8.3.5.2.4.1.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.1 to place the UE in the CELL\_PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step g). The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE.
- f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step g) The SS sends the UE CELL UPDATE CONFIRM message with "RRC State Indicater" = "CELL\_PCH".

- g) After a total of another 15 s from the beginning of T2, the parameters are changed as described for T1.
- h) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step j) The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE.
- i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step j).

i) Repeat steps d) to ig) [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.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

#### **RADIO BEARER SETUP (STEP3)**

Information Element	<u>Value/remark</u>
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	<u>7</u>

8.3.5.2.<del>54</del>.2 1,28 Mcps TDD option

Void.

8.3.5.2.5 Test Requirements

8.3.5.2.5.1 3,84 Mcps TDD option

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.

- 1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 1 within 8 s.
- 3) In step h), the UE shall respond on cell 2 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [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.

8.3.5.2.5.2 1,28 Mcps TDD option

Void.

# 8.3.6 Cell Re-selection in URA\_PCH

## 8.3.6.1 Scenario 1: TDD/TDD cell re-selection single carrier case

#### 8.3.6.1.1 Definition and applicability

#### 8.3.6.1.1.1 3,84 Mcps TDD option

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

The requirements and this test apply to the 3,84 Mcps TDD UE.

8.3.6.1.1.2 1,28 Mcps TDD option

Void.

8.3.6.1.2 Minimum requirement

8.3.6.1.2.1 3,84 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

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

 $T_{evaluate TDD}$  A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluate TDD}$  of 6.4s

according to TS25.123 [2] table 4.1 in clause 4.2.2.7.

T<sub>SI</sub> 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 25.123 [2] clauses 5.6 and A.5.6.1.

8.3.6.1.2.2 1,28 Mcps TDD option

Void.

### 8.3.6.1.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay in URA\_PCH for the single carrier case.

8.3.6.1.4 Method of test

8.3.6.1.4.1 3,84 Mcps TDD option

8.3.6.1.4.1.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.6.1.1.1, and 8.3.6.1.1.2.

Table 8.3.6.1.1.1: General test parameters for Cell Re-selection single carrier multi-cell case

F	Parameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final	Active cell		Cell2	
condition				
	HCS		Not used	
UE_TXI	E_TXPWR_MAX_RACH dBm		21	The value shall be used for all cells in the test.
	Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.
	ervice Class (ASC#0) rsistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	T <sub>SI</sub>	S	1.28	The value shall be used for all cells in the test.
DR	DRX cycle length		1.28	The value shall be used for all cells in the test.
	T1		15	
	T2		15	

Table 8.3.6.1.1.2: Cell re-selection single carrier multi-cell case

Parameter	Unit		Ce	II 1			Ce	II 2		Cell 3				
Timeslot Number		(	)	8	3	(	0 8				0		3	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Channel 1			Channel 1			Channel 1					
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1	
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74			
Qoffset1 <sub>s,n</sub>	dB			C3:0; C <sup>2</sup> ; C1,C6:0				C3:0; C2; C2, C6:			C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1 <sub>s</sub>	dB		(	)			(	)			(	)		
Treselection	S		(	)		0				0				
Sintrasearch	dB		not sent			not sent				not sent				
			Ce	II 4		Cell 5					Ce	II 6		
Timeslot		(	)		3	0 8			0 8					
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number			Char	nel 1		Channel 1				Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3			
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	
SCH_t <sub>offset</sub>		15	15	15	15	20	20	20	20	25	25	25	25	
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3	
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
PCCPCH RSCP	DBm	-74	-74			-74	-74			-74	-74			
Qoffset1 <sub>s,n</sub>	DB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4, C6:0						C2:0; C:			1: 0; C6, C6, C4:0:			
Qhyst1 <sub>s</sub>	DB	0				C5, C4:0; C5, C6:0 0			C6, C4:0; C6, C5:0					
Treselection	S	0				0			0					
Sintrasearch	DB	not sent						sent				sent		
$I_{oc}$	dBm/3, 84 MHz		-70											
Propagation Condition			AWGN											

#### 8.3.6.1.4.1.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.2 to place the UE in the URA PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) <u>If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step g) The SS waits for URA UPDATE message with cause value "change of URA" from the UE.</u>
- f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step g). The SS sends the UE CELL UPDATE CONFIRM message with "RRC State Indicater" = "URA PCH".
- g) After a total of another 15 s from the beginning of T2, the parameters are changed as described for T1.
- h) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded and the procedure moves to step j). The SS waits for URA UPDATE message with cause value "change of URA" from the UE.
- i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step j).
- i) Repeat steps d) to ig) [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

#### **RADIO BEARER SETUP (STEP3)**

Information Element	<u>Value/remark</u>
RRC State Indicator	<u>URA PCH</u>
UTRAN DRX cycle length coefficient	7

8.3.6.1.4.2 1,28 Mcps TDD option

Void.

# 8.3.6.1.5 Test Requirements

### 8.3.6.1.5.1 3,84 Mcps TDD option

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.

- 1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8 s.
- 3) In step h), the UE shall respond on cell 1 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [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.

8.3.6.1.5.2 1,28 Mcps TDD option

Void.

#### 8.3.6.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

8.3.6.42.1 Definition and applicability

8.3.6.42.1.1 3,84 Mcps TDD option

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

The requirements and this test apply to the 3,84 Mcps TDD UE.

8.3.6.42.1.2 1,28 Mcps TDD option

Void.

8.3.6.42.2 Minimum requirement

8.3.6.42.2.1 3,84 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

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

 $T_{evaluateTDD}$  A DRX cycle length of 1280ms is assumed for this test case, this leads to a  $T_{evaluateTDD}$  of 6.4s

according to TS25.123 [2] table 4.1 in clause 4.2.2.7.

T<sub>SI</sub> 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 25.123 [2] clauses 5.6 and A.5.6.1.

8.3.6.42.2.2 1,28 Mcps TDD option

Void.

8.3.6.42.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay in URA\_PCH for the single carrier case

8.3.6.<u>42</u>.4 Method of test

8.3.6.<del>12</del>.4.1 3,84 Mcps TDD option

8.3.6.<u>42</u>.4.1.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables  $8.3.6.\underline{+2}.1.1$ , and  $8.3.6.\underline{+2}.1.2$ .

Table 8.3.6.42.1.1: General test parameters for Cell Re-selection single carrier multi-cell case

F	Parameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
	HCS		Not used	
UE_TXI	PWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
	Qrxlevmin	dBm	-102	The value shall be used for all cells in the test.
	ervice Class (ASC#0) rsistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
	T <sub>SI</sub>	S	1.28	The value shall be used for all cells in the test.
DR	X cycle length	S	1.28	The value shall be used for all cells in the test.
	T1	S	15	
	T2	S	15	

Parameter	Unit	Cell 1			Cell 2				Cell 3				
Timeslot Number		(	)	8		(	)	8	3		0	8	3
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nel 1			Chan	nel 1		Channel 1			
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t <sub>offset</sub>		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset1 <sub>s,n</sub>	dB			C3:0; C <sup>2</sup> ; C1,C6:0			1: 0; C2, 22, C5: 0				1: 0; C3, 23, C5: 0		
Qhyst1 <sub>s</sub>	dB		(	)			(	)			(	)	
Treselection	S		(	)			(	)		0			
Sintrasearch	dB		not	sent		not sent			not sent				
			Ce	II 4		Cell 5			Cell 6				
Timeslot		,	)		3	0 8				0 8			
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number			Char	nel 1		Channel 1			Channel 1				
PCCPCH_Ec/lor	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/lor	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t <sub>offset</sub>		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/lor	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/lor	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1 <sub>s,n</sub>	dB			C4, C2:05:0; C4,			1: 0; C5, C5, C4:0;				1: 0; C6, C6, C4:0;		
Qhyst1 <sub>s</sub>	dB	,		)				)				)	
Treselection	S		0			0				(	)		
Sintrasearch	dB		not sent			not sent				not	sent		
$I_{oc}$	dBm/3, 84 MHz		-70										
Propagation Condition			AWGN										

Table 8.3.6.42.1.2: Cell re-selection single carrier multi-cell case

#### 8.3.6.<del>12</del>.4.1.2 Procedure

- a) The SS activates cell 1-6 with T1 defined parameters.
- b) The UE is switched on.
- c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.2 to place the UE in the URA PCH state on Cell 1 and then the SS waits for this process to complete.
- d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.
- e) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step g) The SS waits for URA UPDATE message with cause value "change of URA" from the UE.
- f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step g) The SS sends the UE CELL UPDATE CONFIRM message with "RRC State Indicater" = "URA\_PCH".
- g) After a total of another 15 s from the beginning of T2, the parameters are changed as described for T1.

- h) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded and the procedure moves to step j). The SS waits for URA UPDATE message with cause value "change of URA" from the UE.
- i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step j).
- i) Repeat steps d) to ig) [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

#### RADIO BEARER SETUP (STEP3)

Information Element	<u>Value/remark</u>
RRC State Indicator	<u>URA PCH</u>
UTRAN DRX cycle length coefficient	7

8.3.6.<del>12</del>.4.2 1,28 Mcps TDD option

Void.

8.3.6.42.5 Test Requirements

8.3.6.<del>12</del>.5.1 3,84 Mcps TDD option

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.

- 1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8 s.
- 3) In step h), the UE shall respond on cell 1 within 8 s.

For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [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.

8.3.6.42.5.2 1,28 Mcps TDD option

Void.

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

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Other comments:	₩ -					

# 2 References

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

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

[1]	3GPP TS 25.102 (V4.0.0): "UTRA (UE) TDD; Radio Transmission and Reception (TDD)".
[2]	3GPP TS 25.123: "Requirements for Support of Radio Resource Management (TDD)".
[3]	3GPP TS 34.108 "Common Test Environments for User Equipment (UE) Conformance Testing"
[4]	3GPP TS 34.109: "Terminal logical test interface; Special conformance testing functions".
[5]	3GPP TS 25.224: "Physical Layer Procedures (TDD)".
[6]	3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
[7]	3GPP TR 25.990: "Vocabulary".
[8]	ITU-R Recommendation SM.328-9: "Spectra and bandwidth of emissions".
[9]	3GPP TS 25.331: "Radio Resource Control (RRC) Protocol Specification".
[10]	3GPP TS 25.433 "UTRAN Iub Interface NBAP Signalling".
[11]	ITU-R Recommendation SM.329: "Spurious emissions".
[12]	3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode".
[13]	3GPP TS 25.303: "Interlayer Procedures in Connected Mode".
[14]	3GPP TS 25.321: "Medium Access Control (MAC) protocol specification".
[15]	3GPP TS 25.223: "Spreading and modulation (TDD)".
[16]	ETSI ETR 273-1-2: "Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".
[17]	3GPP TR 25.926: "UE Radio Access Capabilities".
[18]	3GPP TR 21.904: "UE capability requirements".
[19]	3GPP TS 25.221: "Physical channels and mapping of transport channels onto physical channels (TDD)".
[20]	3GPP TS 05.08: "Digital cellular telecommunications system (Phase 2+); Radio subsystem link control".
[21]	3GPP TS 34.123-1: "User Equipment (UE) Conformance Specification; Part 1: Protocol Conformance Specification".
[22]	3GPP TS 25.225: "Physical Layer – Measurements (TDD)".

# < Next changed section >

# 8.7 Measurements Performance Requirements

Unless explicitly stated:

- Measurement channel is 12.2 kbps as defined in TS 25.102 annex A annex C, sub-clause C.3.1. This measurement channel is used both in active cell and cells to be measured.
- Cell 1 is the active cell.
- Single task reporting.
- Power control is active.

## 8.7.1 P-CCPCH RSCP

## 8.7.1.1 Intra frequency measurement accuracy

#### 8.7.1.1.1 Absolute accuracy requirement

#### 8.7.1.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP meaasured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of UTRA TDD UE.

#### 8.7.1.1.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P - CCPCH _{E_c}}{I_o}\right)_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)_{in_c dB} \ge -13dB$$

Table 8.7.1.1.1: P-CCPCH\_RSCP absolute accuracy

Parameter	Unit	Accur	Conditions	
raiametei	Oilit	Normal condition	Extreme condition	lo [dBm]
P-CCPCH RSCP	dBm	± 6	± 9	-9470
F-CCFCH_R3CF	dBm	± 8	± 11	-7050

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.1 and A.9.1.1.1.1.

#### 8.7.1.1.3 Test Purpose

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

#### 8.7.1.1.4 Method of test

#### 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. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Table 8.7.1.1.1.2: P-CCPCH RSCP Intra frequency test parameters

Parameter	Unit	Tes	st 1	Tes	st 2	Tes	st 3
Farameter	Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	0	0	0	0	0
UTRA RF Channel number		Char	Channel 1		Channel 1		nel 1
PCCPCH_Ec/lor	dB	-	3	-3		-3	
SCH_Ec/lor	dB	-	-9		-9		9
SCH_t <sub>offset</sub>		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3	12	-3,12		-3,12	
loc	dBm / 3.84 MHz	-7:	5.7	-59.8		-98.7	
Îor/loc	dB	5	2	9	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.7	-76.7	-53.8	-60.8	-98.7	-101.7
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	

NOTE 1: PCCPCH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

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.

#### 8.7.1.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check PCCPCH\_RSCP value in MEASUREMENT REPORT messages. PCCPCH\_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH\_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.

#### 8.7.1.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.1.2 for at least 900 of the measurement reports at each input level in step 4.

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

# 8.7.1.1.2 Relative accuracy requirement

#### 8.7.1.1.2.1 Definition and applicability

The relative accuracy of PCCPCH RSCP is defined as the PCCPCH RSCP measured from one cell compared to the PCCPCH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA TDD UE.

#### 8.7.1.1.2.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P - CCPCH _{E_c}}{I_o}\right)_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)_{in\ dB} \ge -13dB$$

$$\left| P - CCPCH RSCP1 \right|_{in \ dB} - P - CCPCH RSCP2 \right|_{in \ dB} \le 20 dB$$

Relative Io difference [dB] ≤ relative RSCP difference [dB]

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

Table 8.7.1.1.2.1: P-CCPCH RSCP intra-frequency relative accuracy

		Accurac	Conditions		
Parameter	Unit	Normal condition	Extreme condition	lo [dBm]	relative RSCP difference [dbB]
P-CCPCH_RSCP	dBm	±1	±1		<2
		±2	±2	-9450	214
		±3	± 3		>14

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.1.1.

# 8.7.1.1.2.3 Test Purpose

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

#### 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. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH 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 PCCPCH\_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH 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 PCCPCH 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.

#### 8.7.1.1.2.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.2.2 for at least 900 of the measurement reports at each input level in step 4.

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

#### 8.7.1.2 Inter frequency measurement accuracy

### 8.7.1.2.1 Relative accuracy requirement

#### 8.7.1.2.1.1 Definition and applicability

The P-CCPCH\_RSCP inter-frequency relative accuracy is defined as the P-CCPCH\_RSCP measured from one cell compared to the P-CCPCH\_RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA TDD UE.

#### 8.7.1.2.1.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.2.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left| P - CCPCH RSCP1 \right|_{in dB} - P - CCPCH RSCP2 \right|_{in dB} \le 20 dB$$

$$\left. \left( \frac{P - CCPCH _E_c}{I_o} \right) \right|_{in \ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)_{in_c dB} \ge -13dB$$

Table 8.7.1.2.1.1: P-CCPCH\_RSCP inter-frequency relative accuracy

Parameter	Unit	Accura	acy [dB]	Conditions
Parameter	Oill	Normal condition	Extreme condition	lo [dBm]
P-CCPCH_RSCP	dBm	± 6	± 6	-9450

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.

#### 8.7.1.2.1.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits for the inter frequency case.

#### 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. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. P-CCPCH 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: P-CCPCH RSCP Intra frequency test parameters

Parameter	Unit	Tes	st 1	Tes	st 2	Test 3		
raiailletei	Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
DL timeslot number		0	2	0	2	0	2	
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2	
PCCPCH_Ec/lor	dB	=	3	-	3	-	-3	
SCH_Ec/lor	dB	-	9	-	9	-9		
SCH_t <sub>offset</sub>		0	5	0	5	0	5	
OCNS_Ec/lor	dB	-3,	12	-3	,12	-3,12		
loc	dBm / 3.84 MHz	-75.2	-75.2	-57.8	-54.1	-98.7	-97	
Îor/loc	dB	5	5	7	2	3	0	
PCCPCH RSCP, Note 1	dBm	-73.2	-73.2	-54.8	-55.1	-98.7	-100	
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94		
Propagation condition		AW	GN	AWGN		AWGN		

NOTE 1: PCCPCH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

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 PCCPCH\_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH 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 PCCPCH 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.

#### 8.7.1.2.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2.1.2 for at least 900 of the measurement reports at each input level in step 4.

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

# 8.7.2 CPICH measurements (FDD)

8.7.2.1 CPICH RSCP

Void

8.7.2.2 CPICH Ec/lo

Void

8.7.3 Timeslot ISCP

Void

8.7.4 UTRA carrier RSSI

Void

8.7.5 GSM carrier RSSI

Void

8.7.6 Void	SIR
8.7.7 Void	Transport Channel BLER
8.7.8	SFN-SFN observed time difference
8.7.8.1 Void	SFN-SFN observed time difference type 1
8.7.8.2 <u>Void</u>	SFN-SFN observed time difference type 2
8.7.9 <u>Void</u>	Observed time difference to GSM cell
8.7.10 Void	UE GPS Timing of Cell Frames for UP
8.7.11 Void	SFN-CFN observed time difference
8.7.12 Void	UE transmitted power

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

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[2]	3GPP TS 25.123: "Requirements for Support of Radio Resource Management (TDD)".
[3]	3GPP TS 34.108 "Common Test Environments for User Equipment (UE) Conformance Testing"
[4]	3GPP TS 34.109: "Terminal logical test interface; Special conformance testing functions".
[5]	3GPP TS 25.224: "Physical Layer Procedures (TDD)".
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[7]	3GPP TR 25.990: "Vocabulary".
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[10]	3GPP TS 25.433 "UTRAN Iub Interface NBAP Signalling".
[11]	ITU-R Recommendation SM.329: "Spurious emissions".
[12]	3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode".
[13]	3GPP TS 25.303: "Interlayer Procedures in Connected Mode".
[14]	3GPP TS 25.321: "Medium Access Control (MAC) protocol specification".
[15]	3GPP TS 25.223: "Spreading and modulation (TDD)".
[16]	ETSI ETR 273-1-2: "Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".
[17]	3GPP TR 25.926: "UE Radio Access Capabilities".
[18]	3GPP TR 21.904: "UE capability requirements".
[19]	3GPP TS 25.221: "Physical channels and mapping of transport channels onto physical channels (TDD)".
[20]	3GPP TS 45.008: "Digital cellular telecommunications system (Phase 2+); Radio subsystem link control".
[21]	3GPP TS 34.123-1: "User Equipment (UE) Conformance Specification; Part 1: Protocol Conformance Specification".
[22]	3GPP TS 25.225: "Physical Layer – Measurements (TDD)".

# < Next changed section >

# 8.7 Measurements Performance Requirements

Unless explicitly stated:

- Measurement channel is 12.2 kbps as defined in TS 25.102 annex A annex C, sub-clause C.3.1. This measurement channel is used both in active cell and cells to be measured.
- Cell 1 is the active cell.
- Single task reporting.
- Power control is active.

## 8.7.1 P-CCPCH RSCP

## 8.7.1.1 Intra frequency measurement accuracy for 3,84 Mcps TDD Option

#### 8.7.1.1.1 Absolute accuracy requirement

#### 8.7.1.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP meaasured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of UTRA TDD UE.

#### 8.7.1.1.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P - CCPCH _{E_c}}{I_o}\right)_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)_{in_c dB} \ge -13dB$$

Table 8.7.1.1.1: P-CCPCH\_RSCP absolute accuracy

Parameter	Unit	Accur	Conditions	
Farallieter	Oille	Normal condition	Extreme condition	lo [dBm]
P-CCPCH RSCP	dBm	± 6	± 9	-9470
F-CCFCH_R3CF	dBm	± 8	± 11	-7050

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.1 and A.9.1.1.1.1.

#### 8.7.1.1.3 Test Purpose

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

#### 8.7.1.1.4 Method of test

#### 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. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Table 8.7.1.1.1.2: P-CCPCH RSCP Intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
	Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	0	0	0	0	0
UTRA RF Channel number		Char	nel 1	Char	nel 1	Char	nel 1
PCCPCH_Ec/lor	dB	-	3	-	3	-	3
SCH_Ec/lor	dB	-9		-9		-9	
SCH_t <sub>offset</sub>		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3	12	-3	,12	-3	,12
loc	dBm / 3.84 MHz	dBm / 3.84 MHz -75.7		-59.8		-98.7	
Îor/loc	dB	5	2	9	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.7	-76.7	-53.8	-60.8	-98.7	-101.7
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AW	'GN	AW	′GN	AW	'GN

NOTE 1: PCCPCH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

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.

#### 8.7.1.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check PCCPCH\_RSCP value in MEASUREMENT REPORT messages. PCCPCH\_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH\_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.

#### 8.7.1.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.1.2 for at least 900 of the measurement reports at each input level in step 4.

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

## 8.7.1.1.2 Relative accuracy requirement for 3,84 Mcps TDD Option

#### 8.7.1.1.2.1 Definition and applicability

The relative accuracy of PCCPCH RSCP is defined as the PCCPCH RSCP measured from one cell compared to the PCCPCH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA TDD UE.

#### 8.7.1.1.2.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P - CCPCH _{E_c}}{I_o}\right)_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)_{in\ dB} \ge -13dB$$

$$\left| P - CCPCH RSCP1 \right|_{in \ dB} - P - CCPCH RSCP2 \right|_{in \ dB} \le 20 dB$$

Relative Io difference [dB] ≤ relative RSCP difference [dB]

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

Table 8.7.1.1.2.1: P-CCPCH RSCP intra-frequency relative accuracy

		Accurac	Conditions		
Parameter	Unit	Normal condition	Extreme condition	lo [dBm]	relative RSCP difference [dbB]
		±1	±1		<2
P-CCPCH_RSCP	dBm	±2	±2	-9450	214
		±3	± 3		>14

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.1.1.

#### 8.7.1.1.2.3 Test Purpose

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

#### 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. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH 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 PCCPCH\_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH 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 PCCPCH 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.

#### 8.7.1.1.2.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.2.2 for at least 900 of the measurement reports at each input level in step 4.

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

#### 8.7.1.1A Intra frequency measurement accuracy for 1.28 Mcps TDD Option

### 8.7.1.1A.1 Absolute accuracy requirement

#### 8.7.1.1A.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP measured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of UTRA TDD UE 1.28 Mcps option.

#### 8.7.1.1A.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.1.1A.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left. \left( \frac{P - CCPCH _E_c}{I_o} \right) \right|_{in \ dB} \ge -8dB$$

$$\left. \left( \frac{DwPCH _E_c}{I_o} \right) \right|_{in \ dB} \ge -5dB$$

Table 8.7.1.1A.1.1: P-CCPCH\_RSCP absolute accuracy

Parameter	Unit	Accur	Conditions	
Farameter	Oilit	Normal condition	Extreme condition	lo [dBm]
P-CCPCH RSCP	dBm	± 6	± 9	-9470
F-CCFCH_RGCF	dBm	± 8	± 11	-7050

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.1 and A.9.2.1.1.1.

#### 8.7.1.1A.1.3 Test Purpose

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

#### 8.7.1.1A.1.4 Method of test

#### 8.7.1.1A.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. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 5 and the UL DPCH shall be transmitted in timeslot 2. P-CCPCH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1A.1.2.

Table 8.7.1.1A.1.2: P-CCPCH RSCP Intra frequency test parameters

		Test 1				
Parameter	Unit	Cell 1		Cell 2		
Timeslot Number		0 DwPTS		0 DwPTS		
UTRA RF Channel		Channel 1		Chai	nnel 1	
Number		2				
PCCPCH_Ec/lor	dB	-3	0	-3		
DwPCH_Ec/lor	dB		0	0	0	
OCNS_Ec/lor	dB	-3		-3		
$\hat{I}_{or}/I_{oc}$	dB		5		2	
$I_{oc}$	dBm/ 1.28 MHz		-7	6.6	_	
PCCPCH RSCP, Note 1	dBm	-74.6		-77.6		
Io, Note 1	dBm/ 1.28 MHz	-69				
Propagation condition		AWGN				
			Test 2			
Parameter	Unit	Ce	ell 1	Cell 2		
Timeslot Number		0	DwPTS	0	DwPTS	
UTRA RF Channel					•	
Number		Char	nnel 1	Chai	nnel 1	
PCCPCH_Ec/lor	dB	-3		-3		
DwPCH_Ec/lor	dB		0		0	
OCNS_Ec/lor	dB	-3		-3		
$\hat{I}_{or}/I_{oc}$	dB		9	2		
$I_{oc}$	dBm/ 1.28 MHz	-60.2				
PCCPCH RSCP, Note 1	dBm	-54.2		-61.2		
lo, Note 1	dBm/ 1.28 MHz		-	50		
Propagation			ΔV	VGN		
condition		Test 3				
Parameter	Unit	Cell 1			ell 2	
Timeslot Number		0	DwPTS	0	DwPTS	
UTRA RF Channel			nnel 1	Channel 1		
Number	40	2			T	
PCCPCH_Ec/lor DwPCH_Ec/lor	dB	-3	0	-3	1	
OCNS_Ec/lor	dB dB	-3	0	-3	0	
$\hat{I}_{or}/I_{oc}$	dВ		<u>                                     </u>		3	
or / Loc		•	<u> </u>		ა	
$I_{oc}$	dBm/ 1.28 MHz	-101.9				
PCCPCH RSCP, Note 1	dBm	-99.9		-101.9		
Io, Note 1	dBm/ 1.28 MHz	-94				
Propagation condition			AV	VGN		

purposes. They are not settable parameters themselves.

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 8.7.1.1A.1.2.

#### 8.7.1.1A.1.4.2 Procedure

1) SS shall transmit MEASUREMENT CONTROL message.

- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check PCCPCH\_RSCP value in MEASUREMENT REPORT messages. PCCPCH\_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH\_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 8.7.1.1A.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 8.7.1.1A.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.

#### 8.7.1.1A.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1A.1.2 for at least 900 of the measurement reports at each input level in step 4.

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

#### 8.7.1.1A.2 Relative accuracy requirement for 1.28 Mcps TDD Option

#### 8.7.1.1A.2.1 Definition and applicability

The relative accuracy of PCCPCH RSCP is defined as the PCCPCH RSCP measured from one cell compared to the PCCPCH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA TDD UE 1.28 Mcps option.

#### 8.7.1.1A.2.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.1A.2.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P - CCPCH _E_c}{I_o}\right)_{in \ dB} \ge -8dB$$

$$\left. \left( \frac{DwPCH _{E_c}}{I_o} \right) \right|_{in \ dR} \ge -5dB$$

$$\left| P - CCPCH RSCP1 \right|_{in \ dB} - P - CCPCH RSCP2 \Big|_{in \ dB} \right| \le 20 dB$$

Relative Io difference [dB] \( \le \) relative RSCP difference [dB]

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

Table 8.7.1.1A.2.1: P-CCPCH\_RSCP intra-frequency relative accuracy

		Accurac	Conditions		
Parameter	Unit	Normal condition	Extreme condition	lo [dBm]	relative RSCP difference [dbB]
		±1	±1		<2
P-CCPCH_RSCP	dBm	±2	±2	-9450	214
_		±3	± 3		>14

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.2.1.1.1.

## 8.7.1.1A.2.3 Test Purpose

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

#### 8.7.1.1A.2.4 Method of test

#### 8.7.1.1A.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. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 5 and the UL DPCH shall be transmitted in timeslot 2. P-CCPCH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1A.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 8.7.1.1A.1.2.

#### 8.7.1.1A.2.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check PCCPCH\_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH 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 PCCPCH 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 8.7.1.1A.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 8.7.1.1A.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.

# 8.7.1.1A.2.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1A.2.2 for at least 900 of the measurement reports at each input level in step 4.

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

# 8.7.1.2 Inter frequency measurement accuracy for 3,84 Mcps TDD Option

## 8.7.1.2.1 Relative accuracy requirement

# 8.7.1.2.1.1 Definition and applicability

The P-CCPCH\_RSCP inter-frequency relative accuracy is defined as the P-CCPCH\_RSCP measured from one cell compared to the P-CCPCH\_RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA TDD UE.

### 8.7.1.2.1.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.2.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left| P - CCPCH RSCP1 \Big|_{in \ dB} - P - CCPCH RSCP2 \Big|_{in \ dB} \right| \le 20dB$$

$$\left( \frac{P - CCPCH _ E_c}{I_o} \right)_{in \ dB} \ge -8dB$$

$$\left( \frac{SCH _ E_c}{I_o} \right)_{in \ dB} \ge -13dB$$

Table 8.7.1.2.1.1 P-CCPCH\_RSCP inter-frequency relative accuracy

Parameter	Parameter Unit		Accuracy [dB]		
Parameter	Onit	Normal condition	Extreme condition	lo [dBm]	
P-CCPCH_RSCP	dBm	± 6	± 6	-9450	

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.

#### 8.7.1.2.1.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits for the inter frequency case.

## 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. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. P-CCPCH 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: P-CCPCH RSCP Intra frequency test parameters

Doromotor	Unit	Tes	st 1	Tes	st 2	Те	st 3
Parameter	Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/lor	dB	-	<u>1</u> 3	-3		-	·3
SCH_Ec/lor	dB	-	9	-	9	-	.9
SCH_t <sub>offset</sub>		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3,	12	-3,12		-3,12	
loc	dBm / 3.84 MHz	-75.2	-75.2	-57.8	-54.1	-98.7	-97
Îor/loc	dB	5	5	7	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.2	-73.2	-54.8	-55.1	-98.7	-100
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	

NOTE 1: PCCPCH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

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 PCCPCH\_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH 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 PCCPCH 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.

## 8.7.1.2.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2.1.2 for at least 900 of the measurement reports at each input level in step 4.

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

# 8.7.1.2A Inter frequency measurement accuracy for 1.28 Mcps TDD Option

# 8.7.1.2A.1 Relative accuracy requirement

#### 8.7.1.2A.1.1 Definition and applicability

The P-CCPCH\_RSCP inter-frequency relative accuracy is defined as the P-CCPCH\_RSCP measured from one cell compared to the P-CCPCH\_RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA TDD UE 1.28 Mcps option.

## 8.7.1.2A.1.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.2A.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left| P - CCPCH RSCP1 \right|_{in dB} - P - CCPCH RSCP2 \right|_{in dB} \le 20 dB$$

$$\left. \left( \frac{P - CCPCH _E_c}{I_o} \right) \right|_{in \ dB} \ge -8dB$$

$$\left. \left( \frac{DwPCH _E_c}{I_o} \right) \right|_{in \ dR} \ge -5dB$$

Table 8.7.1.2A.1.1 P-CCPCH\_RSCP inter-frequency relative accuracy

Parameter	Unit	Accur	Conditions	
Farameter	Oilit	Normal condition	Extreme condition	lo [dBm]
P-CCPCH_RSCP	dBm	± 6	± 6	-9450

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.2.1.

## 8.7.1.2A.1.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits for the inter frequency case.

# 8.7.1.2A.1.4 Method of test

# 8.7.1.2A.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. P-CCPCH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2A.1.2.

Table 8.7.1.2A.1.2: P-CCPCH RSCP Intra frequency test parameters

			Test 1		
Parameter	Unit	Ce			ell 2
Timeslot Number		0	DwPTS	0 DwPTS	
UTRA RF Channel		Chan	nel 1	Channel 2	
Number	dB	2		2	
PCCPCH_Ec/lor	dВ	-3	0	-3	0
DwPCH_Ec/lor OCNS_Ec/lor	dВ	-3	U	-3	U
$\hat{I}_{or}/I_{oc}$	dB		5	:	5
$I_{oc}$	dBm/ 1.28 MHz	-75	5.2	-7	5.2
PCCPCH RSCP, Note 1	dBm	-73.2		-73.2	
Io, Note 1	dBm/ 1.28 MHz		-6	69	
Propagation condition			AW	/GN	
00			Test 2		
Parameter	Unit	Се		Ce	ell 2
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel					•
Number		Channel 1		Char	nnel 2
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3		-3	
$\hat{I}_{or}/I_{oc}$	dB	7		2	
$I_{oc}$	dBm/ 1.28 MHz	-57.8		-54.1	
PCCPCH RSCP, Note 1	dBm	-53.8		-55.1	
Io, Note 1	dBm/ 1.28 MHz			50	
Propagation			AW	/GN	
condition			Test 3	_	
Parameter	Unit	Се		Ce	ell 2
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Chan			nnel 2
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0	-	0
OCNS_Ec/lor	dB	-3		-3	
$\hat{I}_{or}/I_{oc}$	dB	3	3		0
$I_{oc}$	dBm/ 1.28 MHz	-98.7		-9	97
PCCPCH RSCP, Note 1	dBm	-98.7		-100	
Io, Note 1	dBm/ 1.28 MHz		-6	94	
Propagation condition			AW	/GN	

purposes. They are not settable parameters themselves.

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 8.7.1.2A.1.2.

# 8.7.1.2A.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 PCCPCH\_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH 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 PCCPCH 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 8.7.1.2A.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.

### 8.7.1.2A.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2A.1.2 for at least 900 of the measurement reports at each input level in step 4.

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

# 8.7.2 CPICH measurements (FDD)

8.7.2.1 CPICH RSCP

Void

8.7.2.2 CPICH Ec/lo

Void

8.7.3 Timeslot ISCP

Void

8.7.4 UTRA carrier RSSI

Void

8.7.5 GSM carrier RSSI

Void

8.7.6 SIR

Void

8.7.7	Transport Channel BLER
<u>Void</u>	
8.7.8	SFN-SFN observed time difference
8.7.8.1	SFN-SFN observed time difference type 1
<u>Void</u>	
8.7.8.2	SFN-SFN observed time difference type 2
<u>Void</u>	
8.7.9	Observed time difference to GSM cell
<u>Void</u>	
8.7.10	UE GPS Timing of Cell Frames for UP
<u>Void</u>	
8.7.11	SFN-CFN observed time difference
<u>Void</u>	
8.7.12	UE transmitted power
<u>Void</u>	

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	0.0	TDD context.	0.0				9.1	
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Clauses affected:	Ж	8.7.1						
Other specs affected:	¥	X Test spe	ore specifications ecifications decifications	ons	₩			
Other comments:	$\mathbb{H}$	-						

# 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 TS 25.102 annex A. This measurement channel is used both in active cell and cells to be measured.
- Cell 1 is the active cell.
- Single task reporting.
- Power control is active.

# 8.7.1 P-CCPCH RSCP

# 8.7.1.1 Intra frequency measurement accuracy

# 8.7.1.1.1 Absolute accuracy requirement

# 8.7.1.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP meaasured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of UTRA TDD UE.

## 8.7.1.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.1.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P - CCPCH _{E_c}}{I_o}\right)_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH_{-}E_{c}}{I_{o}}\right)_{in\ dB} \ge -13dB$$

Table 8.7.1.1.1: P-CCPCH\_RSCP absolute accuracy

Parameter	Unit	Accura	Conditions	
raiailletei	Onit	Normal condition	Extreme condition	lo [dBm]
P-CCPCH RSCP	dBm	± 6	± 9	-9470
F-CCFCII_K3CF	dBm	± 8	± 11	-7050

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.1 and A.9.1.1.1.1.

#### 8.7.1.1.3 Test Purpose

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

#### 8.7.1.1.4 Method of test

#### 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. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Table 8.7.1.1.1.2: P-CCPCH RSCP lintra frequency test parameters

Parameter	Unit	Tes	st 1	Tes	st 2	Test 3	
raiailletei	Oilit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	0	0	0	0	0
UTRA RF Channel number		Char	nel 1	Char	nel 1	Char	nel 1
PCCPCH_Ec/lor	dB	-	3	-	3	-	3
SCH_Ec/lor	dB	-9		-9		-9	
SCH_t <sub>offset</sub>		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3,	12	-3,12		-3,12	
loc	dBm / 3.84 MHz	-7	5.7	-59.8		-98.7	
Îor/loc	dB	5	2	9	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.7	-76.7	-53.8	-60.8	-98.7	-101.7
Io, Note 1	dBm / 3.84 MHz	-69		-50		-6	94
Propagation condition		AW	'GN	AWGN		AWGN	

NOTE 1: PCCPCH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

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.

# 8.7.1.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check PCCPCH\_RSCP value in MEASUREMENT REPORT messages. PCCPCH\_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH\_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, steps 2) and 3) above is 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 2) and 3) above is are 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 I, with the following exceptions:

# MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
	<u>value/Remark</u>
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	$\left  \frac{0}{N} \right $
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	<u>1</u>
-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	Periodical reporting
-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)	<u>0</u>
-CHOICE mode	<u>0</u>   <u>TDD</u>
-Measurement quantity list	1 1
-Measurement quantity	Primary CCPCH RSCP
-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 synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	ITALOL
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
	FALSE
-Timeslot ISCP reporting indicator	
-Proposed TGSN reporting required	FALSE TRUE
-Primary CCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator -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	$\begin{bmatrix} \frac{1}{2} & \frac{1}{2} \end{bmatrix}$
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	<u>Infinity</u>
-Reporting interval	<u>250 ms</u>
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

# 8.7.1.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.1.2 for at least 900 of the measurement reports at each input level in step 4.

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

# 8.7.1.1.2 Relative accuracy requirement

# 8.7.1.1.2.1 Definition and applicability

The relative accuracy of PCCPCH RSCP is defined as the PCCPCH RSCP measured from one cell compared to the PCCPCH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA TDD UE.

#### 8.7.1.1.2.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P - CCPCH _E_c}{I_o}\right)_{in,dR} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)_{in\ dB} \ge -13dB$$

$$\left| P - CCPCH RSCP1 \right|_{in \ dB} - P - CCPCH RSCP2 \right|_{in \ dB} \le 20 dB$$

Relative Io difference [dB] \( \le \) relative RSCP difference [dB]

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

Table 8.7.1.1.2.1: P-CCPCH\_RSCP intra-frequency relative accuracy

		Accura	Conditions		
Parameter	Unit	Normal condition	Extreme condition	lo [dBm]	relative RSCP difference [dbB]
		±1	±1		<2
P-CCPCH_RSCP	dBm	±2	±2	-9450	214
_		±3	± 3		>14

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.1.1.

## 8.7.1.1.2.3 Test Purpose

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

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. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12.

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH 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 PCCPCH\_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH 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 PCCPCH 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 I, with the following exceptions:

MEASUREMENT CONTROL message for intra frequency measurement in clause 8.7.1.1.1.4.2 shall be used.

# 8.7.1.1.2.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.2.2 for at least 900 of the measurement reports at each input level in step 4.

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

# 8.7.1.2 Inter frequency measurement accuracy

## 8.7.1.2.1 Relative accuracy requirement

## 8.7.1.2.1.1 Definition and applicability

The P-CCPCH\_RSCP inter-frequency relative accuracy is defined as the P-CCPCH\_RSCP measured from one cell compared to the P-CCPCH\_RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA TDD UE.

# 8.7.1.2.1.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.2.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left| P - CCPCH RSCP1 \right|_{in dB} - P - CCPCH RSCP2 \right|_{in dB} \le 20 dB$$

$$\left(\frac{P - CCPCH _{E_c}}{I_o}\right)_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)_{in\ dB} \ge -13dB$$

Table 8.7.1.2.1.1: P-CCPCH\_RSCP inter-frequency relative accuracy

Parameter	Unit	Accura	Conditions	
Farameter	Oilit	Normal condition	Extreme condition	lo [dBm]
P-CCPCH_RSCP	dBm	± 6	± 6	-9450

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.

## 8.7.1.2.1.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits for the inter frequency case.

# 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. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. P-CCPCH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2.1.2.

Test 1 Test 2 Test 3 **Parameter** Unit Cell 2 Cell 1 Cell 1 Cell 2 Cell 1 Cell 2 DL timeslot number 0 n 0 2 **UTRA RF Channel** Channel 1 Channel 2 Channel 1 Channel 2 Channel 1 Channel 2 number PCCPCH\_Ec/lor dB -3 -3 SCH\_Ec/lor dΒ -9 -9 -9  $SCH\_t_{\text{offset}}$ 0 5 0 5 0 5 OCNS\_Ec/lor dB -3.12 -3.12 -3.12 dBm / -75.2 -75.2 -57.8 -54.1 -98.7 -97 loc 3.84 MHz Îor/loc 5 5 2 3 0 dB 7 PCCPCH RSCP. dBm -73.2 -73.2-54.8 -55.1 -98.7 -100 Note 1 dBm / Io. Note 1 -69 -50 -94 3.84 MHz Propagation **AWGN AWGN AWGN** condition

Table 8.7.1.2.1.2: P-CCPCH RSCP inter lintra frequency test parameters

NOTE 1: PCCPCH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

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.
- 31)SS shall transmit MEASUREMENT CONTROL message.
- 42) UE shall transmit periodically MEASUREMENT REPORT messages <u>for intra frequency and inter frequency measurements.</u>
- 53) SS shall check PCCPCH\_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 64) The result of step 5) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.
- 75) 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 53 and 64 above are repeated.
- 86) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 97) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

## **Specific Message Contents**

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

# First MEASUREMENT CONTROL message for intra frequency measurements (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	<u>value/Nemark</u>
UE information elements	
-RRC transaction identifier	O Not Droppet
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1 Modify
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM DI 0
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	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)	<u>0</u> TDD
-CHOICE mode	TDD
-Measurement quantity list	<u>1</u>
-Measurement quantity	Primary CCPCH RSCP
-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 synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	TION TOOM
-CHOICE reported cell	Report all active set cells + cells within
STISTOL TOPOITOG GOII	monitored set on used frequency
-Maximum number of reported cells	
-Measurement validity (10.3.7.51)	1 Not Present
-CHOICE report criteria (10.3.7.	NOCE TOOCHE
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Amount or reporting -Reporting interval	250 ms
	200 1115
Physical channel information elements	Not Dropout
-DPCH compressed mode status info (10.3.6.34)	Not Present

# Second MEASUREMENT CONTROL message for inter frequency measurements (Step 1): /

Information Element/Group name	Value/Remark
Message Type (10.2.17)	Talagricon and
UE information elements	+
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	NOT FESCH
-Measurement Identity	
-Measurement Command (10.3.7.46)	2 Setup
-Measurement Reporting Mode (10.3.7.49)	Setup
-Measurement Reporting Mode (10.3.7.49)  -Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-Additional measurement sist (10.3.7.1) -CHOICE Measurement type	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	Inter-nequency measurement
-Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13)	
-ther-frequency measurement objects list (10.3.7.13) -CHOICE inter-frequency cell removal	Not present
-New inter-frequency cells	Cell 2 information is included
-New Inter-frequency cells -Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	NOUT TESETIL
-CHOICE reporting critera	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	Thirdly our critice.
-UTRA carrier RSSI	FALSE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	INOL
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-Cell identity reporting indicator -CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Proposed TGSN Reporting required -Primary CCPCH RSCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	FALSE
-Reporting cell status (10.3.7.61) -CHOICE reported cell	Report all active set cells + cells within
-CHOICE reponed cell	monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Maximum number of reported cells -Measurement validity (10.3.7.51)	Not present
-inter-frequency set update	Not present
-CHOICE report criteria (10.3.7.	Not present
-CHOICE report criteria (10.3.7Periodical reporting criteria (10.3.7.53)	
	Infinite
-Amount of reporting	Infinity 500 ms
-Reporting interval	500 ms
Physical channel information elements	10.00
-DPCH compressed mode status info (10.3.6.34)	Not Present

# 8.7.1.2.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2.1.2 for at least 900 of the measurement reports at each input level in step 4.

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

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

		CHANG	GE REQ	UEST		CR-Form-v7
*	34.	.122 CR 159	жrev	<b>-</b> #	Current vers	ion: <b>4.6.0</b> *
For <u>HELP</u> on u	sing t	this form, see bottom of	this page or l	look at the	e pop-up text	over the ₩ symbols.
Proposed change	affect	ts: UICC apps第	MEX	Radio A	ccess Networ	k Core Network
Title: ₩		rrections to P-CCPCH F D (3.84 Mcps Option)	RSCP Measur	rement Pe	erformance R	equirements for UTRA
Source: 第	T1-	RF				
Work item code: 第					Date: ♯	13/01/2003
Category:	Detai	one of the following categor F (correction) A (corresponds to a corresponds to a corresponds to a corresponds to a correspond feature), C (functional modification) I (editorial modification)	ection in an ear		2 R96 R97 R98 R99	Rel-4 the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)
Reason for change	e: #	Test-specific RRC me CCPCH RSCP measu Mcps Option) are mis PHYSICAL CHANNE	urement perfo sing from the	rmance r current v	equirements i ersion of TS 3	in UTRA TDD (3.84 34.122.
						test because not used
Summary of chang	ge: ૠ	Introduction of test-sp CONTROL for the P-0 UTRA TDD (3.84 Mcp	CCPCH RSCI			EASURMENT mance requirements in
						om test procedure step et because not used in
Consequences if not approved:	Ж	P-CCPCH RSCP mea	asurement pe	rformance	e test not feas	sible.
Clauses affected:	¥	8.7.1				
Other specs affected:	¥	Y N X Other core specification X O&M Specification	ons	*		
Other comments:	$\mathbb{H}$	-				

# 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 TS 25.102 annex A. This measurement channel is used both in active cell and cells to be measured.

- Cell 1 is the active cell.
- Single task reporting.
- Power control is active.

# 8.7.1 P-CCPCH RSCP

# 8.7.1.1 Intra frequency measurement accuracy for 3,84 Mcps TDD Option

## 8.7.1.1.1 Absolute accuracy requirement

# 8.7.1.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP measured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of UTRA TDD UE.

# 8.7.1.1.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.1.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P - CCPCH _E_c}{I_o}\right)_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)_{in_c dR} \ge -13dB$$

Table 8.7.1.1.1: P-CCPCH\_RSCP absolute accuracy

Parameter	Unit	Accura	Conditions	
raiailletei	Onit	Normal condition	Extreme condition	lo [dBm]
P-CCPCH RSCP	dBm	± 6	± 9	-9470
F-CCFCII_NGCF	dBm	± 8	± 11	-7050

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.1 and A.9.1.1.1.1.

#### 8.7.1.1.3 Test Purpose

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

#### 8.7.1.1.4 Method of test

#### 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. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Table 8.7.1.1.1.2: P-CCPCH RSCP Lintra frequency test parameters

Parameter	Unit	Tes	st 1	Tes	st 2	Tes	st 3
raiailletei	Oilit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	0	0	0	0	0
UTRA RF Channel number		Char	nel 1	Char	nel 1	Char	nel 1
PCCPCH_Ec/lor	dB	-	3	-	3	-	3
SCH_Ec/lor	dB	-9		-9		-9	
SCH_t <sub>offset</sub>		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3,	12	-3,12		-3,	12
loc	dBm / 3.84 MHz	-7	5.7	-59.8		-98	3.7
Îor/loc	dB	5	2	9	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.7	-76.7	-53.8	-60.8	-98.7	-101.7
Io, Note 1	dBm / 3.84 MHz	-69		-5	50	-6	94
Propagation condition		AW	'GN	AW	'GN	AW	'GN

NOTE 1: PCCPCH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

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.

# 8.7.1.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check PCCPCH\_RSCP value in MEASUREMENT REPORT messages. PCCPCH\_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH\_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, steps 2) and 3) above is 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 2) and 3) above is are 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 I, with the following exceptions:

# MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
	<u>value/Remark</u>
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	$\left  \frac{0}{N} \right $
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	<u>1</u>
-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	Periodical reporting
-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)	<u>0</u>
-CHOICE mode	<u>0</u>   <u>TDD</u>
-Measurement quantity list	1 1
-Measurement quantity	Primary CCPCH RSCP
-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 synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	ITALOL
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
	FALSE
-Timeslot ISCP reporting indicator	
-Proposed TGSN reporting required	FALSE TRUE
-Primary CCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator -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	$\begin{bmatrix} \frac{1}{2} & \frac{1}{2} \end{bmatrix}$
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	<u>Infinity</u>
-Reporting interval	<u>250 ms</u>
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

## 8.7.1.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.1.2 for at least 900 of the measurement reports at each input level in step 4.

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

# 8.7.1.1.2 Relative accuracy requirement for 3,84 Mcps TDD Option

### 8.7.1.1.2.1 Definition and applicability

The relative accuracy of PCCPCH RSCP is defined as the PCCPCH RSCP measured from one cell compared to the PCCPCH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA TDD UE.

#### 8.7.1.1.2.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P - CCPCH _{E_c}}{I_o}\right)_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)_{in\ dB} \ge -13dB$$

$$\left| P - CCPCH RSCP1 \right|_{in \ dB} - P - CCPCH RSCP2 \right|_{in \ dB} \le 20 dB$$

Relative Io difference [dB] \( \le \) relative RSCP difference [dB]

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

Table 8.7.1.1.2.1: P-CCPCH\_RSCP intra-frequency relative accuracy

	Accuracy [dB]			Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm]	relative RSCP difference [dbB]
		±1	±1		<2
P-CCPCH_RSCP	dBm	<u>+2</u>	±2	-9450	214
		±3	± 3		>14

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.1.1.

## 8.7.1.1.2.3 Test Purpose

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

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. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12.

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH 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 PCCPCH\_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH 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 PCCPCH 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 I, with the following exceptions:

MEASUREMENT CONTROL message for intra frequency measurement in clause 8.7.1.1.1.4.2 shall be used.

# 8.7.1.1.2.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.2.2 for at least 900 of the measurement reports at each input level in step 4.

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

# 8.7.1.1A Intra frequency measurement accuracy for 1.28 Mcps TDD Option

## 8.7.1.1A.1 Absolute accuracy requirement

#### 8.7.1.1A.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP measured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of UTRA TDD UE 1.28 Mcps option.

## 8.7.1.1A.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.1.1A.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left. \left( \frac{P - CCPCH _{E_c}}{I_o} \right) \right|_{in \ dB} \ge -8dB$$

$$\left. \left( \frac{DwPCH _{E_c}}{I_o} \right) \right|_{in \ dR} \ge -5dB$$

Table 8.7.1.1A.1.1: P-CCPCH\_RSCP absolute accuracy

Parameter	Unit	Accura	Conditions	
Farameter	Oill	Normal condition	Extreme condition	lo [dBm]
P-CCPCH RSCP	dBm	± 6	± 9	-9470
F-CCFCH_R3CF	dBm	± 8	± 11	-7050

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.1 and A.9.2.1.1.1.

## 8.7.1.1A.1.3 Test Purpose

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

#### 8.7.1.1A.1.4 Method of test

## 8.7.1.1A.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. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 5 and the UL DPCH shall be transmitted in timeslot 2. P-CCPCH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1A.1.2.

Table 8.7.1.1A.1.2: P-CCPCH RSCP Intra frequency test parameters

			Test 1	T	
Parameter	Unit		11 1		ell 2
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel		Char	nnel 1	Channel 1	
Number					1
PCCPCH_Ec/lor	dB	-3	0	-3	
DwPCH_Ec/lor	dB		0	0	0
OCNS_Ec/lor	dB	-3		-3	
$\hat{I}_{or}/I_{oc}$	dB		5		2
$I_{oc}$	dBm/ 1.28 MHz		-7	<b>7</b> 6.6	_
PCCPCH RSCP, Note 1	dBm	-74.6		-77.6	
Io, Note 1	dBm/ 1.28 MHz		-	69	
Propagation condition			AV	VGN	
- CONTRACTOR	1		Test 2		
Parameter	Unit	Ce	II 1	Ce	ell 2
Timeslot Number	J	0	DwPTS	0	DwPTS
UTRA RF Channel					•
Number		Channel 1		Cha	nnel 1
PCCPCH_Ec/lor	dB	-3		-3	
DwPCH_Ec/lor	dB		0		0
OCNS_Ec/lor	dB	-3	-	-3	-
$\hat{I}_{or}/I_{oc}$	dB	9 2			
$I_{oc}$	dBm/ 1.28 MHz		-6	60.2	
PCCPCH RSCP, Note 1	dBm	-54.2		-61.2	
lo, Note 1	dBm/ 1.28 MHz		-	50	l
Propagation			۸۱۸	VGN	
condition			Test 3	v OI v	
Parameter	Unit	Ce	II 1	Ce	ell 2
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel			nnel 1		nnel 1
Number	4D	2			T
PCCPCH_Ec/lor DwPCH_Ec/lor	dB	-3	0	-3	1
OCNS_Ec/lor	dB dB	-3	0	-3	0
$\hat{I}_{or}/I_{oc}$	dВ		 5		3
or / Loc		•			
$I_{oc}$	dBm/ 1.28 MHz		-10	01.9	
PCCPCH RSCP, Note 1	dBm	-99.9		-101.9	
lo, Note 1	dBm/ 1.28 MHz			94	
Propagation condition			AV	VGN	

purposes. They are not settable parameters themselves.

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 8.7.1.1A.1.2.

# 8.7.1.1A.1.4.2 Procedure

1) SS shall transmit MEASUREMENT CONTROL message.

- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check PCCPCH\_RSCP value in MEASUREMENT REPORT messages. PCCPCH\_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH\_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 8.7.1.1A.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 8.7.1.1A.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.

#### 8.7.1.1A.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1A.1.2 for at least 900 of the measurement reports at each input level in step 4.

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

# 8.7.1.1A.2 Relative accuracy requirement for 1.28 Mcps TDD Option

#### 8.7.1.1A.2.1 Definition and applicability

The relative accuracy of PCCPCH RSCP is defined as the PCCPCH RSCP measured from one cell compared to the PCCPCH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA TDD UE 1.28 Mcps option.

## 8.7.1.1A.2.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.1A.2.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P - CCPCH _E_c}{I_o}\right)_{in \ dR} \ge -8dB$$

$$\left. \left( \frac{DwPCH _{E_c}}{I_o} \right) \right|_{in \ dR} \ge -5dB$$

$$\left| P - CCPCH RSCP1 \right|_{in \ dB} - P - CCPCH RSCP2 \Big|_{in \ dB} \right| \le 20 dB$$

Relative Io difference [dB] \( \le \) relative RSCP difference [dB]

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

Table 8.7.1.1A.2.1: P-CCPCH\_RSCP intra-frequency relative accuracy

		Accuracy [dB]			Accuracy [dB] Conditions		onditions
Parameter	Unit	Normal condition Extreme condition		lo [dBm]	relative RSCP difference [dbB]		
		±1	±1		<2		
P-CCPCH_RSCP	dBm	±2	±2	-9450	214		
		±3	± 3		>14		

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.2.1.1.1.

## 8.7.1.1A.2.3 Test Purpose

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

#### 8.7.1.1A.2.4 Method of test

#### 8.7.1.1A.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. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 5 and the UL DPCH shall be transmitted in timeslot 2. P-CCPCH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1A.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 8.7.1.1A.1.2.

#### 8.7.1.1A.2.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) SS shall check PCCPCH\_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH 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 PCCPCH 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 8.7.1.1A.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 8.7.1.1A.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.

## 8.7.1.1A.2.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1A.2.2 for at least 900 of the measurement reports at each input level in step 4.

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

# 8.7.1.2 Inter frequency measurement accuracy for 3,84 Mcps TDD Option

## 8.7.1.2.1 Relative accuracy requirement

# 8.7.1.2.1.1 Definition and applicability

The P-CCPCH\_RSCP inter-frequency relative accuracy is defined as the P-CCPCH\_RSCP measured from one cell compared to the P-CCPCH\_RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA TDD UE.

#### 8.7.1.2.1.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.2.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left| P - CCPCH RSCP1 \right|_{in dB} - P - CCPCH RSCP2 \Big|_{in dB} \right| \le 20 dB$$

$$\left( \frac{P - CCPCH - E_c}{I_o} \right)_{in dB} \ge -8 dB$$

$$\left( \frac{SCH - E_c}{I_o} \right) > 12 dB$$

$$\left. \left( \frac{SCH - E_c}{I_o} \right) \right|_{in \ dB} \ge -13dB$$

Table 8.7.1.2.1.1 P-CCPCH\_RSCP inter-frequency relative accuracy

Parameter	l Init	Accura	Conditions	
Parameter	Unit	Normal condition Extreme condition		lo [dBm]
P-CCPCH_RSCP	dBm	± 6	± 6	-9450

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.

#### 8.7.1.2.1.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits for the inter frequency case.

## 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. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. P-CCPCH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2.1.2.

Parameter	Unit	Test 1		Tes	st 2	Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/lor	dB	-3		-	3	-3	
SCH_Ec/lor	dB	-9		-	9	-9	
SCH_t <sub>offset</sub>		0	5	0	5	0	5
OCNS_Ec/lor	dB	-3,12		-3,12		-3,12	
loc	dBm / 3.84 MHz	-75.2	-75.2	-57.8	-54.1	-98.7	-97
Îor/loc	dB	5	5	7	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.2	-73.2	-54.8	-55.1	-98.7	-100
Io, Note 1	dBm / 3.84 MHz	-69		-5	50	-94	
Propagation condition		AWGN		AWGN		AWGN	

NOTE 1: PCCPCH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

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.
- 31)SS shall transmit the MEASUREMENT CONTROL messages for intra frequency and inter frequency measurements.
- 42) UE shall transmit periodically MEASUREMENT REPORT messages.
- 53) SS shall check PCCPCH\_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 64) The result of step 5) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.
- 75) 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 53) and 64) above are repeated.
- 86) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 97) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

### **Specific Message Contents**

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

# First MEASUREMENT CONTROL message for intra frequency measurements (Step 1):

Information Element/Group name	Value/Remark
	<u>value/Remark</u>
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	$\frac{0}{2}$
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1 Modify
-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	Periodical reporting
-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)	<u>0</u>
-CHOICE mode	<u>0</u>   <u>TDD</u>
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH RSCP
-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 synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	IALOL
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode Timeslet ISCR reporting indicator	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	<u>1</u>
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	<u>Infinity</u>
-Reporting interval	<u>250 ms</u>
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

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# Second MEASUREMENT CONTROL message for inter frequency measurements (Step 1):

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	2
-Measurement Command (10.3.7.46)	2 Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE inter-frequency cell removal	Not present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
CHOICE reporting critera	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	<u>0</u>
-CHOICE mode	<u>TDD</u>
<ul> <li>-Measurement quantity for frequency quality estimate</li> </ul>	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
<u>-UTRA carrier RSSI</u>	<u>FALSE</u>
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-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	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not present
-Inter-frequency set update	Not present
-CHOICE report criteria (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	<u>Infinity</u>
-Reporting interval	<u>500 ms</u>
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

# 8.7.1.2.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2.1.2 for at least 900 of the measurement reports at each input level in step 4.

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

# 8.7.1.2A Inter frequency measurement accuracy for 1.28 Mcps TDD Option

## 8.7.1.2A.1 Relative accuracy requirement

## 8.7.1.2A.1.1 Definition and applicability

The P-CCPCH\_RSCP inter-frequency relative accuracy is defined as the P-CCPCH\_RSCP measured from one cell compared to the P-CCPCH\_RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA TDD UE 1.28 Mcps option.

# 8.7.1.2A.1.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.2A.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left| P - CCPCH RSCP1 \right|_{in dB} - P - CCPCH RSCP2 \Big|_{in dB} \right| \le 20dB$$

$$\left( \frac{P - CCPCH - E_c}{I_o} \right) \Big|_{in dB} \ge -8dB$$

$$\left( \frac{DwPCH - E_c}{I_o} \right) \Big|_{in dB} \ge -5dB$$

Table 8.7.1.2A.1.1 P-CCPCH\_RSCP inter-frequency relative accuracy

Parameter	l Init	Accura	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm]
P-CCPCH_RSCP	dBm	± 6	± 6	-9450

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

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.2.1.

#### 8.7.1.2A.1.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits for the inter frequency case.

# 8.7.1.2A.1.4 Method of test

## 8.7.1.2A.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. P-CCPCH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2A.1.2.

Table 8.7.1.2A.1.2: P-CCPCH RSCP Intra frequency test parameters

			Test 1			
Parameter	Unit	Cell 1		Cell 2		
Timeslot Number		0 DwPTS		0 DwPTS		
UTRA RF Channel		Channel 1		Channel 2		
Number	dB	2		2		
PCCPCH_Ec/lor DwPCH_Ec/lor	dВ	-3	0	-3	0	
OCNS_Ec/lor	dВ	-3	U	-3	U	
$\hat{I}_{or}/I_{oc}$	dB		5	5		
$I_{oc}$	dBm/ 1.28 MHz	-75	5.2	-75.2		
PCCPCH RSCP, Note 1	dBm	-73.2		-73.2		
Io, Note 1	dBm/ 1.28 MHz	-69				
Propagation condition		AWGN				
			Test 2			
Parameter	Unit	Ce		Cell 2		
Timeslot Number		0	DwPTS	0	DwPTS	
UTRA RF Channel		U			•	
Number		Char	inel 1	Channel 2		
PCCPCH_Ec/lor	dB	-3		-3		
DwPCH_Ec/lor	dB		0		0	
OCNS_Ec/lor	dB	-3		-3		
$\hat{I}_{or}/I_{oc}$	dB	7		2		
$I_{oc}$	dBm/ 1.28 MHz	-57.8		-54.1		
PCCPCH RSCP, Note 1	dBm	-53.8		-55.1		
Io, Note 1	dBm/ 1.28 MHz	-50				
Propagation		AWGN				
condition		Test 3				
Parameter	Unit	Ce		Cell 2		
Timeslot Number		0	DwPTS	0	DwPTS	
UTRA RF Channel Number		Char		Channel 2		
PCCPCH_Ec/lor	dB	-3		-3		
DwPCH_Ec/lor	dB		0		0	
OCNS_Ec/lor	dB	-3		-3		
$\hat{I}_{or}/I_{oc}$	dB	3		0		
$I_{oc}$	dBm/ 1.28 MHz	-98.7		-97		
PCCPCH RSCP, Note 1	dBm	-98.7		-100		
Io, Note 1	dBm/ 1.28 MHz	-94				
Propagation condition			AW	/GN		

NOTE 1: PCCPCH RSCP and to levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

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 8.7.1.2A.1.2.

# 8.7.1.2A.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 PCCPCH\_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH 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 PCCPCH 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 8.7.1.2A.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.

#### 8.7.1.2A.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2A.1.2 for at least 900 of the measurement reports at each input level in step 4.

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

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

CHANGE REQUEST								
<b>3</b>	4.122	CR <mark>160</mark>	жrev	-	₩ C	Current vers	3.10.0	<b></b>
For <u>HELP</u> on using	g this form	n, see bottom	of this page or	look at	t the p	pop-up text	over the 光 sym	bols.
Proposed change affects: UICC apps# ME X Radio Access Network Core Network								
Title: # S	tatistical	testing of RRM	1 delay perform	ance i	n Anr	nex F.6.2 fo	r UTRA TDD	
Source: 第 T	1-RF							
Work item code: ₩						Date: ₩	13/01/2003	
De	F (corre A (corre B (addi C (func D (edito tailed expl	esponds to a co tion of feature), tional modification orial modification	rrection in an ea on of feature) n) above categorie			Release: # Use <u>one</u> of 2 R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	R99 the following release (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)	ases:
Reason for change: 9	simple						would only allow ce levels, as req	
			atistical testing es adapted for				o be updated ac	cording
Summary of change: 8	FDD i	n T1R-020332		for UT			s adapted for UT ide RRM delay to	
Consequences if not approved:	€ The q	uality of RRM	delay tests is u	ınknow	n.			
Clauses affected:	€ F.6.2							
Other specs 3 affected:	X	Other core sports of the Core	tions	X				
Other comments:	€ -							

## F.6.2 Statistical testing of RRM delay performance

Delay tests in subclause 8.2 shall be repeated [50] times in order to determine the required success ratio

Note: A statistical approach needs to be developed. The number of repetitions required for the test will target towards a good compromise between test time and wrong decision risk.

#### F.6.2.1 Test Method

Each test is performed in the following manner:

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

a good delay, if the measured delay is  $\leq$  limit. a bad delay, if the measured delay is > limit

- c) Record the number of delays (ns), tested, and the number of bad delays (ne)
- d) Stop the test at an early pass or an early fail event.
- e) Once the test is stopped, decide according to the pass fail decision rules (subclause F.6.2.7)

### F.6.2.2 Bad Delay Ratio (ER)

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

#### F.6.2.3 Test Criteria

The test shall fulfil the following requirements:

- a) good pass fail decision
  - 1) to keep reasonably low the probability (risk) of passing a bad unit for each individual test;
  - 2) to have high probability of passing a good unit for each individual test;
- b) good balance between test-time and statistical significance
  - 3) to perform measurements with a high degree of statistical significance;
  - 4) to keep the test time as low as possible.

## F.6.2.4 Calculation assumptions

#### F.6.2.4.1 Statistical independence

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

#### F.6.2.4.2 Applied formulas

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

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

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

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

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

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

(NE: mean value of the distribution)

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

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

D: wrong decision risk per test step

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

#### F.6.2.4.3 Approximation of the distribution

The test procedure is as follows:

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

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

#### F.6.2.5 Definition of good pass fail decision.

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

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

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

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

Early fail: er≥ er**lim**<sub>fail</sub>

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

For ne  $\geq$  [5],

Early pass:  $er \le er$ **lim**bad<sub>pass</sub>

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

For ne  $\geq 1$ ,

With,

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

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

ne: Number of bad delays

M: bad DUT factor see table F.6.2.6.1

gchisq: inverse cumulative chi squared distribution

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

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

Table F.6.2.6: Independent and dependent test parameters

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

## F.6.2.7 Pass fail decision rules

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

ER<sub>1</sub> (including the artificial error at the beginning of the test (Note 1))and

ER<sub>0</sub> (excluding the artificial error at the beginning of the test (Note 1)).

If ER<sub>0</sub> is on or above the early fail limit, fail the DUT.

If ER<sub>1</sub> is on or below the early pass limit, pass the DUT.

Otherwise continue the test.

## F.6.2.8 Test conditions for RRM delay tests

Table F.6.2.8: Test conditions for a single RRM delay tests

Type of test	Test	Test	Testlimit(ER)	Target	Prob that	Bad unit
	requirement Delay (s)	requirement (ER)	= Test requirement (ER)x TL TL	number of bad delays	good unit will  fail Prob that bad unit will  pass [%]	factor M
A.4.2.18.2.2.1 TDD/TDD Cell re-selection in Idle mode (single carrier)	8	0.1	[1.236]	[154]	[5]	[1.5]
A.4.2.28.2.2.2 TDD/TDD Cell re-selection in Idle Mode (mulit- carrier)	<u>8</u>	<u>0.1</u>	[1.236]	[154]	[5]	[1.5]
A.4.2.38.2.2.3 TDD/FDD Cell re-selection in Idle Mode	<u>8</u>					
A.4.2.48.2.2.4 UTRAN to GSM cell re-selection in Idle Mode	<u>27.9</u>	<u>0.1</u>	[1.236]	[154]	<u>[5]</u>	[1.5]
A.5.18.3.1 TDD/TDD handover	<u>40 ms</u>	<u>0.1</u>	[1.236]	[154]	<u>[5]</u>	[1.5]
A.5.28.3.2 TDD/FDD handover	<u>100 ms</u>	<u>0.1</u>	[1.236]	[154]	<u>[5]</u>	[1.5]
A.5.38.3.3 TDD/GSM handover	<u>40ms</u>	0.1	[1.236]	[154]	[5]	[1.5]
A.5.4.18.3.4 TDD/TDD Cell Re-selection in CELL_FACH	<u>2.5</u>	0.1	[1.236]	[154]	[5]	[1.5]
A.5.58.3.5 TDD/TDD Cell Re-selection in CELL PCH	8	<u>0.1</u>	[1.236]	[154]	[5]	[1.5]
A.5.68.3.6 TDD/TDD Cell Re-selection in URA PCH	<u>8</u>	<u>0.1</u>	[1.236]	[154]	<u>[5]</u>	[1.5]

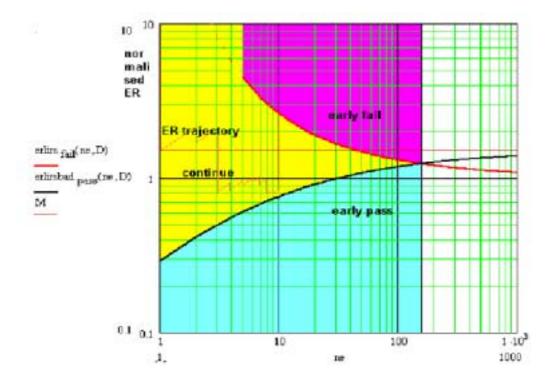
## F.6.2.9 Practical Use (informative)

See figure F.6.2.9:

The early fail limit represents formula (1) in F.6.2.5. The range of validity is  $[ne \ge 5]$  to [ne = 154]

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

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



#### **Figure F.6.2.9**

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

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

# 3GPP TSG-T1 Meeting #18 San Antonio, Texas, USA, February 10<sup>th</sup>-14<sup>th</sup> 2003

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# F.6.2 Statistical testing of RRM delay performance (3.84 Mcps TDD option)

#### F.6.2.1 Test Method

Each test is performed in the following manner:

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

a good delay, if the measured delay is  $\leq$  limit. a bad delay, if the measured delay is > limit

- c) Record the number of delays (ns), tested, and the number of bad delays (ne)
- d) Stop the test at an early pass or an early fail event.
- e) Once the test is stopped, decide according to the pass fail decision rules (subclause F.6.2.7)

#### F.6.2.2 Bad Delay Ratio (ER)

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

#### F.6.2.3 Test Criteria

The test shall fulfil the following requirements:

- a) good pass fail decision
  - 1) to keep reasonably low the probability (risk) of passing a bad unit for each individual test;
  - 2) to have high probability of passing a good unit for each individual test;
- b) good balance between test-time and statistical significance
  - 3) to perform measurements with a high degree of statistical significance;
  - 4) to keep the test time as low as possible.

#### F.6.2.4 Calculation assumptions

## F.6.2.4.1 Statistical independence

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

## F.6.2.4.2 Applied formulas

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

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

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

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

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

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

(NE: mean value of the distribution)

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

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

D: wrong decision risk per test step

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

#### F.6.2.4.3 Approximation of the distribution

The test procedure is as follows:

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

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

## F.6.2.5 Definition of good pass fail decision.

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

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

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

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

Early fail: er≥ erlim<sub>fail</sub>

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

For ne  $\geq$  [5],

Early pass:  $er \le erlimbad_{pass}$ 

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

For ne  $\geq 1$ ,

With.

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

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

ne: Number of bad delays

M: bad DUT factor see table F.6.2.6.1

qchisq: inverse cumulative chi squared distribution

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

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

Table F.6.2.6: Independent and dependent test parameters

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

#### F.6.2.7 Pass fail decision rules

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

ER<sub>1</sub> (including the artificial error at the beginning of the test (Note 1))and

ER<sub>0</sub> (excluding the artificial error at the beginning of the test (Note 1)).

If ER<sub>0</sub> is on or above the early fail limit, fail the DUT.

If ER<sub>1</sub> is on or below the early pass limit, pass the DUT.

Otherwise continue the test.

## F.6.2.8 Test conditions for RRM delay tests

Table F.6.2.8: Test conditions for a single RRM delay tests

Type of test	Test requirement	<u>Test</u> requirement	Testlimit(ER)	Target number of	Prob that	Bad unit factor M
	Delay (s)	(ER)	Test requirement (ER)x TL TL	bad delays	fail = Prob that bad unit will pass [%]	- <del></del>
A.4.2.18.2.2.1 TDD/TDD Cell re-selection in Idle mode (single carrier)	8	<u>0.1</u>	[1.236]	[154]	[5]	[1.5]
A.4.2.28.2.2.2 TDD/TDD Cell re-selection in Idle Mode (mulit- carrier)	<u>8</u>	<u>0.1</u>	[1.236]	[154]	[5]	[1.5]
A.4.2.38.2.2.3 TDD/FDD Cell re-selection in Idle Mode	<u>8</u>					
A.4.2.48.2.2.4 UTRAN to GSM cell re-selection in Idle Mode	<u>27.9</u>	<u>0.1</u>	[1.236]	[154]	[5]	[1.5]
A.5.18.3.1 TDD/TDD handover	<u>40 ms</u>	0.1	[1.236]	[154]	[5]	[1.5]
A.5.28.3.2 TDD/FDD handover	<u>100 ms</u>	<u>0.1</u>	[1.236]	[154]	<u>[5]</u>	[1.5]
A.5.38.3.3 TDD/GSM handover	<u>40ms</u>	0.1	[1.236]	[154]	[5]	[1.5]
A.5.4.18.3.4 TDD/TDD Cell Re-selection in CELL_FACH	2.5	<u>0.1</u>	[1.236]	[154]	<u>[5]</u>	[1.5]
A.5.58.3.5 TDD/TDD Cell Re-selection in CELL PCH	8	<u>0.1</u>	[1.236]	[154]	<u>[5]</u>	[1.5]
A.5.68.3.6 TDD/TDD Cell Re-selection in URA PCH	<u>8</u>	<u>0.1</u>	[1.236]	[154]	[5]	[1.5]

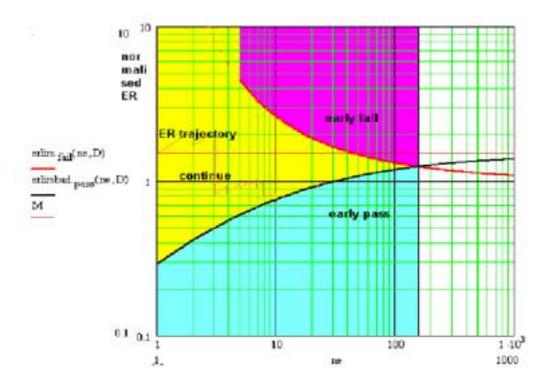
## F.6.2.9 Practical Use (informative)

See figure F.6.2.9:

The early fail limit represents formula (1) in F.6.2.5. The range of validity is  $[ne \ge 5]$  to [ne = 154]

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

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



#### **Figure F.6.2.9**

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

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

# F.6.2A Statistical testing of RRM delay performance (1.28 Mcps TDD option)

Delay tests in subclause 8.2 shall be repeated [50] times in order to determine the required success ratio

Note: A statistical approach needs to be developed. The number of repetitions required for the test will target towards a good compromise between test time and wrong decision risk.

# 3GPP TSG -T1RF Meeting 28 San Antonio, TX, USA 10<sup>th</sup> to 14<sup>th</sup> February 2003

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#### How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <a href="http://www.3gpp.org/specs/CR.htm">http://www.3gpp.org/specs/CR.htm</a>. 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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 the clause containing the first piece of changed text. De the change request.	(use CTRL-A to select it) into the specification just in front of elete those parts of the specification which are not relevant to

## 8.6 UE Measurements Procedures

## 8.6.1 TDD intra frequency measurements

8.6.1.1 Event triggered reporting in AWGN propagation conditions

Void. 8.6.1.1 Event 1G triggered reporting in AWGN propagation conditions

8.6.1.1.1Definition and Applicability

8.6.1.1.1.1 3.84 Mcps TDD option

**FFS** 

8.6.1.1.2 1.28 Mcps TDD option

The purpose of this test is to verify that the UE makes correct reporting of event 1G (Change of best TDD cell). This test will partly verify the requirements in [2].

8.6.1.1.2 Minimum requirement

8.6.1.1.2.1 3.84 Mcps TDD option

**FFS** 

8.6.1.1.2.2 1.28 Mcps TDD option

The UE shall be able to identify a new inrra frequency TDD cell belonging to the monitored set, meeting the following timings.

The UE shall send one Event 1G triggered measurement report for cell 2, with a measurement reporting delay less than 200 ms from the beginning of time period T2 as defined in the test method below.

The UE shall send one Event 1G triggered measurement report for Cell 3 with a measurement reporting delay less than 800ms from the beginning of time period T3 as defined in the test method below.

<u>8.6.1.1.3</u> Test Purpose

8.6.1.1.3.1 3.84 Mcps TDD option

**FFS** 

To verify the UE meets the minimum requirements.

#### 8.6.1.1.4 Method of test

8.6.1.1.4.1 3.84 Mcps TDD option

**FFS** 

8.6.1.1.4.2 1.28 Mcps TDD option

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

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

The test parameters are given in Table 8.6.1.1.4A and 8.6.1.1.4B below. The test consists of three successive time periods, with time durations of T1, T2 and T3 respectively. Three cells shall be present in the test, cell 1 being the serving cell and cell 2 and cell 3 being neighbour cells on the used frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G reporting. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9]. The cell specific test parameters are given in Table 8.6.1.1B below.

The TTI of the uplink DCCH shall be 20ms.

<u>Table 8.6.1.1.4A: General test parameters for Event 1G triggered reporting in AWGN propagation condition 1.28Mcps option</u>

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	<u>Comment</u>
DPCH parameters		DL Reference Measurement Channel	As specified in TS 25.102 section A.
active cell		12.2 kbps	The DPCH is located in an other
		•	timeslot than 0
Power Control		<u>On</u>	
Target quality value	BLER	0.01	
on DTCH	DLEK	0.01	
Active cell		Cell 1	
Neighbour cell		Cell 2, Cell 3	
	DB	0	Cell individual offset. This value shall
<u>O</u>	<u>DB</u>	0	be used for all cells in the test.
<u>Hysteresis</u>	<u>DB</u>	<u>0</u>	
Time to Trigger	<u>Ms</u>	<u>0</u>	
Filter coefficient		<u>0</u>	
Monitored cell list		12 TDD neighbours on Channel 1	
<u>size</u>			
<u>T1</u>	<u>S</u>	<u>6</u>	
<u>T2</u>	<u>S</u>	<u>6</u>	
<u>T3</u>	<u>S</u>	<u>6</u>	

<u>Table 8.6.1.1.4B: Cell specific parameters for Event 1G triggered correct reporting in AWGN propagation condition 1.28Mcps option</u>

<u>Parameter</u>	<u>Unit</u>	Cell 1						Ce	<u>II 2</u>			Cell 3						
DL timeslot number			<u>0</u>	<u></u>	<u>DwPTS</u>			<u>0</u>		<u>DwPTS</u>			<u>0</u>		<u>DwPTS</u>			
		<u>T1</u>	<u>T2</u> <u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>
UTRA RF Channel Number			<u>Cha</u>	<u>nnel 1</u>				Channel 1				Channel 1						
PCCPCH_Ec/lor	<u>dB</u>		<u>-3</u>					<u>-3</u>						<u>-3</u>				
DwPCH_Ec/lor	<u>dB</u>				<u>0</u>						<u>0</u>					<u>0</u>		
OCNS Ec/lor	<u>dB</u>		<u>-3</u>					<u>-3</u>					<u>-3</u>					
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>6</u>	<u>4</u>	<u>6</u>	4	<u>1</u>	<u>4</u>	<u>6</u>	<u>-Inf</u>	<u>4</u>	<u>6</u>	<u>-Inf</u>	<u>-1</u>	<u>nf</u>	<u>6</u>	<u>-1</u>	<u>nf</u>	<u>6</u>
PCCPCH RSCP	<u>dBm</u>	<u>-67</u>	<u>-69</u>				<u>-69</u>	<u>-67</u>	<u>-Inf</u>				-1	<u>nf</u>	<u>-67</u>			
$I_{oc}$	dBm / 1,28 MHz		<u>-70</u>															
Propagation Condition			AWGN															

NOTE: The DPCH of all cells are located in a timeslot other than 0.

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 6 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 240 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 7) After 6 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 3. The measurement reporting delay from the beginning of T3 shall be less than 840 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 9) After 6 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 10) Repeat steps 1-9 [TBD] times.

#### **Specific Message Contents**

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

## MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	<u>0</u>
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1 1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode	AMPLO
-Periodical Reporting / Event Trigger Reporting Mode	AM RLC Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	mad noquency mode are men
-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	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-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
-SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator	No report FALSE
-Cell synchronisation information reporting indicator -Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
<ul> <li>-SFN-SFN observed time difference reporting indicator</li> </ul>	No report
<ul> <li>-Cell synchronisation information reporting indicator</li> </ul>	<u>FALSE</u>
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator -Proposed TGSN reporting required	FALSE FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
lates from the second s	<u>criteria</u>
-Intra-frequency measurement reporting criteria (10.3.7.39)	4
-Parameters required for each event -Intra-frequency event identity	1 Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	<u>TDD</u>
-CHOICE TDD option	1.28 Mcps
-Timeslot	<u>0</u>
-Cell parameters ID	0
-SCTD indicator	FALSE
W Hystorogia	Not Present
-Hysteresis -Threshold used frequency	0 dB Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
•	· <del></del>

Information Element/Group name	<u>Value/Remark</u>				
-Reporting interval	<u>0 ms (Note 1)</u>				
-Reporting cell status	Not Present				
Physical channel information elements					
-DPCH compressed mode status info (10.3.6.34)	Not Present				
Note 1: Reporting interval = 0 ms means no periodical reporting					

## MEASUREMENT REPORT message (step 6)

Information Element	<u>Value/remark</u>
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	<u>1</u>
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	<u>1</u>
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>1G</u>
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	<u>TDD</u>
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of Cell 2

## MEASUREMENT REPORT message (step 8)

Information Element	<u>Value/remark</u>
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	<u>1</u>
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of Cell 3
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>1G</u>
-Cell measurement event results (10.3.7.4)	
<u>-CHOICE mode</u>	<u>TDD</u>

-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of Cell 3

8.6.1.1.5 Test requirements

8.6.1.1.5.1 3.84Mcps TDD option

**FSS** 

8.6.1.1.5.2 1.28Mcps TDD option

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

The rate of events correctly reported within the minimum required time during repeated tests shall be at least 90%.

# 3GPP TSG -T1RF Meeting 28 San Antonio, TX, USA 10<sup>th</sup> to 14<sup>th</sup> February 2003

Tdoc # T1-030182

CHANGE REQUEST								CR-Form-v7				
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For <u><b>HELP</b></u> on	For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the <b>%</b> symbols.											
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#### How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <a href="http://www.3gpp.org/specs/CR.htm">http://www.3gpp.org/specs/CR.htm</a>. 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
- 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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 the clause containing the first piece of changed text. De the change request.	(use CTRL-A to select it) into the specification just in front of elete those parts of the specification which are not relevant to

#### 8.6.1.2 Event 1H and 1I triggered reporting in AWGN propagation condition

Void.

8.6.1.2.1 Definition and Applicability

8.6.1.2.1.1 3.84 Mcps TDD option

**FFS** 

8.6.1,2.1.2 1.28 Mcps TDD option

The purpose of this test is to verify that the UE makes correct reporting of events 1H (timeslot ISCP below threshold) and 1I (timeslot ISCP above threshold). This test will partly verify the requirements in [2]

8.6.1.2.2 Minimum requirement

8.6.1.2.2.1 3.84Mcps TDD option

**FFS** 

8.6.1.2.2.2 1.28Mcps TDD option

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T2 as defined in the test method below.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T3 as defined in the test method below.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T4 as defined in the test method below.

8.6.1.2.3 Test Purpose

8.6.1.2.3.1 3.84 Mcps TDD option

<u>FFS</u>

8.6.1.2.3.2 1.28Mcps TDD Option

To verify that the UE meets the minimum requirements.

8.6.1.2.4 Method of test

8.6.1.2.4.1 3.84 Mcps Option

**FFS** 

8.6.1.2.4.2 1.28Mcps TDD Option

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

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

The test parameters are given in Table 8.6.1.2.4.2A, Table 8.6.1.2.4.2B and Table 8.6.1.2.4.2C below. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency.

In the measurement control information it shall be indicated to the UE that event-triggered reporting with event 1H and event 1I shall be used and that Timeslot ISCP and P-CCPCH RSCP shall be reported together with event 1H and 1I. Measurement control information shall be sent to the UE before the beginning of time period T1.

The UL DPCH shall be transmitted in timeslot 2. In addition, timeslots 5 and 6 shall be allocated as DL timeslots.

<u>Table 8.6.1.2.4.2A: General test parameters for correct event 1H and 1I reporting in AWGN</u> propagation condition 1.28Mcps option

Para	meter	Unit	Value	Comment
	DCH parameters active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.
Power Control			<u>On</u>	
Target quality DTCH	value on	BLER	<u>0.01</u>	
<u>Initial</u>	Active cell		Cell 1	
conditions	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 1	
<u>O</u>		<u>dB</u>	<u>0</u>	Cell individual offset. This value shall be used for all cells in the test.
Timeslot list ce	<u>ell 1</u>		<u>5, 6</u>	Timeslot numbers in IE "Cell info" for Cell 1
Timeslot list ce	<u>ell 2</u>		<u>6</u>	Timeslot numbers in IE "Cell info" for Cell 2
Threshold use	d frequency	<u>dBm</u>	<u>-68</u>	Applicable for event 1H, cell 1 timeslots 5, 6 and cell 2 timeslot 6
Threshold use	hold used frequency dBm		<u>-66</u>	Applicable for event 11, cell 1 timeslots 5, 6 and cell 2 timeslot 6
<u>Hysteresis</u>		<u>dB</u>	<u>0</u>	
Time to Trigge	<u>er</u>	ms	0	
Filter coefficier	<u>nt</u>		<u>0</u>	
Monitored cell	list size		6 TDD neighbours on Channel 1	Cell 2 shall belong to the monitored set
<u>T1</u>		<u>s</u>	<u>5</u>	
<u>T2</u>		<u>s</u>	<u>5</u>	
<u>T3</u>		<u>s</u>	<u>5</u>	
<u>T4</u>		<u>s</u>	<u>5</u>	

Table 8.6.1.2.4.2B: Cell 1 specific test parameters for correct event 1H and 1I reporting in AWGN propagation condition 1.28Mcps Option

<u>Parameter</u>	<u>Unit</u>	Cell 1										
		<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>
UTRA RF Channel Number					<u>C</u>	Channe	<u>l 1</u>					
DL timeslot number			<u>0</u>				<u>5</u>			<u>6</u>		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>										
DPCH_Ec/lor	<u>dB</u>					<u>No</u>	te 1					
OCNS_Ec/lor	<u>dB</u>		<u>-3</u>			<u>No</u>	te 2			0		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>4</u>				<u>3</u>		<u>0</u>	<u>6</u>		<u>0</u>
PCCPCH RSCP	<u>dBm</u>		<u>-69</u>			<u>n</u>	<u>.a.</u>			n.a	<u>a.</u>	
I oc	<u>dBm /</u> 1.28 MHz	<u>-70</u>										

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 lor

<u>Table 8.6.1.2.4.2C: Cell 2 specific test parameters for correct event 1H and 1I reporting in AWGN</u> propagation condition 1.28Mcps option

Parameter	<u>Unit</u>	Cell 2							
		<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>
UTRA RF Channel					Cha	nnel 1			
<u>Number</u>					<u> </u>				
DL timeslot number				<u>0</u>			<u>6</u>		
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>							
DPCH_Ec/lor	<u>dB</u>								
OCNS_Ec/lor	<u>dB</u>	<u>-3</u> <u>0</u>							
$\frac{\hat{I}_{or}/I_{oc}}{}$	<u>dB</u>	<u>4</u> <u>6</u> <u>0</u>					<u>0</u>		
PCCPCH RSCP	<u>dBm</u>	<u>-69</u> <u>n.a.</u>							
$I_{oc}$	<u>dBm /</u> 1.28 MHz	<u>-70</u>							

#### **Procedure**

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 1 in timeslot 2. The measurement reporting delay from the beginning of T2 shall be less than 480 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7) After 5 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 2. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 9) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4.
- 10) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 4. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 11) After 5 seconds from the beginning of T4, the SS shall switch the power settings from T4 to T5.
- 12) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 2 in timeslot 4. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 13) After 5 seconds from the beginning of T5, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 14) Repeat steps 1-13 [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], with the following exceptions:

## MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
<u>UE information elements</u>	
-RRC transaction identifier	<u>0</u>
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity -Measurement Command (10.3.7.46)	1 Modify
-Measurement Reporting Mode (10.3.7.49)	<u>iviodity</u>
-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) -CHOICE mode	<u>0</u> TDD
-Measurement quantity list	1
-Measurement quantity	Timeslot ISCP
-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
<ul> <li>Cell synchronisation information reporting indicator</li> </ul>	<u>FALSE</u>
-Cell Identity reporting indicator	FALSE
-CHOICE mode	TDD
	TRUE FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	<u>FALSE</u>
-Cell Identity reporting indicator	TRUE
-CHOICE mode -Timeslot ISCP reporting indicator	TDD TRUE
-Proposed TGSN reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
CHOICE reported cell	Report all active set cells + cells within
Maximum number of venerated cells	monitored set on used frequency
-Maximum number of reported cells -Measurement validity (10.3.7.51)	1 Not Present
-Measurement validity (10.3.7.31) -CHOICE report criteria	Intra-frequency measurement reporting
- C. Grow Topon Smond	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	<u>2</u>
-Intra-frequency event identity	Event 1H
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range -W	Not Present Not Present
	0 dB
-Threshold used frequency	<u>-68</u>
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval -Reporting cell status	0 ms (Note 1) Not Present
-Intra-frequency event identity	Event 1H
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present

Information Element/Group name	Value/Remark				
<u>-W</u>	Not Present				
-Hysteresis	<u>0 dB</u>				
-Threshold used frequency	<u>-73</u>				
-Reporting deactivation threshold	Not Present				
-Replacement activation threshold	Not Present				
-Time to trigger	<u>0 ms</u>				
-Amount of reporting	<u>Infinity</u>				
-Reporting interval	<u>0 ms (Note 1)</u>				
-Reporting cell status	Not Present				
-Intra-frequency event identity	Event 1I				
-Triggering condition 2	Not Present				
-Reporting Range Constant	Not Present				
-Cells forbidden to affect Reporting Range	Not Present				
	Not Present				
-Hysteresis	<u>0 dB</u>				
-Threshold used frequency	<u>-67</u>				
-Reporting deactivation threshold	Not Present				
-Replacement activation threshold	Not Present				
-Time to trigger	<u>0 ms</u>				
-Amount of reporting	<u>Infinity</u>				
-Reporting interval	<u>0 ms (Note 1)</u>				
-Reporting cell status	Not Present				
Physical channel information elements					
-DPCH compressed mode status info (10.3.6.34) Not Present					
Note 1: Reporting interval = 0 ms means no periodical reporting					

## MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	<u>4</u>
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>11</u>
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	<u>TDD</u>
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of cell 1

## MEASUREMENT REPORT message (step 8)

Information Element	<u>Value/remark</u>
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1

Measured Results (10.3.7.44) -CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	4
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>1H</u>
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1

## MEASUREMENT REPORT message (step 10)

Information Element	<u>Value/remark</u>
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	<u>1</u>
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	<u>4</u>
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>1H</u>
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	<u>TDD</u>
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	<u>TDD</u>
-Cell parameters ID	Set to Cell parameters ID of cell 1

## MEASUREMENT REPORT message (step 12)

Information Element		<u>Value/remark</u>		
Message Type (10.2.17)				
Integrity check info	<u> </u>	Not Present		
Measurement identity		<u>1</u>		

Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	<u>1</u>
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
<u>-SFN-SFN observed time difference</u>	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	<u>1</u>
-Timeslot ISCP	Checked that this IE is present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	<u>11</u>
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	<u>TDD</u>
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
Cell parameters ID	Set to Cell parameters ID of cell 2

## 8.6.1.2.5 Test Requirements

8.6.1.2.5.1 3.84Mcps Option

**FFS** 

## 

The UE shall not send event 1H or 1I triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.

## 8.6.1.3 Correct reporting of neighbours in fading propagation condition

8.6.1.3.1 3.84 Mcps TDD option

**FFS** 

8.6.1.3.2 1.28 Mcps TDD option

**FFS** 

# 3GPP TSG -T1RF Meeting 28 San Antonio, TX, USA 10<sup>th</sup> to 14<sup>th</sup> February 2003

*Tdoc* **#** *T1-030183* 

CHANGE REQUEST						
*	34.122 CR 164	# Current version	1: <b>4.6.0</b> #			
For HELP on using this form, see bottom of this page or look at the pop-up text over the % symbols.  Proposed change affects: UICC apps% ME Radio Access Network Core Network						
Title: # Source: #	. ,	ement LCRTDD test case				
Work item code: ₩		Date: 第 <mark> 1</mark>	11/02/03			
Category: 第	F Use one of the following categories: F (correction) A (corresponds to a correction in an B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories found in 3GPP TR 21.900.	Use <u>one</u> of the 2 (Ga n earlier release) R96 (Re R97 (Re R98 (Re R99 (Re gories can Rel-4 (Re Rel-5 (Re	Rel 4 e following releases: SM Phase 2) elease 1996) elease 1997) elease 1998) elease 1999) elease 4) elease 5) elease 6)			
Reason for change:   Updates to reflect latest version core specification  Summary of change:   Addition of Inter-frequency measurement						
Consequences if not approved:	第 Incomplete testing, not reflecting	ng latest core specification.				
Clauses affected: Other specs Affected:	<ul> <li>第 8.6.2 (TDD neighbour) 8.6.3 (Final Plane)</li> <li>第 0 Other core specifications</li> <li>Test specifications</li> <li>O&amp;M Specifications</li> </ul>	,	ghbour)			
Other comments:	器 Based on core spec 25.123 cla This document was originally T1		(RP-010097)			

#### How to create CRs using this form:

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

- 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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 the clause containing the first piece of changed text. De the change request.	(use CTRL-A to select it) into the specification just in front of elete those parts of the specification which are not relevant to

## 8.6.2 TDD inter frequency measurements

## 8.6.2.1 Correct reporting of neighbours in AWGN propagation condition

**Void** 

8.6.2.1.1 Definition and Applicability

8.6.2.1.1.1 3.84Mcps TDD option

**FFS** 

8.6.2.1.1.2 1.28Mcps TDD option

The purpose of this test is to verify that the UE makes correct reporting of an event within the required times when doing inter frequency measurements on a neighbouring TDD cell. The test will partly verify the requirements in section 8 of [2]

8.6.2.1.2 Minimum requirement

8.6.2.1.2.1 3.84Mcps TDD option

**FFS** 

8.6.2.1.2.2 1.28Mcps TDD option

The UE shall send the Event 2C triggered measurement report, with a measurement reporting delay less than [5] s from the beginning of time period T2.

8.6.2.1.3 Test Purpose

8.6.2.1.3.1 3.84Mcps TDD option

**FFS** 

8.6.2.1.3.2 1.28Mcps TDD option

To verify that the UE meets the minimum time requirements for identifying neighbouring TDD cells

8.6.2.1.4 Method of test

8.6.2.1.4.1 3.84Mcps TDD option

**FFS** 

8.6.2.1.4.2 1.28Mcps TDD option

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

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

Cell 1 is the active cell, Cell 2 is a neighbour cell on the used frequency. The power level on Cell 1 is kept constant and the power level of Cell 2 is changed using "change of best cell event". General test parameters are given in the table 8.6.2.1.3 below and they are signalled from test device. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. P-CCPCH RSCP of the best cell has to be reported together

with Event 2C reporting. New measurement control information, which defines neighbour cells etc., is always sent before the event starts. The cell specific test parameters are shown in Table 8.6.2.1.4.

<u>Table 8.6.2.1.3: General test parameters for correct reporting of TDD inter frequency neighbours in</u>

AWGN propagation condition 1.28Mcps option

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	Comment
DPCH parameters		DL Reference Measurement Channel	As specified in TS 25.102 section A.
active cell		12.2 kbps	The DPCH is located in an other
			timeslot than 0
Power Control		<u>On</u>	
Active cell		Cell 1	
Threshold non used	<u>dB</u>	<u>-71</u>	Absolute P-CCPCH RSCP threshold
<u>frequency</u>			for event 2C
<u>Hysteresis</u>	<u>dB</u>	<u>0</u>	
Time to Trigger	<u>ms</u>	<u>0</u>	
Filter coefficient		<u>0</u>	
Monitored cell list		24 on channel 1	Measurement control information is
size		16 on channel 2	sent before T1 starts.
<u>T1</u>	<u>s</u>	<u>10</u>	
<u>T2</u>	<u>s</u>	<u>10</u>	

<u>Table 8.6.2.1.4 Cell Specific Parameters for Correct Reporting of Neighbours in AWGN Propagation</u>

Condition 1.28Mcps option

<u>Parameter</u>	<u>Unit</u>	Cell 1			Cell 2				
Timeslot Number		0		DwPTS		<u>0</u>		<u>DwPTS</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>
UTRA RF Channel Number		Channel 1		Channel 2					
PCCPCH Ec/lor	<u>dB</u>	T	<u>-3</u>			<u>-3</u>			
DwPCH_Ec/lor	<u>dB</u>				<u>0</u>				<u>0</u>
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>3</u>	<u>3</u>			-Infinity	<u>6</u>		
$I_{oc}$	<u>dBm/1.</u> <u>28 MHz</u>	<u>-70</u>							
PCCPCH_RSCP	<u>dBm</u>	<u>-70</u>	<u>-70</u>			-Infinity	<u>-67</u>		
Propagation Condition		<u>AWGN</u>							

NOTE: The DPCH of all cells are located in a timeslot other than 0.

#### 8.6.2.1.4.2.2 Test Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2c for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5080 ms. If the UE fails to report the event within the

required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.

- 7) After 10 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 8) Repeat steps 1-7 [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	<u>Value/Remark</u>
Message Type (10.2.17)	
<u>UE information elements</u>	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity Measurement Common d (40.3.7.46)	
-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)	mor maquericy modearoment
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE inter-frequency cell removal	No inter-frequency cells removed
-New inter-frequency cells	1 1
-Inter-frequency cell id	<u>1</u>
-Frequency info (10.3.6.36)	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2
-Cell info (10.3.7.2)	Not Procent
-Cell individual offset -Reference time difference to cell	Not Present Not Present
-Read SFN indicator	False
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	<u>-55</u>
-CHOICE mode	<u>TDD</u>
-CHOICE TDD option	1.28 Mcps TDD
-Timeslot	<u>0</u>
-cell parameters ID	Set to cell parameters ID of cell 2
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2
Time collect lies	as described in Table 8.6.2.1.2
-Timesllot list -Cell selection and re-selection info	Not Present Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	<u>Not i resent</u>
-CHOICE reporting critera	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	
-Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required -Primary CCPCH RSCP reporting indicator	FALSE TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting
	<u>criteria</u>
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	<u>1</u>
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger -Reporting Cell Status (10.361)	<u>0 ms</u>
-neporting Cell Status (10.301)	1

Information Element/Group name	<u>Value/Remark</u>
-CHOICE reported cell	Report cells within active and/or monitored
	set on used frequency or within virtual
	active and/or monitored set on non-used
	<u>frequency</u>
-Maximum number of reported cells	<u>3</u>
-Parameters required for each non-used frequenc	
<ul> <li>Threshold non-used frequency</li> </ul>	<u>-71</u>
- W non-used frequency	<u>1</u>
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

## MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	<u>1</u>
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	<u>1</u>
-Frequency info	
-CHOICE mode	<u>TDD</u>
UARFCN(Nt)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	<u>1</u>
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
Pathloss	Not Present
Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2 <u>C</u>
-Inter-frequency cells	1
-Frequency Info	TDD
-CHOICE mode	TDD .
-UARFCN(Nt)	Same frequency as channel 2
-CHOICE mode	TDD
-Primary CCPCH Info	TDD
-CHOICE mode	TDD
-CHOICE TDD Option	3.84 Mcps TDD
-CHOICE Sync Case	Not Present
-Cell Parameters ID	Set to cell parameters ID of Cell 2
<u>-SCTD Indicator</u>	<u>FALSE</u>

8.6.2.1.5 Test Requirement

8.6.2.1.5.1 3.84 Mcps TDD Option

**FFS** 

8.6.2.1.5.2 1.28 Mcps TDD Option

The UE shall send an EVENT 2C message of cell 2 within 5080mS from the beginning of the time T2

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

The rate of events correctly reported during repeated tests shall be at least 90%...

#### 8.6.3 FDD measurements

#### 8.6.3.1 Correct reporting of FDD neighbours in AWGN propagation condition

#### Void.

8.6.3.1.1 Definition and Applicability

8.6.3.1.1 3.84Mcps TDD option

**FFS** 

8.6.3.1.1 1,28Mcps TDD option

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements on a neighbouring FDD cell. The test will partly verify the requirements in section 8 of [2]

8.6.3.1.2 Minimum requirement

8.6.3.1.2.1 3.84 Mcps TDD option

**FFS** 

8.6.3.1.2.2 1.28 Mcps TDD option

The UE shall send the Event 2C triggered measurement report, with a measurement reporting delay less than 5.08 s from the beginning of time period T2.

8.6.3.1.3 Test Purpose

8.6.3.1.3.1 3.84 Mcps TDD option

**FFS** 

8.6.3.1.3.2 1.28 Mcps TDD option

To verify that the UE meets the minimum time requirements for identifying neighbouring FDD cells

8.6.3.1.4 Method of Test

8.6.3.1.4.1 3.84Mcps TDD option

**FFS** 

8.6.3.1.4.2 1.28Mcps TDD option

Cell 1 is current active TDD cell, Cell 2 is a FDD cell. The power level of CPICH RSCP of cell 2 and the P-CCPCH RSCP of cell 1 is changed. General test parameters are given in the table 8.6.3.1.3 below and they are signalled from test device. New measurement control information, which defines neighbour cells etc., is always sent before the handover starts. The test parameters are given in Table 8.6.3.1.4 below.

<u>Table 8.6.3.1.3: General test parameters for Correct reporting of FDD neighbours in AWGN propagation condition 1.28Mcps option</u>

<u>Parameter</u>	Unit	<u>Value</u>	Comment
DPCH parameters		DL Reference Measurement Channel	As specified in TS 25.102 section A.
active cell		12.2 kbps	The DPCH is located in an other
			timeslot than 0.
Power Control		<u>On</u>	
Active cell		Cell 1	
Threshold non used	<u>dB</u>	<u>-86</u>	Absolute CPICH RSCP threshold for
<u>frequency</u>			event 2C
<u>Hysteresis</u>	<u>dB</u>	<u>0</u>	
W non-used		<u>1</u>	Applicable for event 2C
<u>frequency</u>			
Time to Trigger	<u>ms</u>	<u>0</u>	
Filter coefficient		<u>0</u>	
Monitored cell list		24 on channel 1	Measurement control information is
<u>size</u>		16 on channel 2	sent before T1 starts.
<u>T1</u>	<u>s</u>	<u>10</u>	
<u>T2</u>	<u>s</u>	<u>10</u>	

<u>Table 8.6.3.1.4 Cell Specific parameters for Correct reporting of FDD neighbours in AWGN propagation condition: 1.28Mcps option</u>

<u>Parameter</u>	<u>Unit</u>		<u>Ce</u>	<u>II 1</u>		<u>Cell 2</u>		
Timeslot Number			<u>0</u>	<u>DwPTS</u>		<u>n.a</u>	<u>n.a.</u>	
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	
UTRA RF Channel Number		Channel 1				Chan	nel 2	
CPICH_Ec/lor	<u>dB</u>	<u>n</u> .	<u>.a.</u>	<u>n.</u>	<u>.a.</u>	<u>-10</u>	<u>-10</u>	
PCCPCH_Ec/lor	<u>dB</u>	<u>-3</u>	<del>-3</del>			<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>	
DwPCH_Ec/lor	<u>dB</u>			0	0	<u>n.a.</u>	<u>n.a.</u>	
<u>OCNS</u>	<u>dB</u>	Ц	Ш			<u>-0,941</u>	<u>-0,941</u>	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	-Infinity	<u>-2</u>	
<u>I<sub>oc</sub></u>	<u>dBm/3.84</u> <u>MHz</u>	<u>-70</u>				<u>-7</u>	<u>70</u>	
CPICH_RSCP		<u>n.a.</u>				<u>-Infinity</u>	<u>-82</u>	
PCCPCH_RSCP	<u>DB</u>	<u>-70</u>				<u>n.a.</u>	<u>n.a.</u>	
Propagation Condition		<u>AWGN</u>				<u>AW</u>	GN	

Note: The DPCH of cell 1 is located in a timeslot other than 0.

8.6.3.1.4.2.1 Test Procedure

8.6.3.1.4.1.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL DCH.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 15 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5040 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 7) After 10 seconds from the beginning of T2, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 8) Repeat steps 1-7 [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):

Messayer   10.2.17    UE information elements   RRC transaction identifier   Not Present	Information Element/Group name	<u>Value/Remark</u>
Integrity check info  Measurement Information elements Measurement Reporting Mode (10.3.7.49) Measurement Reporting Mode (10.3.7.49) Measurement Reporting Mode (10.3.7.49) Measurement Reporting Mode (10.3.7.19) Measurement Report Transfer Mode (10.3.7.19) Measurement Mode (10.3.7.19) Measurement Mode (10.3.7.19) Measurement Mode (10.3.7.19) Modify MR.C. Event tringer Not Present Inter-frequency measurement Inter-frequency measurement Inter-frequency measurement Inter-frequency measurement Inter-frequency measurement Inter-frequency measurement Inter-frequency cell removed Inter-frequency cell removed Inter-frequency as channel 2 Inter-frequency reporting criteria Inter-frequency reporting criteria Inter-frequency reporting criteria Inter-frequency reporting criteria Inter-frequency measurement reporting criteria Inter-frequency measurement reporting criteria Inter-frequency measurement reporting criteria (10.3.7.5) Inter-frequency measur	Message Type (10.2.17)	
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-Frequency quality estimate -Non frequency related cell reporting quantities (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell identity reporting indicator -Cell identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE report criteria  -Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event -Intra-frequency event identity -Threshold used frequency -W Used frequency -Hysteresis -Time to trigger -Reporting Cell Status (10.3.61) -CHOICE reported cell  Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used		
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-SFN-SFN observed time difference reporting indicator  -Cell synchronisation information reporting indicator  -Cell identity reporting indicator  -CHOICE mode  -CPICH Ec/N0 reporting indicator  -CPICH RSCP reporting indicator  -Pathloss reporting indicator  -Reporting cell status (10.3.7.61)  -Measurement validity (10.3.7.51)  -CHOICE report criteria  -Inter-frequency measurement reporting criteria (10.3.7.19)  -Parameters required for each event  -Intra-frequency event identity  -Threshold used frequency  -W Used frequency  -Hysteresis  -Time to trigger  -Reporting Cell Status (10.3.61)  -CHOICE reported cell  Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used		
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-CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51) -CHOICE report criteria -Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event -Intra-frequency event identity -Threshold used frequency -W Used frequency -W Used frequency -Hysteresis -Time to trigger -Reporting Cell Status (10.3.61) -CHOICE reported cell  Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used		
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-CHOICE report criteria  -Inter-frequency measurement reporting criteria (10.3.7.19)  -Parameters required for each event  -Intra-frequency event identity  -Threshold used frequency  -W Used frequency  -Hysteresis  -Time to trigger  -Reporting Cell Status (10.3.61)  -CHOICE reported cell  Inter-frequency measurement reporting criteria  Localization  Event 2C  Not Present  Not Present  0 dB  0 ms  Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used		<u> </u>
-Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event  -Intra-frequency event identity -Threshold used frequency -W Used frequency -Hysteresis -Time to trigger -Reporting Cell Status (10.3.61) -CHOICE reported cell  Criteria   Event 2C  Not Present Not Present  0 dB 0 ms  Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used		
-Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event  -Intra-frequency event identity -Threshold used frequency -W Used frequency -Hysteresis -Time to trigger -Reporting Cell Status (10.3.61) -CHOICE reported cell  Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used	-CHOICE report criteria	
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-Intra-frequency event identity -Threshold used frequency -W Used frequency -Hysteresis -Time to trigger -Reporting Cell Status (10.361) -CHOICE reported cell  Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used		
-Threshold used frequency -W Used frequency -Hysteresis -Time to trigger -Reporting Cell Status (10.361) -CHOICE reported cell  Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used		
-W Used frequency -Hysteresis -Time to trigger -Reporting Cell Status (10.361) -CHOICE reported cell  Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used		
-Hysteresis -Time to trigger -Reporting Cell Status (10.361) -CHOICE reported cell  Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used		
-Time to trigger -Reporting Cell Status (10.361) -CHOICE reported cell  Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used		
-Reporting Cell Status (10.361) -CHOICE reported cell  Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used		
-CHOICE reported cell  Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used		<u>U ms</u>
set on used frequency or within virtual active and/or monitored set on non-used		B
active and/or monitored set on non-used	-CHOICE reported cell	
<u>  trequency</u>		
	1	<u>rrequency</u>

Information Element/Group name	<u>Value/Remark</u>
-Maximum number of reported cells	<u>3</u>
<ul> <li>Parameters required for each non-used frequenc</li> </ul>	
- Threshold non-used frequency	<u>-18</u>
- W non-used frequency	<u>1</u>
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

## MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	<u>1</u>
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	<u>FDD</u>
-Primary CPICH Info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-CPICH Ec/No	Checked that this IE is present
-CPICH RSCP	Not Present
-Pathloss	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2 <u>C</u> 1
-Inter-frequency cells	<u>1</u>
-Frequency Info	
-CHOICE mode	<u>FDD</u>
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-CHOICE mode	<u>FDD</u>
-Primary CPICH info	
-Primary Scrambling Code	Set to Primary scrambling code of Cell2

## 8.6.3.1.5 Test Requirements

8.6.3.1.5.1 3.84 Mcps TDD Option

**FFS** 

8.6.3.1.5.2 1.28 Mcps TDD Option

The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 5080ms from the beginning of time period T2.

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

The rate of correct events observed during repeated tests shall be at least 90%.

## 8.6.4 GSM measurements

# 8.6.4.1 Correct reporting of GSM neighbours in AWGN propagation condition

8.6.4.1.1 3.84 Mcps TDD option

**FFS** 

8.6.4.1.2 1.28 Mcps TDD option

<u>FFS</u>

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Title:	€ Correct	ion to me	asurement l	LCRTDD	Handov	ver to	est case			
Source:	€ T1-RF									
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Category:	F (c) A (c) B (a) C (f) D (e) Detailed (	correction) corresponds addition of functional me	nodification of dification) is of the above	ion in an ea		ease <sub>,</sub>	) R96 R97 R98 R99 Rel-4 Rel-5		hase 2) e 1996) e 1997) e 1998) e 1999) e 4)	eases:
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Clauses affected:	Υ	N	`		Table 8	3.3.1	A.2.1 (Intra f	requenc	cy)	
Other specs Affected:	#	Test s	core specific pecifications Specification	3	*					
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#### How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked \$\mathbb{X}\$ 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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 the clause containing the first piece of changed text. De the change request.	(use CTRL-A to select it) into the specification just in front of elete those parts of the specification which are not relevant to

## 8.3.1A TDD/TDD Handover for 1,28 Mcps Option

#### 8.3.1A.1 Handover to intra-frequency cell

#### 8.3.1A.1.1 Definition and applicability

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 DPCH, excluding the RRC procedure delay as defined in [9].

The requirements and this test apply to the UTRA TDD UE 1.28 Mcps option.

#### 8.3.1A.1.2 Minimum requirement

The hard handover delay shall be less than 40 ms in the single carrier case when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.2.

#### 8.3.1A.1.3 Test purpose

The purpose of this test is to verify the requirement for the intra-frequency handover delay in CELL\_DCH state in the single carrier case.

#### 8.3.1A.1.4 Method of test

#### 8.3.1A.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 8.3.1A.1.1 and 8.3.1A.1.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP and SFN-CFN observed timed difference shall be reported together with Event 1G. 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 message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [9].

Table 8.3.1A.1.1: General test parameters for Handover to intra-frequency cell

Par	ameter	Unit	Value	Comment		
DCH parame	DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2.2		
Power Contr	ol		On			
Target qualit DTCH	y value on	BLER	0.01			
Initial	Active cell		Cell 1			
conditions	Neighbour cell		Cell 2			
Final condition	Active cell		Cell 2			
HCS			Not used			
0		dB	0	Cell individual offset. This value shall be used for all cells in the test.		
Hysteresis		dB	0			
Time to Trigg	ger	ms	0			
Filter coeffici	ent		0			
Monitored ce			6 TDD neighbours on Channel 1			
T1	S		T1		<del>10</del> <u>5</u>	
T2	·	S	<del>10</del> 5			
T3		S	<del>10</del> 5			

Table 8.3.1A.1.2: Cell specific test parameters for Handover to intra-frequency cell 1.28Mcps option

Parameter Parameter	Unit		Cell 1				Cell 2						
Timeslot Number			0		5			0			<del>5</del>		
		<del>11</del>	<del>T2</del>	<del>T3</del>	<del>T1</del>	<del>T2</del>	<del>T3</del>	<del>T1</del>	<del>T2</del>	<del>T3</del>	<del>T</del> 1	<del>T2</del>	<del>T3</del>
UTRA RF Channel				Oha	mmal 4					Cha	nnal 1		
Number				<del>Una</del>	nnel 1					<del>Gna</del> i	<del>nnei i</del>		
PCCPCH_Ec/lor	d₿		<del>-3</del>			n.a.			<del>-3</del>		<del>n.a.</del>		
DPCH_Ec/lor	d₿		n.a.		Not	<del>e1</del>	n.a.	<del>n.a.</del>		n	<del>.a.</del>	Note1	
OCNS_Ec/lor	d₿		Note2		Note2			Note2			Note2		
$\frac{\hat{I}_{or}/I_{oc}}{I_{oc}}$	d₿		3		3			-Inf. 5		-	<del>Inf.</del>	5	
	<del>dBm/</del>				•		•	•	•		•		•
$\frac{I_{oc}}{}$	<del>1.28</del>						<del>-7</del>	0					
	MHz												
PCCPCH_RSCP	dBm	<del>-70</del> n.a.			-Inf.	-6	<del>8</del>		n.a				
Propagation Condition		AWGN											
Note 1: The DPCH leve	l is contro	olled by	the po	wer cor	ntrol loop	<del>)</del>							

<u>Parameter</u>	<u>Unit</u>	Cell 1							
Timeslot Number			<u>0</u>		DwPTS		<u>5</u>		
		<u>T1</u>	<u>T2</u> <u>T3</u>	<u>T1</u>	<u>T2</u> <u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	
UTRA RF Channel				Cł	nannel 1				
Number Poopoli, Faller	-ID			1					
PCCPCH_Ec/lor	<u>dB</u>		<u>-3</u>				<u>n.a.</u>		
DwPCH_Ec/lor	٩D				<u>0</u>	NI.	-4-4		
DPCH_Ec/lor	<u>dB</u>		<u>n.a.</u>		<u>n.a.</u>	<u>N</u>	ote1	<u>n.a.</u>	
OCNS_Ec/lor	<u>dB</u>		<u>-3</u>				Note2		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>3</u>		<u>3</u>		<u>3</u>		
7	dBm/								
$I_{oc}$	1.28 MHz				<u>-70</u>				
PCCPCH_RSCP	dBm	-70 n.a. n.a.							
Propagation Condition		AWGN							
Parameter	Unit				Cell 2				
Timeslot Number			<u>0</u>		DwPTS		<u>5</u>		
		<u>T1</u>	<u>T2</u> <u>T3</u>	<u>T1</u>	<u>T2</u> <u>T3</u>	<u>T1</u>	T2	T3	
UTRA RF Channel Number				<u>C</u> ł	nannel 1				
PCCPCH_Ec/lor	dB		-3				n.a.		
DwPCH_Ec/lor	<u>ub</u>				0		<u>11.4.</u>		
					<u> </u>			Not	
DPCH_Ec/lor	<u>dB</u>		<u>n.a.</u>		<u>n.a.</u>	<u>r</u>	<u>ı.a.</u>	<u>e1</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-3</u>					Note2		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>-Inf.</u>	<u>5</u>	-Inf.	<u>5</u>	=	<u>Inf.</u>	<u>5</u>	
<u>I<sub>oc</sub></u>	dBm/ 1.28 MHz				<u>-70</u>	•			
PCCPCH_RSCP	dBm	-Inf.	-68		n 0		n 0		
	UDIII	<u>-1111.</u>	<u>-00</u>		n.a.		<u>n.a.</u>		
Propagation Condition	<u>.                                    </u>	<u>AWGN</u>							

Note 1:

The DPCH level is controlled by the power control loop

The power of the OCNS channel that is added shall make the total power from the cell to be equal to I

#### 8.3.1A.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.
- 4) SS shall transmit a MEASUREMENT CONTROL message.

- 6
- 5) After 510 seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.
- 8) After 510 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 DPCH to cell 2 less than 40 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 510 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] 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	4
-Measurement Identity	1
-Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49)	Modify
-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	TDD
-Measurement quantity list	Drimon, CCDCH
-Measurement quantity -Intra-frequency reporting quantity (10.3.7.41)	Primary CCPCH
-Reporting quantities for active 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	TDD
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH 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 -Cell Identity reporting indicator	TRUE (Note 1) TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH 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
Manifestore accept an of page attention to	monitored set on used frequency
-Maximum number of reported cells	2 Not Present
-Measurement validity (10.3.7.51) -CHOICE report criteria	Intra-frequency measurement reporting
oriolog report entend	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57) -CHOICE mode	TDD
-CHOICE Thode -CHOICE TDD option	1.28 Mcps
TSTD indicator	TRUE
-Cell parameters ID	0
-SCTD indicator	FALSE
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger -Amount of reporting	0 ms
-Amount of reporting	Infinity

	Information Element/Group name	Value/Remark				
-Repo	rting interval	0 ms (Note 2)				
-Repo	rting cell status	Not Present				
Physical	channel information elements					
-DPCH c	ompressed mode status info (10.3.6.34)	Not Present				
Note 1:						
Note 2:	: Reporting interval = 0 ms means no periodical reporting					

## PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator -UTRAN DRX cycle length coefficient	CELL_DCH Not Present
CN Information Elements	Not Present
-CN Information info	Not Present
UTRAN mobility information elements	Not i resent
-URA identity	Not Present
RB information elements	11011100011
-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	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	30 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	TDD
-CHOICE TDD option	1.28 Mcps TDD
-PRX <sub>PDPCHdes</sub>	Not Present
-CHOICE UL OL PC info -CHOICE TDD option	Individually signalled 1.28 Mcps TDD
-Indivdual Timeslot interference info	1.26 Micps 100
-Individual timeslot interference (10.3.6.38)	<b>'</b>
-Timeslot Number (10.3.6.84)	
-CHOICE TDD option	1.28 Mcps TDD
-TPC step size	1
-UL Timeslot Interference	-90 dBm
-CHOICE mode	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE Timing Advance	Disabled
-UL CCTrCH list	1
-UL Target SIR	TBD dB
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84) -CHOICE TDD option	1.28 Mcns
-CHOICE TOD option -Timeslot number	1.28 Mcps 2
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	1140
-Choice TDD option	1.28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble configuration	Not present
-CHOICE TDD option	1.28 Mcps
-Modulation	QPSK
- SS-TPC Symbols	
-Additional TPC-SS Symbols	
J	

Information Element	Value/Remark
-First timeslot code list	1
-Channelisation code	8/1
-Choice more timeslots	No more timeslots
Downlink radio resources	
-CHOICE mode	TDD
-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)	
-CHOICE mode	TDD
-TPC Step size	1 dB
-CHOICE mode	TDD
-CHOICE mode	TDD
-CHOICE TDD option	1.28 Mcps
-TX Diversity mode (10.3.6.86)	None
-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)	TDD
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	TDD
-CHOICE mode	TDD
-CHOICE TDD option TSTD indicator	1.28 Mcps
	TRUE 0
-Cell parameters ID -SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	raise
-CHOICE mode	TDD
-DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	Not i resent
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Downlink DPCH timeslots and codes (10.3.6.32)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE TDD option	1.28 Mcps
-Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE TDD option	1.28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE TDD option	1.28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot channelisation codes (10.3.6.17)	Congogutive andes
-CHOICE codes representation	Consecutive codes 16/1
-First channelisation code -Last channelisation code	16/1
-Last channelisation code -CHOICE more timeslots	No more timeslots
-SCCPCH information for FACH (10.3.6.70)	Not Present
-3001 OFFINIOHIAMON TO FACE (10.3.0.70)	INOLITESCHI

## 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.

## 8.3.1A.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than [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.

#### 8.3.1A.2 Handover to inter-frequency cell

#### 8.3.1A.2.1 Definition and applicability

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 DPCH, excluding the RRC procedure delay as defined in [9].

The requirements and this test apply to the UTRA TDD UE 1.28 Mcps option.

#### 8.3.1A.2.2 Minimum requirement

The hard handover delay shall be less than 40 ms in the dual carrier case when the cell is known by the UE and the SFN of the target cell needs to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.2.

#### 8.3.1A.2.3 Test purpose

The purpose of this test is to verify the requirement for the inter-frequency handover delay in CELL\_DCH state in the dual carrier case.

#### 8.3.1A.2.4 Method of test

#### 8.3.1A.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 8.3.1A.2.1 and 8.3.1A.2.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The PCCPCH RSCP and SFN-CFN observed time difference 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 message with activation time at beginning of T3 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [9].

Table 8.3.1A.2.1: General test parameters for Handover to inter-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2.2
Power Contro	ol		On	
Target quality	y value on	BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 2	
Threshold no frequency	Threshold non-used frequency		<u>-80</u>	Absolute threshold RSCP for Event 2C
HCS			Not used	
0			0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigg	jer	ms	0	
Filter coefficie	ent		0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T <sub>SI</sub>		<del>S</del>	<del>1,28</del>	The value shall be used for all cells in the test.
T1	_	S	<del>10</del> 5	
T2	·	S	10	
T3		S	<del>10</del> 5	

Table 8.3.1A.2.2: Cell Specific parameters for Handover to inter-frequency cell

Parameter Parameter	<del>Unit</del>		Cell 1					C	<del>ll 2</del>						
Timeslot Number			0			5			0			5			
		T1	<del>T2</del>	<del>T3</del>	<b>T</b> 4	<del>T2</del>	<del>T3</del>	<b>T</b> 4	<del>T2</del>	<del>T3</del>	<del>1</del> 4	<del>T2</del>	<del>T3</del>		
UTRA RF Channel Number			Channel 1			Channel 2									
PCCPCH_Ec/lor	d₿		-3 n.a.				<del>-3</del>			n.a.					
DPCH_Ec/lor	d₿		n.a.		No	te1	n.a.	n.a.		n.	a	Note1			
OCNS_Ec/lor	d₿		<del>-3</del>		Note2		<del>-3</del>		Note2						
$\frac{\hat{I}_{or}/I_{oc}}{I_{oc}}$	d₽		<del>-3</del>		(	3		-Inf	ί	<del>)</del>	-Inf		9		
$I_{\overline{oc}}$	dBm/1.28 MHz	<del>-70</del>													
PCCPCH_RSCP	dBm	dBm -70		<del>-70</del>		<del>-70</del>		n.a.		-Inf	-6	34		n.a.	-
Propagation Condition		AWGN													

Parameter	Unit	Cell 1						
Timeslot Number		0 DwPTS				<u>5</u>		
		T1	T2 T3	T1	T2 T3	T1 T2	T3	
UTRA RF Channel								
Number				<u>Ch</u>	annel 1			
PCCPCH_Ec/lor	<u>dB</u>		<u>-3</u>			<u>n.a.</u>		
DwPCH_Ec/lor					<u>0</u>			
DPCH_Ec/lor	<u>dB</u>		<u>n.a.</u>		<u>n.a.</u>	Note1	<u>n.a.</u>	
OCNS Ec/lor	<u>dB</u>		<u>-3</u>			Note2	)	
$\hat{I}_{or}/I_{oc}$	<u>dB</u>		<u>3</u>		<u>3</u>	<u>3</u>		
	dBm/			•			•	
$I_{oc}$	<u>1.28</u>				<u>-70</u>			
	MHz			ı		1		
PCCPCH RSCP	<u>dBm</u>		<u>-70</u> <u>n.a.</u>			<u>n.a.</u>		
Propagation Condition					<u>AWGN</u>			
<u>Parameter</u>	<u>Unit</u>				Cell 2	·		
<u>Timeslot Number</u>			<u>0</u>		DwPTS	<u>5</u>		
		<u>T1</u>	<u>T2</u> <u>T3</u>	<u>T1</u>	<u>T2</u> <u>T3</u>	<u>T1</u> <u>T2</u>	<u>T3</u>	
UTRA RF Channel Number				<u>Ch</u>	annel 2			
PCCPCH_Ec/lor	dB		-3			n.a.		
DwPCH_Ec/lor			<del></del>		0			
DPCH_Ec/lor	<u>dB</u>		n.a.		n.a.	n.a.	Not e1	
OCNS_Ec/lor	<u>dB</u>		<u>-3</u>			Note2		
$\hat{I}_{or}/I_{oc}$	<u>dB</u>	<u>-Inf.</u> 9		<u>-Inf.</u> 9		<u>-Inf.</u>	<u>9</u>	
7	dBm/							
$I_{oc}$	<u>1.28</u> MHz	<u>-70</u>						
PCCPCH_RSCP	dBm	-Inf64 n.a. n.a.						
Propagation Condition	<u>upiii</u>	<u>-11111.</u>	<u>-U-T</u>	<u> </u>	AWGN	<u>11.a.</u>		
Note 1: The DPCH level	is contro	lled by t	he nower cont					
Note 2: The power of the		channel	that is added s	shall ma	ke the total no	ower from the	cell	

#### 8.3.1A.2.4.2 Procedure

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

to be equal to I

- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 10-5 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 DPCH to cell 2 less than 40 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 510 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] with the following exceptions:

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

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	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)	
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Inter-frequency reporting criteria	
-Filter coefficient	0
-CHOICE mode	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-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	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP 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	1
frequency	
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting
	criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity (10.3.7.14)	Event 2C
-Threshold used frequency	Not Present
-W used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within monitored set on non-
	used frequency
-Maximum number of reported cells per reported non-used	1
frequency	
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-80 dBm
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

## PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time -New U-RNTI	At T3 Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements -Frequency info (10.3.6.36)	
-CHOICE mode	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	30 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	TDD
-CHOICE TDD option	1.28 Mcps TDD
-PRX <sub>PDPCHdes</sub>	Not Present
-CHOICE UL OL PC info	Individually signalled
-CHOICE TDD option -Indivdual Timeslot interference info	1.28 Mcps TDD
-Individual timeslot interference (10.3.6.38)	
-Timeslot Number (10.3.6.84)	
-CHOICE TDD option	1.28 Mcps TDD
-TPC stepsize	1
- UL Timeslot Interference	-90 dBm
-CHOICE mode	TDD
-Uplink timing advance control (10.3.6.96)	D: 11 1
-CHOICE Timing Advance	Disabled
-UL CCTrCH list	1 TBD dB
-UL Target SIR -Time Info (10.3.6.83)	TOD UB
-Activation Time	Т3
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	4.00.14
-CHOICE TDD option	1.28 Mcps
-Timeslot number -TFCI existence	2 True
-Midamble shift and burst type (10.3.6.41)	True
-CHOICE <i>TDD</i> option	1.28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE TDD option	1.28 Mcps
-Modulation	QPSK
- SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot code list	1

Information Element	Value/Remark
-Channelisation code	8/1
-CHOICE more timeslots	No more timeslots
Downlink radio resources	
-CHOICE mode	TDD
-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)	
-CHOICE mode	TDD
-TPC Step size	1 dB
-CHOICE mode	TDD
-CHOICE mode	TDD
-CHOICE TDD option	1.28 Mcps
-TX Diversity mode (10.3.6.86)	None
-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)	TDD
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	TDD
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps
TSTD indicator	TRUE
- Cell parameters ID	0
- SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	TDD
-CHOICE mode	TDD
- DL CCTrCH list	1 Not Droppet
-TFCS ID	Not Present
-Time Info (10.3.6.83)	To
-Activation Time	T3 Infinite
-Duration	Not Present
-Common timeslot info - Downlink DPCH timeslots and codes (10.3.6.32)	Not Fresent
- First individual timeslot info (10.3.6.37)	
- Timeslot Number (10.3.6.84)	
- CHOICE TDD option	1.28 Mcps
- Timeslot number	5
- TFCI existence	True
- Midamble shift and burst type (10.3.6.41)	Tide
- CHOICE TDD option	1.28 Mcps
- OHOIOL TOD OPHOIT	1.20 Mcp3
- Midamble Allocation Mode	Default
- Midamble configuration	16
- Midamble shift	Not present
- CHOICE TDD option	1.28 Mcps
- First timeslot channelisation codes (10.3.6.17)	1.20 1/10/0
-Modulation	QPSK
-SS-TPC Symbols	<u> </u>
-Additional TPC-SS Symbols	
- CHOICE codes representation	Consecutive codes
- First channelisation code	16/1
- Last channelisation code	16/2
	No more timeslots
<ul> <li>Last channelisation code</li> <li>CHOICE more timeslots</li> <li>SCCPCH information for FACH (10.3.6.70)</li> </ul>	

## MEASUREMENT REPORT message for Inter frequency test cases

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

## 8.3.1A.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than [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 -T1RF Meeting 28 San Antonio, TX, USA 10<sup>th</sup> to 14<sup>th</sup> February 2003

CHANGE REQUEST										
*	34.122 CR 166									
For HELP on using this form, see bottom of this page or look at the pop-up text over the % symbols.  Proposed change affects: UICC apps% ME Radio Access Network Core Network										
Title:	Correction to measurement LCRTDD test case									
Source:	T1-RF									
Work item code: ₩	Date:   ■ 11/02/03									
Category: #	Release: # Rel 4  Use one of the following categories:  F (correction)  A (corresponds to a correction in an earlier release)  B (addition of feature),  C (functional modification of feature)  P (editorial modification)  D (editorial modification)  D (editorial modification)  P (Release 1996)  R98 (Release 1997)  R99 (Release 1999)  R99 (Release 1999)  Detailed explanations of the above categories can  Rel-4 (Release 4)  Rel-5 (Release 5)  Rel-6 (Release 6)	:								
Summary of chang	Reason for change:  Updated to rectify error in table to satisfy latest version core specification  Summary of change:  Correction of LCR AWGN measurement									
Consequences if not approved:	# Incorrect BER tables, not reflecting latest core specification.									
Clauses affected: Other specs Affected:	# 7.1-7.3.3    Y   N									
Other comments:	# The reference for these tables is TS 25.102 [1] clauses 8.1-8.3 CRs 79 & 94 This document was originally T1R030059 from Siemens AG									

#### How to create CRs using this form:

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

- 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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 the clause containing the first piece of changed text. De the change request.	(use CTRL-A to select it) into the specification just in front of elete those parts of the specification which are not relevant to

## 7.1 General

The performance requirements for the UE in this clause is specified for the measurement channels specified in annex C and the test environments specified in annex D.

All Block Error ratio (BLER) measurements in clause 7 shall be performed according to the general rules for statistical testing in Annex F.6.

## 7.1.2 Definition of Additive White Gaussian Noise (AWGN) Interferer

The minimum bandwidth of the AWGN interferer shall be 1.5 times chip rate of the radio access mode. (e.g. 5.76 MHz for a chip rate of 3.84 Mcps). The flatness across this minimum bandwidth shall be less than  $\pm 0.5 \text{ dB}$  and the peak to average ratio at a probability of 0.001% shall exceed 10 dB.

## 7.2 Demodulation in static propagation conditions

#### 7.2.1 Demodulation of DCH

#### 7.2.1.1 Definition and applicability

The performance requirement of DCH in static propagation conditions is determined by the maximum Block Error Ratio (BLER). The BLER is specified for each individual data rate of the DCH. DCH is mapped into the Dedicated Physical Channel (DPCH).

The UE shall be tested only according to the datarates, supported. The data-rate-corresponding requirements shall apply to the UE.

#### 7.2.1.2 Minimum requirements

#### 7.2.1.2.1 3,84 Mcps TDD Option

For the parameters specified in table 7.2.1.2.1a the BLER shall not exceed the piece-wise linear BLER curve specified in table 7.2.1.2.1b. These requirements are applicable for TFCS size 16.

The reference for this requirement is TS 25.102 [1] clause 8.2.1.1.1.

Table 7.2.1.2.1a: DCH parameters in static propagation conditions (3,84 Mcps TDD Option)

Parameters	Unit	Test 1	Test 2	Test 3	Test 4	Test 5	
$\Sigma DPCH \_E_c$	dB	-6	-3	0	0	0	
$\overline{I_{or}}$							
l <sub>oc</sub>	dBm/3,84 MHz	-60					
Cell Parameter*		0,1					
DPCH Channelization Codes*	C(k,Q)	C(i,16) i=1,2	C(i,16) i=1 5	C(i,16) i=19	C(i,16) i=18	-	
OCNS Channelization Code*	C(k,Q)	C(3,16)	C(6,16)	-	-	-	
Information Data Rate	kbps	12,2	64	144	384	2048	
Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.							

Table 7.2.1.2.1b: Performance requirements in AWGN channel (3,84 Mcps TDD Option)

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	1,1	10 <sup>-2</sup>
2	3,5	10 <sup>-1</sup>
	3,8	10 <sup>-2</sup>
3	3,4	10 <sup>-1</sup>
	3,6	10 <sup>-2</sup>
4	2,7	10 <sup>-1</sup>
	3,0	10 <sup>-2</sup>
5	3,5	10 <sup>-1</sup>
	3,6	10 <sup>-2</sup>

## 7.2.1.2.2 1,28 Mcps TDD Option

For the parameters specified in table 7.2.1.2.2a the BLER should not exceed the piece-wise linear BLER curve specified in table 7.2.1.2.2b. <u>The reference for this requirement is TS 25.102 [1] clause 8.2.1.1.2.</u>

Table 7.2.1.2.2a: DCH parameters in static propagation conditions (1,28Mcps TDD Option)

Parameters Parameters Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH <sub>e</sub>		8	2	2	0
$\frac{DPCH_{o} \_E_{c}}{I_{or}}$	d₽	<del>-10</del>	<del>-10</del>	<del>-10</del>	0
₽ <sub>ec</sub>	DBm/1,28MHz		-(	<del>30</del>	
Information Data Rate	<del>Kbps</del>	<del>12,2</del>	64	144	384

<u>Parameters</u>	<u>Unit</u>	Test 1	Test 2	Test 3	Test 4		
Number of DPCH <sub>o</sub>		<u>8</u>	2	2	<u>0</u>		
Scrambling code and basic midamble code number*		<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>		
DPCH Channelization Codes*	<u>C(k,Q)</u>	C(i,16) i=1,2	<u>C(i,16)</u> i=18	C(i,16) i=18	<u>C(i,16)</u> i=110		
DPCH <sub>o</sub> Channelization Codes*	<u>C(k,Q)</u>	<u>C(i,16)</u> 3≤ i ≤10	<u>C(i,16)</u> 9≤ i ≤10	<u>C(i,16)</u> 9≤ i ≤10	-11		
$\frac{DPCH_{o} - E_{c}}{I_{or}}$	<u>dB</u>	<u>-10</u>	<u>-10</u>	<u>-10</u>	<u>0</u>		
l <sub>oc</sub>	DBm/1.28MHz	-60					
Information Data Rate	Kbps	<u>12.2</u>	<u>64</u>	144	<u>384</u>		
*Note: Refer to TS 2	5.223 for definition of	of channelization	codes, scrambling	code and basic	midamble code.		

Table 7.2.1.2.2b: Performance requirements in AWGN channel (1,28 Mcps TDD Option)

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
4	<del>3,1</del>	<del>10</del> <sup>-2</sup>
2	<del>2,1</del>	<del>10</del> <sup>-1</sup>
	<del>2,4</del>	<del>10</del> <sup>-2</sup>
3	<del>2,5</del>	10 <sup>-1</sup>
	2,8 2,8	<del>10<sup>-2</sup></del>
4	2,8	<del>10</del> <sup>-1</sup>

<u>Test Number</u>	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	<u>BLER</u>
<u>1</u>	<u>3.6</u>	<u>10<sup>-2</sup></u>
<u>2</u>	<u>2.4</u>	<u>10<sup>-1</sup></u>
	2.7	<u>10<sup>-2</sup></u>
<u>3</u>	2.8	<u>10<sup>-1</sup></u>
	3.2	<u>10<sup>-2</sup></u>
4	3.2	10 <sup>-1</sup>

#### 7.2.1.3 Test purpose

While the receiver tests in clause 6 aims for the RF hardware, this performance requirement aims for the receiver's signal processing.

The test purpose is to verify the ability of the receiver to receive a predefined test signal ,representing a static propagation channel for the wanted and for the co-channel signals from serving and adjacent cells, with a block error ratio (BLER) not exceeding a specified value.

#### 7.2.1.4 Method of test

#### 7.2.1.4.1 Initial conditions

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

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

1) Connect the SS, AWGN Generator and additional components to the UE antenna connector as shown in figure A.9.

- 2) A call is set up according to the Generic call setup procedure. The characteristic of the call shall be according to the DL reference measurement channels (12,2 kbit/s) (64 kbit/s), (144 kbit/s), and (384 kbit/s) specified in annex C.
- 3) Enter the UE into loopback test mode and start the loopback test. (test 1) and/or activate the Ack/Nack test mode (test 1 to test 4).
- 4) The levels of the wanted signal and the co-channel signals are set according to table 7.2.1.2.1a and b for the 3,84 Mcps TDD Option and table 7.2.1.2.2a and b for the 1,28 Mcps TDD Option, respectively.

#### 7.2.1.4.2 Procedure

Measure the BLER of DCH received from the UE at the SS for all tests specified in table 7.2.1.2.1a for the 3,84 Mcps TDD Option and table 7.2.1.2.2a for the 1,28 Mcps TDD Option, respectively.

#### 7.2.1.5 Test requirements

The measured BLER shall not exceed the values indicated in table 7.2.1.2.1b for the 3,84 Mcps TDD Option and table 7.2.1.2.2b for the 1,28 Mcps TDD Option, respectively.

## 7.3 Demodulation of DCH in multipath fading conditions

## 7.3.1 Multipath fading Case 1

#### 7.3.1.1 Definition and applicability

The performance requirement of DCH is determined by the maximum Block Error Ratio (BLER). The BLER is specified for each individual data ratio of the DCH. DCH is mapped into the Dedicated Physical Channel (DPCH).

The UE shall be tested only according to the dataratios, supported. The data-ratio-corresponding requirements shall apply to the UE.

#### 7.3.1.2 Minimum requirements

#### 7.3.1.2.1 3,84 Mcps TDD Option

For the parameters specified in table 7.3.1.2.1a the BLER shall not exceed the piece-wise linear BLER curve specified in table 7.3.1.2.1b. These requirements are applicable for TFCS size 16.

The reference for this requirement is TS 25.102 clause 8.3.1.1.1.

Table 7.3.1.2.1a: DCH parameters in multipath Case 1 channel (3,84 Mcps TDD Option)

Parameters	Unit	Test 1	Test 2	Test 3	Test 4	Test 5
$\Sigma DPCH \ \_E_c$	DB	-6	-3	0	0	0
$\overline{I_{or}}$						
l <sub>oc</sub>	dBm/3,84 MHz			-60		
Cell Parameter				0,1		
(note)						
DPCH	C(k,Q)	C(i,16) i=1,2	C(i,16) i=1 .	C(i,16) i=1.	C(i,16) i=1 .	-
Channelization			.5	.9	.8	
Codes (note)						
OCNS	C(k,Q)	C(3,16)	C(6,16)	-	-	-
Channelization Code						
(note)						
Information Data	kbps	12,2	64	144	384	2048
Rate						
Note: Refer to TS 2	5.223 for definition	of channelizatio	n codes and cell	parameter.	•	•

Table 7.3.1.2.1b: Performance requirements in multipath Case 1 channel (3,84 Mcps TDD Option)

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	13,9	10 <sup>-2</sup>
2	13,7	10 <sup>-1</sup> 10 <sup>-2</sup>
	19,8	10 <sup>-2</sup>
3	14,1	10 <sup>-1</sup>
	20,6	10 <sup>-2</sup>
4	13,8	10 <sup>-1</sup>
	20,0	10 <sup>-2</sup>
5	13,2	10 <sup>-1</sup>
	17,8	10 <sup>-2</sup>

#### 7.3.1.2.2 1,28 Mcps TDD Option

For the parameters specified in table 7.3.1.2.2a the BLER should not exceed the piece-wise linear BLER curve specified in table 7.3.1.2.2b. The reference for this requirement is TS 25.102 [1] clause 8.3.1.1.2.

Table 7.3.1.2.2a: DCH parameters in a multipath Case 1 channel (1.28 Mcps TDD Option)

<u>Parameters</u>	<u>Unit</u>	Test 1	Test 2	Test 3	Test 4
Number of DPCH₀		<u>8</u>	<u>2</u>	<u>2</u>	<u>0</u>
Scrambling code and basic midamble code number*		<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
DPCH Channelization Codes*	C(k,Q)	C(i,16) <u>i=1,2</u>	C(i,16) i=18	C(i,16) i=18	C(i,16) i=110
DPCH <sub>o</sub> Channelization Codes*	<u>C(k,Q)</u>	<u>C(i,16)</u> 3≤ i ≤10	<u>C(i,16)</u> 9≤ i ≤10	<u>C(i,16)</u> 9≤ i ≤10	-
$\frac{DPCH_{o} _{E_{c}}}{I_{or}}$	<u>DB</u>	<u>-10</u>	<u>-10</u>	<u>-10</u>	<u>0</u>
<u>l<sub>oc</sub></u>	dBm/1.28MHz		<u>-6</u>	<u>60</u>	
Information Data Rate	Kbps	12.2	64	144	384

#### in static propagation conditions (1,28Mcps TDD Option)

Parameters Parameters Parameters	<del>Unit</del>	Test 1	Test 2	Test 3	Test 4
Number of DPCH <sub>o</sub>		8	2	2	0
$\frac{DPCH_{o} \_E_{c}}{I_{or}}$	dB	<del>-10</del>	<del>-10</del>	<del>-10</del>	0
l <sub>ec</sub>	DBm/1,28MHz			<del>0</del>	
Information Data Rate	<del>Kbps</del>	<del>12,2</del>	64	144	<del>384</del>

Table 7.3.1.2.2b: Performance requirements in- a multipath Case 1 channel (1.28 Mcps TDD Option)

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
<u>1</u>	<u>22.4</u>	<u>10<sup>-2</sup></u>
<u>2</u>	<u>15.8</u>	<u>10<sup>-1</sup></u>
	<u>22.9</u>	<u>10<sup>-2</sup></u>
<u>3</u>	<u>16.6</u>	<u>10<sup>-1</sup></u>
	<u>23.9</u>	<u>10<sup>-2</sup></u>
<u>4</u>	<u>16.5</u>	<u>10<sup>-1</sup></u>
	23.5	10 <sup>-2</sup>

#### **AWGN channel (1,28Mcps TDD Option)**

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
4	<del>3,1</del>	<del>10</del> <sup>-2</sup>
2	<del>2,1</del>	<del>10</del> <sup>-1</sup>
	<del>2,4</del>	<del>10<sup>-2</sup></del>
3	<del>2,5</del>	<del>10 1</del>
	<del>2,8</del>	10 <sup>-1</sup> 10 <sup>-2</sup> 10 <sup>-2</sup> 10 <sup>-2</sup>
4	2,4 2,5 2,8 2,8	<del>10 1</del>

#### 7.3.1.3 Test purpose

While the receiver tests in clause 6 aims for the RF hardware, this performance requirement aims for the receiver's signal processing.

The test purpose is to verify the ability of the receiver to receive a predefined test signal, representing a multipath propagation channel for the wanted and for the co-channel signals from serving and adjacent cells, with a block error ratio (BLER) not exceeding a specified value.

#### 7.3.1.4 Method of test

#### 7.3.1.4.1 Initial conditions

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

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

- 1) Connect the SS, , the fading simulator, the AWGN generator and additional components to the UE antenna connector as shown in figure A.10.
- 2) A call is set up according to the Generic call setup procedure. The characteristic of the call shall be according to the DL reference measurement channels (12,2 kbit/s), (64 kbit/s), (144 kbit/s), and (384 kbit/s) specified in annex C.
- 3) Enter the UE into loopback test mode and start the loopback test. (test 1) and/or activate the Ack/Nack test mode (test 1 to test 4).
- 4) The levels of the wanted signal and the co-channel signals are set according to table 7.3.1.2.1a and b for the 3,84 Mcps TDD Option and table 7.3.1.2.2a and b for the 1,28 Mcps TDD Option, respectively.

#### 7.3.1.4.2 Procedure

Measure the BLER of DCH received from the UE at the SS for all tests specified in table 7.3.1.2.1a for the 3,84 Mcps TDD Option and table 7.3.1.2.2a for the 1,28 Mcps TDD Option, respectively.

#### 7.3.1.5 Test requirements

The measured BLER shall not exceed the values indicated in table 7.3.1.2.1b for the 3,84 Mcps TDD Option and table 7.3.1.2.2b for the 1,28 Mcps TDD Option, respectively.

## 7.3.2 Multipath fading Case 2

## 7.3.2.1 Definition and applicability

The performance requirement of DCH is determined by the maximum Block Error Ratio (BLER). The BLER is specified for each individual data rate of the DCH. DCH is mapped into the Dedicated Physical Channel (DPCH).

The UE shall be tested only according to the datarates, supported. The data-rate-corresponding requirements shall apply to the UE.

#### 7.3.2.2 Minimum requirement

#### 7.3.2.2.1 3,84 Mcps TDD Option

For the parameters specified in table 7.3.2.2.1a the BLER should not exceed the piece-wise linear BLER curve specified in table 7.3.2.2.1b. These requirements are applicable for TFCS size 16.

The reference for this requirement is TS 25.102 [1] clause 8.3.2.1.

Table 7.3.2.2.1a: DCH parameters in multipath Case 2 channel (3,84 Mcps TDD Option)

Parameters	Unit	Test 1	Test 2	Test 3	Test 4	Test 5
$\Sigma DPCH \_E_c$	DB	-3	0	0	0	0
$\overline{I_{or}}$						
l <sub>oc</sub>	dBm/3,84 MHz			-60		
Cell Parameter				0,1		
(note)						
DPCH	C(k,Q)	C(i,16) i=1,2	C(i,16) i=1.	C(i,16) i=1.	C(i,16) i=1.	-
Channelization			.5	.9	.8	
Codes (note)						
OCNS	C(k,Q)	C(3,16)	-	-	-	-
Channelization Code						
(note)						
Information Data	kbps	12,2	64	144	384	2048
Rate						
Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.						

Table 7.3.2.2.1b: Performance requirements in multipath Case 2 channel (3,84 Mcps TDD Option)

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	5,8	10 <sup>-2</sup>
2	5,7	10 <sup>-1</sup>
	9,2	10 <sup>-2</sup>
3	9,3	10 <sup>-1</sup>
	12,7	10 <sup>-2</sup>
4	8,8	10 <sup>-1</sup>
	12,0	10 <sup>-2</sup>
5	10,3	10 <sup>-1</sup> 10 <sup>-2</sup>
	12,7	10 <sup>-2</sup>

## 7.3.2.2.2 1,28 Mcps TDD Option

For the parameters specified in table 7.3.2.2.2a: the BLER should not exceed the piece-wise linear BLER curve specified in table 7.3.2.2.2b. The reference for this requirement is TS 25.102 [1] clause 8.3.2.1.2.

Table 7.3.2.2.2a: DCH parameters in multipath Case 2 channel (1.28 Mcps TDD Option)

<b>Parameters</b>	<u>Unit</u>	Test 1	Test 2	Test 3	Test 4
Number of DPCH <sub>o</sub>		<u>8</u>	<u>2</u>	<u>2</u>	<u>0</u>
Scrambling code and		<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
basic midamble code					
<u>number*</u>					
<b>DPCH Channelization</b>	<u>C(k,Q)</u>	<u>C(i,16)</u>	<u>C(i,16)</u>	<u>C(i,16)</u>	<u>C(i,16)</u>
Codes*		<u>i=1,2</u>	<u>i=1…8</u>	<u>i=18</u>	<u>i=110</u>
DPCH <sub>o</sub> Channelization	<u>C(k,Q)</u>	<u>C(i,16)</u>	<u>C(i,16)</u>	<u>C(i,16)</u>	<u>-</u>
Codes*		<u>3≤ i ≤10</u>	<u>9≤ i ≤10</u>	<u>9≤ i ≤10</u>	
$DPCH_o \_E_c$	<u>dB</u>	<u>-10</u>	<u>-10</u>	<u>-10</u>	<u>0</u>
$I_{or}$					
<u>l<sub>oc</sub></u>	dBm/1.28MHz	<u>-60</u>			
Information Data Rate	<u>Kbps</u>	<u>12.2</u>	<u>64</u>	<u>144</u>	<u>384</u>
*Note Refer to TS 2	5.223 for definition of	of channelization	codes, scrambling	code and basic	midamble code.

#### multipath Case 2 channel (1,28Mcps TDD Option)

Parameters Parameters Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH <sub>e</sub>		8	2	2	0
$\frac{DPCH_{o} \_E_{c}}{I_{or}}$	d₽	<del>-10</del>	<del>-10</del>	<del>-10</del>	0
₽ <sub>ec</sub>	dBm/1,28MHz		-(	<del>30</del>	
Information Data Rate	<del>Kbps</del>	<del>12,2</del>	<del>64</del>	144	<del>384</del>

Table 7.3.2.2.2b: Performance requirements in multipath Case 2 channel (1.28 Mcps TDD Option)

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
<u>1</u>	<u>13.6</u>	<u>10<sup>-2</sup></u>
<u>2</u>	<u>9.8</u>	<u>10<sup>-1</sup></u>
	<u>13.9</u>	<u>10<sup>-2</sup></u>
<u>3</u>	<u>10.3</u>	<u>10<sup>-1</sup></u>
	<u>14.4</u>	<u>10<sup>-2</sup></u>
<u>4</u>	<u>10.5</u>	<u>10<sup>-1</sup></u>
	<u>14.4</u>	<u>10<sup>-2</sup></u>

Case 2 channel (1,28Mcps TDD Option)

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
4	<del>13,2</del>	<del>10<sup>-2</sup></del>
2	<del>9,5</del>	10 <sup>-4</sup> 10 <sup>-2</sup>
	<del>13,7</del>	<del>10<sup>-2</sup></del>
3	<del>10,0</del>	<del>10</del> <sup>-4</sup>
	<del>14,0</del>	<del>10<sup>-2</sup></del>
4	<del>10,0</del>	10 <sup>-1</sup> 10 <sup>-2</sup>
	<del>14,0</del>	<del>10<sup>-2</sup></del>

### 7.3.2.3 Test purpose

While the receiver tests in clause 6 aims for the RF hardware, this performance requirement aims for the receiver's signal processing.

The test purpose is to verify the ability of the receiver to receive a predefined test signal, representing a multipath propagation channel for the wanted and for the co-channel signals from serving and adjacent cells, with a block error ratio (BLER) not exceeding a specified value.

#### 7.3.2.4 Method of test

#### 7.3.2.4.1 Initial conditions

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

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

- 1) Connect the SS, the fading simulator, the AWGN generator and additional components to the UE antenna connector as shown in figure A.10.
- 2) A call is set up according to the Generic call setup procedure. The characteristic of the call shall be according to the DL reference measurement channels (12,2 kbit/s) (64 kbit/s), (144 kbit/s), and (384 kbit/s) specified in annex C.
- 3) Enter the UE into loopback test mode and start the loopback test. (test 1) and/or activate the Ack/Nack test mode (test 1 to test 4).
- 4) The levels of the wanted signal and the co-channel signals are set according to table 7.3.2.2.1a and b for the 3,84 Mcps TDD Option and table 7.3.2.2.2a and b for the 1,28 Mcps TDD Option, respectively.

#### 7.3.2.4.2 Procedure

Measure the BLER of DCH received from the UE at the SS for all tests specified in table 7.3.2.2.1a for the 3,84 Mcps TDD Option and table 7.3.2.2.2a for the 1,28 Mcps TDD Option, respectively.

#### 7.3.2.5 Test requirements

The measured BLER shall not exceed the values indicated in table 7.3.2.2.1b for the 3,84 Mcps TDD Option and table 7.3.2.2.2b for the 1,28 Mcps TDD Option, respectively.

## 7.3.3 Multipath fading Case 3

## 7.3.3.1 Definition and applicability

The performance requirement of DCH is determined by the maximum Block Error Ratio (BLER). The BLER is specified for each individual data rate of the DCH. DCH is mapped into the Dedicated Physical Channel (DPCH).

The UE shall be tested only according to the datarates, supported. The data-rate-corresponding requirements shall apply to the UE.

#### 7.3.3.2 Minimum requirements

#### 7.3.3.2.1 3,84 Mcps TDD Option

For the parameters specified in table 7.3.3.2.1a the BLER should not exceed the piece-wise linear BLER curve specified in table 7.3.3.2.1b. These requirements are applicable for TFCS size 16.

The reference for this requirement is 3G TS 25.102 clause 8.3.3.1.1.

Table 7.3.3.2.1a: DCH parameters in multipath Case 3 channel (3,84 Mcps TDD Option)

Parameters	Unit	Test 1	Test 2	Test 3	Test 4	Test 5
$\Sigma DPCH \_E_c$	DB	-3	0	0	0	0
$\overline{I_{or}}$						
l <sub>oc</sub>	dBm/3,84 MHz			-60		
Cell Parameter (note)				0,1		
DPCH Channelization Codes (note)	C(k,Q)	C(i,16) i=1,2	C(i,16) i=1 . .5	C(i,16) i=1 . .9	C(i,16) i=1 . .8	-
OCNS Channelization Code (note)	C(k,Q)	C(3,16)	-	-	-	-
Information Data Rate	kbps	12,2	64	144	384	2048
Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.						

Table 7.3.3.2.1b: Performance requirements in multipath Case 3 channel (3,84 Mcps TDD Option)

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	4,8	10 <sup>-2</sup>
2	5,8	10 <sup>-1</sup>
	8,5	10 <sup>-2</sup>
	10,7	10 <sup>-2</sup> 10 <sup>-3</sup>
3	10,3	10 <sup>-1</sup> 10 <sup>-2</sup>
	13,3	10 <sup>-2</sup>
	16,0	10 <sup>-3</sup>
4	8,9	10 <sup>-1</sup>
	11,5	10 <sup>-2</sup> 10 <sup>-3</sup>
	13,6	10 <sup>-3</sup>
5	9,4	10 <sup>-1</sup> 10 <sup>-2</sup>
	11,5	10 <sup>-2</sup>
	13,6	10 <sup>-3</sup>

## 7.3.3.2.2 1,28 Mcps TDD Option

For the parameters specified in table 7.3.3.2.2a the BLER should not exceed the piece-wise linear BLER curve specified in table 7.3.3.2.2b. <u>The reference for this requirement is TS 25.102 [1] clause 8.3.3.1.2.</u>

Table 7.3.3.2.2a: DCH parameters in multipath Case 3 channel (1.28 Mcps TDD Option)

<u>Parameters</u>	<u>Unit</u>	Test 1	Test 2	Test 3	Test 4
Number of DPCH <sub>o</sub>		<u>8</u>	<u>2</u>	<u>2</u>	<u>0</u>
Scrambling code and basic midamble code number*		<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
DPCH Channelization Codes*	<u>C(k,Q)</u>	C(i,16) i=1,2	C(i,16) i=18	C(i,16) i=18	<u>C(i,16)</u> <u>i=110</u>
DPCH <sub>o</sub> Channelization Codes*	<u>C(k,Q)</u>	<u>C(i,16)</u> 3≤ i ≤10	<u>C(i,16)</u> 9≤ i ≤10	<u>C(i,16)</u> 9≤ i ≤10	Ξ
$\frac{DPCH_{o} \_E_{c}}{I_{or}}$	<u>В</u>	<u>-10</u>	<u>-10</u>	<u>-10</u>	<u>0</u>
<u>loc</u>	<u>dBm/1.28MHz</u>	<u>-60</u>			
Information Data Rate	<u>Kbps</u>	<u>12.2</u>	<u>64</u>	<u>144</u>	<u>384</u>
*Note Refer to TS 25.223 for definition of channelization codes, scrambling code and basic midamble code.					

#### Case 3 channel (1,28Mcps TDD Option)

Parameters Parameters Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH <sub>e</sub>		8	2	<del>2</del>	0
$\frac{DPCH_{o} \_E_{c}}{I_{or}}$	d₽	<del>-10</del>	<del>-10</del>	<del>-10</del>	θ
₽ <sub>oe</sub>	dBm/1,28MHz		-6	<del>SO</del>	
Information Data Rate	<del>Kbps</del>	<del>12,2</del>	<del>64</del>	<del>144</del>	<del>384</del>

Table 7.3.3.2.2b: Performance requirements in multipath Case 3 channel (1.28 Mcps TDD Option)

<u>Test Number</u>	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	<u>BLER</u>
<u>1</u>	<u>11.7</u>	<u>10<sup>-2</sup></u>
<u>2</u>	<u>9.0</u>	<u>10<sup>-1</sup></u>
	<u>11.7</u>	<u>10<sup>-2</sup></u>
	<u>14.3</u>	<u>10<sup>-3</sup></u>
<u>3</u>	<u>9.1</u>	<u>10<sup>-1</sup></u>
	<u>11.2</u>	<u>10<sup>-2</sup></u>
	<u>12.7</u>	10 <sup>-1</sup> 10 <sup>-2</sup> 10 <sup>-3</sup>
<u>4</u>	<u>9.3</u>	<u>10<sup>-1</sup></u>
	<u>10.8</u>	10 <sup>-1</sup> 10 <sup>-2</sup>
	<u>12.0</u>	<u>10<sup>-3</sup></u>

Case 3 channel (1,28Mcps TDD Option)

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
4	<del>10,8</del>	<del>10<sup>-2</sup></del>
2	8,3	<del>10</del> <sup>-1</sup>
	11,1	<del>10<sup>-2</sup></del>
	<del>13,8</del>	<del>10</del> ⁻³
3	<del>8,7</del>	<del>10</del> <sup>-1</sup>
	<del>10,6</del>	<del>10<sup>-2</sup></del>
	<del>11,8</del>	10 <sup>-4</sup> 10 <sup>-2</sup> 10 <sup>-3</sup> 10 <sup>-4</sup> 10 <sup>-2</sup> 10 <sup>-3</sup>
4	41,8 8,8	<del>10 1</del>
	<del>10,3</del>	10 <sup>-1</sup> 10 <sup>-2</sup> 10 <sup>-3</sup>
	<del>11,5</del>	<del>10</del> -3

#### 7.3.3.3 Test purpose

While the receiver tests in clause 6 aims for the RF hardware, this performance requirement aims for the receiver's signal processing.

The test purpose is to verify the ability of the receiver to receive a predefined test signal ,representing a multipath propagation channel for the wanted and for the co-channel signals from serving and adjacent cells, with a block error ratio (BLER) not exceeding a specified value.

#### 7.3.3.4 Method of test

#### 7.3.3.4.1 Initial conditions

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

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

- 1) Connect the SS, the fading simulator, the AWGN generator and additional components to the UE antenna connector as shown in figure A.10.
- 2) A call is set up according to the Generic call setup procedure. The characteristic of the call shall be according to the DL reference measurement channels (12,2 kbit/s)(64 kbit/s), (144 kbit/s), and (384 kbit/s) specified in annex C.
- 3) Enter the UE into loopback test mode and start the loopback test. (test 1) and/or activate the Ack/Nack test mode (test 1 to test 4).

4) The levels of the wanted signal and the co-channel signals are set according to table 7.3.3.2.1a and b for the 3,84 Mcps TDD Option and table 7.3.3.2.2a and b for the 1,28 Mcps TDD Option, respectively.

#### 7.3.3.4.2 Procedure

Measure the BLER of DCH received from the UE at the SS for all tests specified in table 7.3.3.2.1a for the 3,84 Mcps TDD Option and table 7.3.3.2.2a for the 1,28 Mcps TDD Option, respectively.

#### 7.3.3.5 Test requirements

The measured BLER shall not exceed the values indicated in table 7.3.3.2.1b for the 3,84 Mcps TDD Option and table 7.3.3.2.2b for the 1,28 Mcps TDD Option, respectively.