3GPP TSG RAN Meeting #28 **RP-050208**
Quebec, Canada, 1 - 3 June 2005

Title **CRs (Rel-6) to 25.101, 25.133, 25.141 & 34.124 under the WI "Small Technical Enhancements and Improvements"**
Source **3GPP TSG RAN WG4 (Radio)**
Agenda Item **8.11**

WG Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-050425	25.101	420		F	Rel-6	6.7.0	Correction of error in the implementation of CR 368 (in R4-040779) to 25.101	TEI6
R4-050599	25.101	431		F	Rel-6	6.7.0	Addition of DL power control response time	TEI6
R4-050364	25.133	739		F	Rel-6	6.9.0	Definition of the Reference Cell in case of initial Macro Diversity allocation	TEI6
R4-050370	25.133	740		F	Rel-6	6.9.0	Alignment of Requirements for Inter Frequency Cell Identification Test Case	TEI6
R4-050378	25.133	742		F	Rel-6	6.9.0	Correction of CPICH RSCP absolute accuracy condition	TEI6
R4-050586	25.133	756	1	F	Rel-6	6.9.0	PRACH Burst timing Accuracy	TEI6
R4-050582	25.133	759	1	F	Rel-6	6.9.0	Clarification of Test requirements on FDD/FDD Soft Handover test	TEI6
R4-050573	25.133	760		F	Rel-6	6.9.0	Correction of CPICH_RSCP Intra frequency absolute measurement accuracy side conditions for Band III	TEI6
R4-050306	25.141	365		F	Rel-6	6.9.0	Correction of spectrum mask requirements for Bands I and III	TEI6
R4-050516	25.141	371		F	Rel-6	6.9.0	Correction for the description of HS-DPCCH requirements	TEI6
R4-050377	34.124	017		F	Rel-6	6.0.0	Correction of receiver exclusion bands	TEI6

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050425**

Athens, Greece 9 - 13 May 2005

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CHANGE REQUEST

⌘ **25.101** **CR** **420** ⌘**rev** ⌘ Current version: **6.7.0** ⌘

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

Title:	⌘	Correction of error in the implementation of CR 368 (in R4-040779) to 25.101.
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI6
Date:	⌘	16/05/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
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B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
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R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	CR 368 (in R4-040779) corrected the windup effects test cases (section 8.8.3). Two things were corrected: stage 2 power level and time during stage 1. The CR 368 was incorrectly introduced in the specification because of which time in stage 1 (table 8.33) remain the same, i.e. > 15 s. This CR corrects the time during stage 1 to 5 s as agreed in CR 368 (R4-040779).
Summary of change:	⌘	The test time during stage 1 of the test as specified in table 8.33 is decreased from >15 s to 5 s. In the actual test case (TS 34.121), the stages 1, 2 and 3 are repeated 328 times. Reduction of stage 1 time will significantly decrease the overall test time.
Consequences if not approved:	⌘	The test time will be excessive.

Clauses affected:	⌘	8.8.3

Other specs affected: ⌘	Y	N		⌘	
		X	Other core specifications		
	X		Test specifications		34.121
		X	O&M Specifications		

Other comments: ⌘

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

8.8.3 Power control in downlink, wind up effects

8.8.3.1 Minimum requirements

This test is run in three stages where stage 1 is for convergence of the power control loop. In stage two the maximum downlink power for the dedicated channel is limited not to be higher than the value specified in Table 8.33. All parameters used in the three stages are specified in Table 8.33. The downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio measured values, which are averaged over one slot, during stage 3 shall be lower than the value specified in Table 8.34 more than 90% of the time.

Power control of the UE is ON during the test.

Table 8.33: Test parameter for downlink power control, wind-up effects

Parameter	Unit	Test 1		
		Stage 1	Stage 2	Stage 3
Time in each stage	s	~~>15~~5	5	0.5
$\hat{I}_{or}/I_{oc}$	dB	5		
I_{oc}	dBm/3.84 MHz	-60		
Information Data Rate	kbps	12.2		
Quality target on DTCH	BLER	0.01		
Propagation condition		Case 4		
Maximum_DL_Power	dB	7	min(-6.2,P). Note 1	7
Minimum_DL_Power	dB	-18		
DL Power Control step size, Δ_{TPC}	dB	1		
Limited Power Increase	-	"Not used"		
Note 1: *P* is the level corresponding to the average $\frac{DPCH\_E_c}{I_{or}}$ power ratio - 2 dB compared to the P-CPICH level. The average $\frac{DPCH\_E_c}{I_{or}}$ power ratio is measured during the initialisation stage after the power control loop has converged before the actual test starts.				

Table 8.34: Requirements in downlink power control, wind-up effects

Parameter	Unit	Test 1, stage 3
$\frac{DPCH\_E_c}{I_{or}}$	dB	-13.3

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050599**

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CHANGE REQUEST

⌘ **25.101** **CR** **431** ⌘ **rev** ⌘ Current version: **6.7.0** ⌘

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

Title:	⌘	Addition of DL power control response time
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI6
Date:	⌘	16/05/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
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C *(functional modification of feature)*
D *(editorial modification)*
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Use one of the following releases:

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R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	The requirements for UE DL power control were simulated using a specific TPC response time by the UTRAN but this was not captured in the core requirement. The is no requirement on the UTRAN response time but for the purposes of testing the response time needs to be defined so that testing will be done in accordance with the simulations.
Summary of change:	⌘	The UTRAN TPC response time used when creating the UE requirements is defined. The addition of this information does not imply any new requirement for the UTRAN and is included only to ensure that conformance tests are carried out in accordance with the simulation assumptions.
Consequences if not approved:	⌘	By not specifying the UTRAN response time for TPC commands it will not be possible to test the UE according to the simulation assumptions which could lead to failing a good UE.

Clauses affected:	⌘	8.8, 8.9			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
		X		Test specifications	34.121
			X	O&M Specifications	
Other comments:	⌘	*Implementation of this CR by a Release 99 UE will not cause compatibility issues*			

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8.8 Power control in downlink

Power control in the downlink is the ability of the UE receiver to converge to required link quality set by the network while using as low power as possible in downlink . If a BLER target has been assigned to a DCCH (See Annex A.3), then it has to be such that outer loop is based on DTCH and not on DCCH.

The requirements in this subclause were derived with the assumption that the UTRAN responds immediately to the uplink TPC commands by adjusting the power of the first pilot field of the DL DPCCH that commences after end of the received TPC command.

8.8.1 Power control in the downlink, constant BLER target

8.8.1.1 Minimum requirements

For the parameters specified in Table 8.29 the downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio measured values, which are averaged over one slot, shall be below the specified value in Table 8.30 more than 90% of the time. BLER shall be as shown in Table 8.30. Power control in downlink is ON during the test.

Table 8.29: Test parameter for downlink power control

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
$\hat{I}_{or}/I_{oc}$	dB	9	-1	4	9
I_{oc}	dBm/3.84 MHz	-60		-60	
Information Data Rate	kbps	12.2		64	
Reference channel in Annex A		A.3.1		A.3.5	
Target quality value on DTCH	BLER	0.01		0.1	0.001
Target quality value on DCCH	BLER	-		0.1	0.1
Propagation condition		Case 4			
Maximum_DL_Power *	dB	7			
Minimum_DL_Power *	dB	-18			
DL Power Control step size, $_{TPC}$	dB	1			
Limited Power Increase	-	"Not used"			

NOTE: Power is compared to P-CPICH as specified in [4].

Table 8.30: Requirements in downlink power control

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
$\frac{DPCH\_E_c}{I_{or}}$	dB	-16.0	-9.0	-9.0	-10.3
Measured quality on DTCH	BLER	0.01±30%	0.01±30%	0.1±30%	0.001±30%

8.8.2 Power control in the downlink, initial convergence

This requirement verifies that DL power control works properly during the first seconds after DPCH connection is established

8.8.2.1 Minimum requirements

For the parameters specified in Table 8.31 the downlink DPCH_Ec/Ior power ratio measured values, which are averaged over 50 ms, shall be within the range specified in Table 8.32 more than 90% of the time. T1 equals to 500 ms and it starts 10 ms after the DPDCH physical channel is considered established and the first uplink frame is transmitted. T2 equals to 500 ms and it starts when T1 has expired. Power control is ON during the test.

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

Table 8.31: Test parameters for downlink power control

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Target quality value on DTCH	BLER	0.01	0.01	0.1	0.1
Initial DPCH_Ec/Ior	dB	-5.9	-25.9	-3	-22.8
Information Data Rate	kbps	12.2	12.2	64	64
$\hat{I}_{or}/I_{oc}$	dB	-1			
I_{oc}	dBm/3.84 MHz	-60			
Propagation condition		Static			
Maximum_DL_Power	dB	7			
Minimum_DL_Power	dB	-18			
DL Power Control step size, Δ_{TPC}	dB	1			
Limited Power Increase	-	"Not used"			

Table 8.32: Requirements in downlink power control

Parameter	Unit	Test 1 and Test 2	Test 3 and Test 4
$\frac{DPCH\_E_c}{I_{or}}$ during T1	dB	-18.9 ≤ DPCH_Ec/Ior ≤ -11.9	-15.1 ≤ DPCH_Ec/Ior ≤ -8.1
$\frac{DPCH\_E_c}{I_{or}}$ during T2	dB	-18.9 ≤ DPCH_Ec/Ior ≤ -14.9	-15.1 ≤ DPCH_Ec/Ior ≤ -11.1

8.8.3 Power control in downlink, wind up effects

8.8.3.1 Minimum requirements

This test is run in three stages where stage 1 is for convergence of the power control loop. In stage two the maximum downlink power for the dedicated channel is limited not to be higher than the value specified in Table 8.33. All parameters used in the three stages are specified in Table 8.33. The downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio measured values, which are averaged over one slot, during stage 3 shall be lower than the value specified in Table 8.34 more than 90% of the time.

Power control of the UE is ON during the test.

Table 8.33: Test parameter for downlink power control, wind-up effects

Parameter	Unit	Test 1		
		Stage 1	Stage 2	Stage 3
Time in each stage	s	>15	5	0.5
$\hat{I}_{or}/I_{oc}$	dB	5		
I_{oc}	dBm/3.84 MHz	-60		
Information Data Rate	kbps	12.2		
Quality target on DTCH	BLER	0.01		
Propagation condition		Case 4		
Maximum_DL_Power	dB	7	min(-6.2,P). Note 1	7
Minimum_DL_Power	dB	-18		
DL Power Control step size, Δ_{TPC}	dB	1		
Limited Power Increase	-	"Not used"		

Note 1: *P* is the level corresponding to the average $\frac{DPCH\_E_c}{I_{or}}$ power ratio - 2 dB compared to the P-CPICH level. The average $\frac{DPCH\_E_c}{I_{or}}$ power ratio is measured during the initialisation stage after the power control loop has converged before the actual test starts.

Table 8.34: Requirements in downlink power control, wind-up effects

Parameter	Unit	Test 1, stage 3
$\frac{DPCH\_E_c}{I_{or}}$	dB	-13.3

8.9 Downlink compressed mode

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

The requirements in this subclause were derived with the assumption that the UTRAN responds immediately to the uplink TPC commands by adjusting the power of the first pilot field of the DL DPCCH that commences after end of the received TPC command.

8.9.1 Single link performance

The receiver single link performance of the Dedicated Traffic Channel (DCH) in compressed mode is determined by the Block Error Ratio (BLER) and transmitted DPCH_Ec/Ior power ratio in the downlink.

The compressed mode parameters are given in clause A.5. Tests 1 and 2 are using Set 1 compressed mode pattern parameters from Table A.21 in clause A.5 while tests 3 and 4 are using Set 2 compressed mode patterns from the same table.

8.9.1.1 Minimum requirements

For the parameters specified in Table 8.35 the downlink $\frac{DPCH\_E_c}{I_{or}}$ power ratio measured values, which are averaged over one slot, shall be below the specified value in Table 8.36 more than 90% of the time. The measured quality on DTCH shall be as required in Table 8.36.

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

Table 8.35: Test parameter for downlink compressed mode

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
Delta SIR1	dB	0	3	0	3
Delta SIR after1	dB	0	3	0	3
Delta SIR2	dB	0	0	0	0
Delta SIR after2	dB	0	0	0	0
$\hat{I}_{or}/I_{oc}$	dB	9			
I_{oc}	dBm/3.84 MHz	-60			
Information Data Rate	kbps	12.2			
Propagation condition		Case 2			
Target quality value on DTCH	BLER	0.01			
Maximum_DL_Power	dB	7			
Minimum_DL_Power	dB	-18			
DL Power Control step size, Δ_{TPC}	dB	1			
Limited Power Increase	-	"Not used"			

Table 8.36: Requirements in downlink compressed mode

Parameter	Unit	Test 1	Test 2	Test 3	Test 4
$\frac{DPCH\_E_c}{I_{or}}$	dB	-14.6	No requirements	-15.2	No requirements
Measured quality of compressed and recovery frames	BLER	No requirements	<0.001	No requirements	<0.001
Measured quality on DTCH	BLER	0.01 ± 30 %			

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050364**

Athens, Greece 9 - 13 May 2005

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CHANGE REQUEST

⌘ **25.133** **CR** **739** ⌘ **rev** ⌘ Current version: **6.9.0** ⌘

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

Title:	⌘	Definition of the Reference Cell in case of initial Macro Diversity allocation
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI6
Date:	⌘	16/05/2005
Category:	⌘	**F**
Release:	⌘	*Rel-6*

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R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	The current specification gives a definition of the reference cell , chosen by the UE , in case the UE is not in soft HO. This reference cell will be used to establish the Uplink timing on the UE side. In case, in response to a RACH request, the network (the RNC through NodeBs) decides to start immediately the Radio Bearer with several Radio Links, there is currently no indication about what is the reference cell selected by the UE. This CR proposes to define, in this case, the reference cell as the same cell as used for calculating the initial CFN as defined sub 8.5.15 in 25.331. The way the reference cell is further managed by the UE, during the life of the Radio Bearer, is left unchanged. Additionally, RAN2 is discussing the enhancement of the RACH measurement report capabilities.
Summary of change:	⌘	Addition of a sentence in the sub 7.1.2
Consequences if not approved:	⌘	If not approved, an ambiguity remains in case the Radio Bearer is initially started with several radio Links. Several UEs could have several behaviors.

Clauses affected: ⌘[H17]	7.1.2

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

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7 Timing and Signalling characteristics

7.1 UE Transmit Timing

7.1.1 Introduction

The UE shall have capability to follow the frame timing change of the connected Node B. The uplink DPCCH/DPDCH frame transmission takes place approximately T_0 chips after the reception of the first detected path (in time) of the corresponding downlink DPCCH/DPDCH frame from the reference cell. T_0 is defined in [2]. UE initial transmit timing accuracy, maximum amount of timing change in one adjustment, minimum and maximum adjustment rate are defined in the following requirements.

7.1.2 Requirements

The UE initial transmission timing error shall be less than or equal to ±1.5 Chip. The reference point for the UE initial transmit timing control requirement shall be the time when the first detected path (in time) of the corresponding downlink DPCCH/DPDCH frame is received from the reference cell plus T_0 chips. T_0 is defined in [2].

When the UE is not in soft handover, the reference cell shall be the one the UE has in the active set. In case the UE is initially allocated in soft handover, the reference cell shall be the same cell as used for calculating the initial CFN as defined in [16].

The cell, which is selected as a reference cell, shall remain as a reference cell even if other cells are added to the active set. In case that the reference cell is removed from the active set the UE shall start adjusting its transmit timing no later than the time when the whole active set update message is available at the UE taking the RRC procedure delay into account.

When the UE attempts to re establish all dedicated physical channel(s) after an inter-RAT, intra- or inter-frequency hard-handover failure [18], it shall resume UL transmission with the same transmit timing as used immediately before the handover attempt. After resuming transmission, transmit timing adjustment requirements defined in the remainder of this clause apply.

The UE shall be capable of changing the transmission timing according the received downlink DPCCH/DPDCH frame. The maximum amount of the timing change in one adjustment shall be ¼ Chip.

The minimum adjustment rate shall be 233ns per second. The maximum adjustment rate shall be ¼ chip per 200ms. In particular, within any given 800*d ms period, the UE transmit timing shall not change in excess of ±d chip from the timing at the beginning of this 800*d ms period, where $0 \leq d \leq 1/4$.

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050370**

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CHANGE REQUEST

⌘ **25.133** **CR** **740** ⌘ **rev** ⌘ Current version: **6.9.0** ⌘

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

Title:	⌘	Alignment of Requirements for Inter Frequency Cell Identification Test Cases
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI6
Date:	⌘	16/05/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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F *(correction)*
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R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	On the last meeting (RAN4#34) the requirement for the cell identification in the inter frequency case was tightened from 800 ms to 300 ms. The test cases have to be adjusted to the new requirement.
Summary of change:	⌘	The delay to send event 2C is changed for the test cases in A.8.2. FDD inter frequency measurements. Additionally, the test-time T1 or T2 is reduced to the new requirement. The time in section A.5.2.2.1 is also reduced accordingly.
Consequences if not approved:	⌘	The core requirements and the tests are not in line. The tests do not cover the requirement

Clauses affected:	⌘	A.8.2			
Other specs affected:	⌘	Y / N	Other core specifications	⌘	
		N / X			
		Y / N	Test specifications		34.121
		X /			
		N / X	O&M Specifications		
Other comments:	⌘				

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A.5.2.2 Handover to inter-frequency cell

A.5.2.2.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the inter frequency hard handover delay in CELL_DCH state as specified in section 5.2.2.1.

The test consists of three successive time periods, with a time duration T1, T2 and T3. The test parameters are given in tables A.5.0B and A.5.0C below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time "now" with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE during period T2, after the UE has reported event 2C T3 is defined as the end of the last TTI containing the physical channel reconfiguration message.

Table A.5.0B: General test parameters for Handover to inter-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and A.2.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 1	As specified in TS 25.101 section A.5.
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold non used frequency		dB	-18	Absolute Ec/I0 threshold for event 2C
Hysteresis		dB	0	
W non-used frequency			1	Applicable for event 2C
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	5	
T2		s	≤~~10~~5	
T3		s	1	

Table A.5.0C: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1			Channel 2		
CPICH_Ec/Ior	dB	-10			-10		
PCCPCH_Ec/Ior	dB	-12			-12		
SCH_Ec/Ior	dB	-12			-12		
PICH_Ec/Ior	dB	-15			-15		
DPCH_Ec/Ior	dB	Note 1	Note 1	Note3	N/A	N/A	Note 1
OCNS		Note 2			-0.941	-0.941	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0			-Infinity	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/Io	dB	-13			-Infinity	-14	-14
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}. Note 3: The DPCH may not be power controlled by the power control loop.							

A.5.2.2.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 220 ms from the beginning of time period T3.

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

A.8.2 FDD inter frequency measurements

A.8.2.1 Correct reporting of neighbours in AWGN propagation condition

A.8.2.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in section 8.1.2.3.

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables A.8.9 and A.8.10 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

Table A.8.9: General test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Compressed mode		A.22 set 1	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Threshold non used frequency	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range	dB	4	Applicable for event 1A
Hysteresis	dB	0	
W		1	Applicable for event 1A
W non-used frequency		1	Applicable for event 2C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1 16 on channel 2	Measurement control information is sent before the compressed mode pattern starts.
T1	s	~~10~~5	
T2	s	5	

TableA.8.10: Cell Specific parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	Note 1		N/A		N/A	
OCNS		Note 2		–0.941		–0.941	
$\hat{I}_{or}/I_{oc}$	dB	0	5.42	-Infinity	3.92	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/Io	dB	-13	-13	-Infinity	-14.5	-14	-14
Propagation Condition	AWGN						
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}							

A.8.2.1.2 Test Requirements

a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than ~~9~~3.4 seconds from the beginning of time period T1.

b) The UE shall send one Event 1A triggered measurement report, with a measurement reporting delay less than 956.2 ms 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%.

NOTE: The actual overall delays measured in the test may be up to 2 x $TTI_{UL\ DCCH}$ higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in the UL DCCH.

A.8.2.2 Correct reporting of neighbours in Fading propagation condition

A.8.2.2.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in section 8.1.2.3.The test parameters are given in Table A.8.11 and A.8.12. In the measurement control information it is indicated to the UE that event-triggered reporting 2C shall be used. The test consists of two successive time periods, each with a time duration of T1 and T2 respectively.

Table A.8.11: General test parameters for Correct reporting of neighbours in Fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Compressed mode		A.22 set 2 (TGPL1=12)	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Absolute Threshold (Ec/N0) for Event 2c	dB	-18	
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		Total 24 8 on frequency Channel 2	Measurement control information is sent before the compressed mode pattern starts.
Propagation Condition		Case 5	As specified in Annex B of TS 25.101.
Frequency offset	ppm	+/- 0.1	Frequency offset between Cell 1 and Cell 2.
T1	s	2	
T2	s	~~40~~15	

Table A.8.12: Test parameters for Correct reporting of neighbours in Fading propagation condition

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	Note 1		N/A	
OCNS		Note 2		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	0		-Infinity	-1.8
I_{oc}	dBm/3.84 MHz	-70		-70	
CPICH_Ec/Io	dB	-13		-Infinity	-14
Propagation Condition	Case 5 as specified in Annex B of TS25.101				
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.					

A.8.2.2.2 Test Requirements

a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than ~~36~~13.5 seconds from the beginning of time period T2.

b) 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%.

A.8.2.3 Correct reporting of neighbours in fading propagation condition using TGL1=14

A.8.2.3.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in section 8.1.2.3. The test parameters are given in Table A.8.12A and A.8.12B. In the measurement control information it is indicated to the UE that event-triggered reporting 2C shall be used. The test consists of two successive time periods, each with time duration of T1 and T2 respectively.

Table A.8.12A: General test parameters for Correct reporting of neighbours in Fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Compressed mode		A.22 set 4	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Absolute Threshold (Ec/N0) for Event 2c	dB	-18	
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		Total 24 8 on frequency Channel 2	Measurement control information is sent before the compressed mode pattern starts.
Propagation Condition		Case 5	As specified in Annex B of TS 25.101.
Frequency offset	ppm	+/- 0.1	Frequency offset between Cell 1 and Cell 2.
T1	s	2	
T2	s	~~6~~2	

Table A.8.12B: Test parameters for Correct reporting of neighbours in Fading propagation condition

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	Note 1		N/A	
OCNS		Note 2		-0.941	
$\hat{I}_{or}/I_{oc}$	dB	0		-Infinity	-1.8
I_{oc}	dBm/3.84 MHz	-70		-70	
CPICH_Ec/Io	dB	-13		-Infinity	-14
Propagation Condition	Case 5 as specified in Annex B of TS25.101				
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.					

A.8.2.3.2 Test Requirements

a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than ~~4.4~~1.7 seconds from the beginning of time period T2.

b) 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%.

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050378**

Athens, Greece 9 - 13 May 2005

CR-Form-v7

CHANGE REQUEST

⌘ **25.133** **CR** **742** ⌘**rev** ⌘ Current version: **6.9.0** ⌘

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

Title:	⌘	Correction of CPICH RSCP absolute accuracy condition
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI6
Date:	⌘	16/05/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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

Use one of the following releases:

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

Reason for change:	⌘	CPICH RSCP is specified dependent of the UE sensitivity. Due to a typo CPICH RSCP absolute accuracy condition for frequency band VI is missing
Summary of change:	⌘	CPICH RSCP absolute accuracy condition is corrected
Consequences if not approved:	⌘	Ambiguity will remain in specification

Clauses affected:	⌘	9.1.1.1.1			
Other specs affected:	⌘	**Y**	**N**		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

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

9.1.1 CPICH RSCP

Note: This measurement is for handover evaluation, DL open loop power control, UL open loop power control and for the calculation of pathloss.

9.1.1.1 Intra frequency measurements accuracy

The measurement period for CELL_DCH state can be found in sub clause 8.1.2.2. The measurement period for CELL_FACH state can be found in sub clause 8.4.2.2.

9.1.1.1.1 Absolute accuracy requirement

The accuracy requirements in table 9.1 are valid under the following conditions:

$CPICH\_RSCP1|_{dBm} \geq$ -114 dBm for Bands I, IV and VI,

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

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

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

Table 9.1: CPICH_RSCP Intra frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
				Band I, IV and VI	Band II and V	Band III
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	± 6	± 9	-94...-70	-92…-70	-91…-70
	dBm	± 8	± 11	-70...-50	-70…-50	-70…-70

9.1.1.1.2 Relative accuracy requirement

The relative accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on the same frequency

The accuracy requirements in table 9.2 are valid under the following conditions:

$CPICH\_RSCP1,2|_{dBm} \geq$ -114 dBm for Bands I, IV and VI,

$CPICH\_RSCP1,2|_{dBm} \geq$ -112 dBm for Bands II and V,

$CPICH\_RSCP1,2|_{dBm} \geq$ -111 dBm for Band III.

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

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

Table 9.2: CPICH_RSCP Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Band I, IV and VI	Band II and V	Band III
				Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	± 3	± 3	-94...-50	-92…-50	-91…-50

9.1.1.2 Inter frequency measurement accuracy

The measurement period for CELL_DCH state can be found in sub clause 8.1.2.3. The measurement period for CELL_FACH state can be found in sub clause 8.4.2.3.

9.1.1.2.1 Relative accuracy requirement

The relative accuracy of CPICH RSCP in inter frequency case is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on a different frequency.

The accuracy requirements in table 9.3 are valid under the following conditions:

$CPICH\_RSCP1,2|_{dBm} \geq$ -114 dBm for Bands I, IV and VI,

$CPICH\_RSCP1,2|_{dBm} \geq$ -112 dBm for Bands II and V,

$CPICH\_RSCP1,2|_{dBm} \geq$ -111 dBm for Band III.

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

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

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

Table 9.3: CPICH_RSCP Inter frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Band I, IV and VI	Band II and V	Band III
				Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	± 6	± 6	-94...-50	-92…-50	-91…-50

9.1.1.3 CPICH RSCP measurement report mapping

The reporting range is for *CPICH RSCP* is from -120 dBm ...-25 dBm.

In table 9.4 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.4

Reported value	Measured quantity value	Unit
CPICH_RSCP_LEV _-05	CPICH RSCP <-120	dBm
CPICH_RSCP_LEV _-04	-120 ≤ CPICH RSCP < -119	dBm
CPICH_RSCP_LEV _-03	-119 ≤ CPICH RSCP < -118	dBm
…	…	…
CPICH_RSCP_LEV _89	-27 ≤ CPICH RSCP < -26	dBm
CPICH_RSCP_LEV _90	-26 ≤ CPICH RSCP < -25	dBm
CPICH_RSCP_LEV _91	-25 ≤ CPICH RSCP	dBm

9.1.2 CPICH Ec/Io

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050586**

Athens, Greece 9 - 13 May 2005

CR-Form-v7.1

CHANGE REQUEST

⌘ **25.133** **CR** **756** ⌘ **rev** **1** ⌘ Current version: **6.9.0** ⌘

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

Title:	⌘	PRACH burst timing
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI6
Date:	⌘	16/05/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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F *(correction)*
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C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

Ph2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	At RAN4 #32 and RAN4 #34 the PRACH timing accuracy was recognized as a parameter missing into the specification. The existing requirement +-1.5 chip is only applicable to DPCH channel. The accuracy of the PRACH burst timing shall be defined since it has an impact on the size of the search window of the Node B, especially in case of Local Area Base Stations. The proposed value +-3.5 chips, allows to take into account, in addition to the current DPCH requirement, the inaccuracy due to the Doppler effect (see R4-050266). An additional analysis is provided in R4-050393.
Summary of change:	⌘	A new subclause is added to define requirements for PRACH burst timing.
Consequences if not approved:	⌘	No requirement for PRACH burst timing defined.

Clauses affected:	⌘	a new 7.4 subsection is added.

		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
		X		Test specifications		34.121
			X	O&M Specifications		

Other comments:	⌘	Note : this CR is intended as Rel-6 correction for the 34.121.

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7 Timing and Signalling characteristics

7.1 UE Transmit Timing

7.1.1 Introduction

The UE shall have capability to follow the frame timing change of the connected Node B. The uplink DPCCH/DPDCH frame transmission takes place approximately T_0 chips after the reception of the first detected path (in time) of the corresponding downlink DPCCH/DPDCH frame from the reference cell. T_0 is defined in [2]. UE initial transmit timing accuracy, maximum amount of timing change in one adjustment, minimum and maximum adjustment rate are defined in the following requirements.

7.1.2 Requirements

The UE initial transmission timing error shall be less than or equal to ±1.5 Chip. The reference point for the UE initial transmit timing control requirement shall be the time when the first detected path (in time) of the corresponding downlink DPCCH/DPDCH frame is received from the reference cell plus T_0 chips. T_0 is defined in [2].

When the UE is not in soft handover, the reference cell shall be the one the UE has in the active set. The cell, which is selected as a reference cell, shall remain as a reference cell even if other cells are added to the active set. In case that the reference cell is removed from the active set the UE shall start adjusting its transmit timing no later than the time when the whole active set update message is available at the UE taking the RRC procedure delay into account.

When the UE attempts to re establish all dedicated physical channel(s) after an inter-RAT, intra- or inter-frequency hard-handover failure [18], it shall resume UL transmission with the same transmit timing as used immediately before the handover attempt. After resuming transmission, transmit timing adjustment requirements defined in the remainder of this clause apply.

The UE shall be capable of changing the transmission timing according the received downlink DPCCH/DPDCH frame. The maximum amount of the timing change in one adjustment shall be ¼ Chip.

The minimum adjustment rate shall be 233ns per second. The maximum adjustment rate shall be ¼ chip per 200ms. In particular, within any given 800*d ms period, the UE transmit timing shall not change in excess of ±d chip from the timing at the beginning of this 800*d ms period, where $0 \leq d \leq 1/4$.

7.2 UE Receive - Transmit Time Difference

7.2.1 Introduction

The UE shall have the capability to be in soft handover with more than one cell. The downlink DPCH frame timing shall take place approximately T_0 chips before the transmission of the uplink DPDCH/DPCCH. The adjustment requirements for the uplink DPDCH/DPCCH timing are specified in 7.1.1. The valid range of the Receive to Transmit time difference at the UE is defined in the following requirements.

7.2.2 Requirements

A UE shall support reception, demodulation and combining of signals of a downlink DPCH when the receive timing is within a window of T_0 +/- 148 chip before the transmit timing where T_0 is defined in [2]. A UE is only required to react to TPC commands with a transmit power adjustment in the immediate next slot if the downlink receive timing of all cells in the active set is within a window of T_0 +/- 148 chip before the uplink transmit timing. If the downlink receive timing of one or more cells in the active set is outside the window of T_0 +/- 148 chip, the UE may also react with a power adjustment one slot later. The receive timing is defined as the first detected path in time.

7.3 UE timer accuracy

7.3.1 Introduction

UE timers are used in different protocol entities to control the UE behaviour.

7.3.2 Requirements

For UE timers T3xx, T_{barred}, Treselection, Penalty_time, T_{CRmax}, $T_{CrmaxHyst}$ [16], UE shall comply with the timer accuracies according to Table 7.1.

The requirements are only related to the actual timing measurements internally in the UE. They do not include the following:

- Inaccuracy in the start and stop conditions of a timer (e.g. UE reaction time to detect that start and stop conditions of a timer is fulfilled), or
- Inaccuracies due to restrictions in observability of start and stop conditions of a UE timer (e.g. TTI alignment when UE sends messages at timer expiry).

Table 7.1

Timer value [s]	Accuracy
timer value <4	± 0.1 s
timer value ≥4	± 2.5 %

7.4 PRACH Burst timing accuracy

7.4.1 Introduction

The UE shall have capability to transmit the PRACH burst according to the timing of the received access slot [18]. The PRACH burst timing accuracy is defined in the following requirement.

7.4.2 Requirements

The UE PRACH burst timing error shall be less than or equal to ± 3.5 Chips. The reference point shall be the expected timing calculated from the UE's reference detected path of the P-CCPCH.

8 UE Measurements Procedures

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050582**

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CHANGE REQUEST

⌘ **25.133** **CR** **759** ⌘ **rev** **1** ⌘ Current version: **6.9.0** ⌘

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

Title:	⌘	Clarification of Test requirements on FDD/FDD Soft Handover test
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI6
Date:	⌘	16/05/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	Current test requirements in A.5.1.2. denotes that measured quality on the DTCH of the UE downlink during T6 shall be BLER = 0.01±30%. However, since 20ms TTI is used in this test, the beginning of T6 is not aligned with the beginning of TTI. (first half of TTI is included in T5 (10ms) and second half of TTI is included in T6 (10ms).) Because the DPCH from cell1 is switched off at the beginning of T5, the quality of first half of the TTI may not stable and it is easy to receive this TTI erroneously. Thus, it should be clarified that TTI that only the half is included in T6 is not included in measuring object.
Summary of change:	⌘	Time duration T5 is changed from 10ms to 20ms. **Isolated Impact Analysis** Since only test parameter related to time duration is changed, there is no impact for UE implementation.
Consequences if not approved:	⌘	Unstable TTI is included in quality measuement, there is a possibility that UE, which achive the requirement for the soft handover delay, cannot pass the test.

Clauses affected:	⌘	A.5.1

		Y	N			
Other specs Affected:	⌘		X	Other core specifications	⌘	
		X		Test specifications		TS34.121
			X	O&M Specifications		

Other comments:	⌘	Implementation of this CR by a Release 99 UE will not cause compatibility issues.

How to create CRs using this form:

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

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

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

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

A.5.1 FDD/FDD Soft Handover

A.5.1.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the soft handover delay in CELL_DCH state specified in section 5.1.2.

The test parameters are given in Table A.5A and A.5B below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A shall be used, and that CPICH Ec/Io and SFN-CFN observed time difference shall be reported together with Event 1A. The test consists of six successive time periods, with a time duration of T1, T2, T3, T4, T5 and T6 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

Table A.5A: General test parameters for Soft handover

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range		dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting deactivation threshold			0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	5	
T2		s	3	
T3		s	0.5	
T4		ms	60	This is the requirement on active set update delay, see section 5.1.2.2, where KC=1 and OC=0.
T5		ms	~~10~~ 20	
T6		s	2	

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050573**

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CR-Form-v7

CHANGE REQUEST

⌘ **25.133** **CR** **760** ⌘ **rev** ⌘ Current version: **6.9.0** ⌘

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

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

Title:	⌘	Correction of CPICH_RSCP Intra frequency absolute measurement accuracy side conditions for Band III
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI6
Date:	⌘	16/05/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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

Use one of the following releases:

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

Reason for change:	⌘	The side conditions for CPICH_RSCP Intra frequency absolute accuracy for Band III are wrong.
Summary of change:	⌘	The side conditions for Band III in Table 9.1: CPICH_RSCP Intra frequency absolute accuracy are corrected, range –70…-70 changed to –70…-50.
Consequences if not approved:	⌘	No CPICH_RSCP Intra frequency absolute measurement accuracy is specified for Band III UE above –70dBm CPICH_RSCP.

Clauses affected:	⌘	9.1.1.1.1

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

Other comments: ⌘

How to create CRs using this form:

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

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

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

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

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

9.1.1 CPICH RSCP

Note: This measurement is for handover evaluation, DL open loop power control, UL open loop power control and for the calculation of pathloss.

9.1.1.1 Intra frequency measurements accuracy

The measurement period for CELL_DCH state can be found in sub clause 8.1.2.2. The measurement period for CELL_FACH state can be found in sub clause 8.4.2.2.

9.1.1.1.1 Absolute accuracy requirement

The accuracy requirements in table 9.1 are valid under the following conditions:

$CPICH\_RSCP1|_{dBm} \geq$ -114 dBm for Bands I, IV and VI,

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

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

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

Table 9.1: CPICH_RSCP Intra frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
				Band I, IV and VI	Band II and V	Band III
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	± 6	± 9	-94...-70	-92…-70	-91…-70
	dBm	± 8	± 11	-70...-50	-70…-50	-70…~~-70~~-50

9.1.1.1.2 Relative accuracy requirement

The relative accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on the same frequency

The accuracy requirements in table 9.2 are valid under the following conditions:

$CPICH\_RSCP1,2|_{dBm} \geq$ -114 dBm for Bands I, IV and VI,

$CPICH\_RSCP1,2|_{dBm} \geq$ -112 dBm for Bands II and V,

$CPICH\_RSCP1,2|_{dBm} \geq$ -111 dBm for Band III.

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

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

Table 9.2: CPICH_RSCP Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Band I, IV and VI	Band II and V	Band III
				Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	± 3	± 3	-94...-50	-92…-50	-91…-50

9.1.1.2 Inter frequency measurement accuracy

The measurement period for CELL_DCH state can be found in sub clause 8.1.2.3. The measurement period for CELL_FACH state can be found in sub clause 8.4.2.3.

9.1.1.2.1 Relative accuracy requirement

The relative accuracy of CPICH RSCP in inter frequency case is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on a different frequency.

The accuracy requirements in table 9.3 are valid under the following conditions:

$CPICH\_RSCP1,2|_{dBm} \geq$ -114 dBm for Bands I, IV and VI,

$CPICH\_RSCP1,2|_{dBm} \geq$ -112 dBm for Bands II and V,

$CPICH\_RSCP1,2|_{dBm} \geq$ -111 dBm for Band III.

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

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

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

Table 9.3: CPICH_RSCP Inter frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions		
		Normal condition	Extreme condition	Band I, IV and VI	Band II and V	Band III
				Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	± 6	± 6	-94...-50	-92…-50	-91…-50

9.1.1.3 CPICH RSCP measurement report mapping

The reporting range is for *CPICH RSCP* is from -120 dBm ...-25 dBm.

In table 9.4 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.4

Reported value	Measured quantity value	Unit
CPICH_RSCP_LEV _-05	CPICH RSCP <-120	dBm
CPICH_RSCP_LEV _-04	-120 ≤ CPICH RSCP < -119	dBm
CPICH_RSCP_LEV _-03	-119 ≤ CPICH RSCP < -118	dBm
…	…	…
CPICH_RSCP_LEV _89	-27 ≤ CPICH RSCP < -26	dBm
CPICH_RSCP_LEV _90	-26 ≤ CPICH RSCP < -25	dBm
CPICH_RSCP_LEV _91	-25 ≤ CPICH RSCP	dBm

9.1.2 CPICH Ec/Io

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050306**

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CHANGE REQUEST

⌘ **25.141** **CR** **365** ⌘ **rev** ⌘ Current version: **6.9.0** ⌘

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

Title:	⌘	Correction of spectrum mask requirements for Bands I and III
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI6
Date:	⌘	16/05/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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

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

Reason for change:	⌘	The note for the spectrum emission tables says that the additional requirement for Bands II, IV and V should be considered for establishing the minimum requirements and test requirements for “Bands I, II, III, IV, V”. This is incorrect as it should only apply to Bands II, IV and V.
Summary of change:	⌘	Remove the reference to Bands I and III in the Table notes.
Consequences if not approved:	⌘	The notes for the spectrum efficiency tables would be inconsistent with itself and with the core requirement in TS 25.104.

Clauses affected:	⌘	6.5.2.1

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

Other comments: ⌘

6.5.2 Out of band emission

Out of band emissions are unwanted emissions immediately outside the channel bandwidth resulting from the modulation process and non-linearity in the transmitter but excluding spurious emissions. This out of band emission limit is specified in terms of a spectrum emission mask and adjacent channel leakage power ratio for the transmitter.

6.5.2.1 Spectrum emission mask

6.5.2.1.1 Definitions and applicability

The mask defined in Tables 6.14 to 6.17 below may be mandatory in certain regions. In other regions this mask may not be applied.

6.5.2.1.2 Minimum Requirements

For regions where this clause applies, the requirement shall be met by a base station transmitting on a single RF carrier configured in accordance with the manufacturer's specification. Emissions shall not exceed the maximum level specified in tables 6.14 to 6.17 for the appropriate BS maximum output power, in the frequency range from Δf =2.5 MHz to Δf_{max} from the carrier frequency, where:

- Δf is the separation between the carrier frequency and the nominal –3dB point of the measuring filter closest to the carrier frequency.
- f_offset is the separation between the carrier frequency and the centre of the measurement filter;
- f_offset_{max} is either 12.5 MHz or the offset to the UMTS Tx band edge as defined in subclause 3.4.1, whichever is the greater.
- Δf_{max} is equal to f_offset_{max} minus half of the bandwidth of the measuring filter.

Table 6.14: Spectrum emission mask values, BS maximum output power P ≥ 43 dBm

Frequency offset of measurement filter –3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Minimum requirement Band I, II, III, IV, V	Additional requirements Band II, IV and V [1]	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	-15dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	$-14dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$	-15dBm	30 kHz
	3.515MHz ≤ f_offset < 4.0MHz	-26 dBm	NA	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0 MHz ≤ f_offset < 8.0MHz	-13 dBm	NA	1 MHz
7.5 MHz ≤ Δf ≤ Δf_{max}	8.0 MHz ≤ f_offset < f_offset_{max}	-13 dBm	NA	1 MHz
NOTE 1: The minimum requirement for operation in band ~~I,~~ II, ~~III,~~ IV, V is the lower power of the minimum requirement for band I, II, III, IV, V and the additional requirement for band II, IV and V.				

Table 6.15: Spectrum emission mask values, BS maximum output power 39 ≤ P < 43 dBm

Frequency offset of measurement filter –3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Minimum requirement Band I, II, III, IV, V	Additional requirements Band II, IV and V [1]	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	-15dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	$-14dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$	-15dBm	30 kHz
	3.515MHz ≤ f_offset < 4.0MHz	-26 dBm	NA	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0 MHz ≤ f_offset < 8.0MHz	-13 dBm	NA	1 MHz
7.5 MHz ≤ Δf ≤ Δf_{max}	8.0MHz ≤ f_offset < f_offset_{max}	P – 56 dB	NA	1 MHz
NOTE 1: The minimum requirement for operation in band ~~I,~~ II, ~~III,~~ IV, V is the lower power of the minimum requirement for band I, II, III, IV, V and the additional requirement for band II, IV and V.				

Table 6.16: Spectrum emission mask values, BS maximum output power 31 ≤ P < 39 dBm

Frequency offset of measurement filter –3dB point,Δf	Frequency offset of measurement filter centre frequency, f_offset	Minimum requirement Band I, II, III, IV, V	Additional requirements Band II, IV and V [1]	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	P – 53 dB	-15dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	$P - 53dB - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$	-15dBm	30 kHz
	3.515MHz ≤ f_offset < 4.0MHz	P – 65 dB	NA	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0 MHz ≤ f_offset < 8.0MHz	P – 52 dB	NA	1 MHz
7.5 MHz ≤ Δf ≤ Δf_{max}	8.0MHz ≤ f_offset < f_offset_{max}	P – 56 dB	NA	1 MHz
NOTE 1: The minimum requirement for operation in band ~~I,~~ II, ~~III,~~ IV, V is the lower power of the minimum requirement for band I, II, III, IV, V and the additional requirement for band II, IV and V.				

Table 6.17: Spectrum emission mask values, BS maximum output power P < 31 dBm

Frequency offset of measurement filter –3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Minimum requirement Band I, II, III, IV, V	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-22 dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	$-22dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$	30 kHz
	3.515MHz ≤ f_offset < 4.0MHz	-34 dBm	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0 MHz ≤ f_offset < 8.0MHz	-21 dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf_{max}	8.0MHz ≤ f_offset < f_offset_{max}	-25 dBm	1 MHz

The normative reference for this requirement is in TS 25.104 [1] subclause 6.6.2.1

6.5.2.1.3 Test purpose

This test measures the emissions of the BS, close to the assigned channel bandwidth of the wanted signal, while the transmitter is in operation.

6.5.2.1.4 Method of test

6.5.2.1.4.1 Initial conditions

Test environment: normal; see subclause 4.4.1.

RF channels to be tested: B, M and T; see subclause 4.8

1) Set-up the equipment as shown in annex B.
   As a general rule, the resolution bandwidth of the measuring equipment should be equal to the measurement bandwidth. However, to improve measurement accuracy, sensitivity, efficiency and avoiding e.g. carrier leakage, the resolution bandwidth may be smaller than the measurement bandwidth. When the resolution bandwidth is smaller than the measurement bandwidth, the result should be integrated over the measurement bandwidth in order to obtain the equivalent noise bandwidth of the measurement bandwidth.

2) Measurements with an offset from the carrier centre frequency between 2,515 MHz and 4.0 MHz shall use a 30 kHz measurement bandwidth.

3) Measurements with an offset from the carrier centre frequency between 4.0 MHz and (f_offset_{max} – 500 kHz).shall use a 1 MHz measurement bandwidth.

4) Detection mode: True RMS.

6.5.2.1.4.2 Procedures

1) Set the BS to transmit a signal in accordance to test model 1, subclause 6.1.1.1 at the manufacturer's specified maximum output power.

2) Step the centre frequency of the measurement filter in contiguous steps and measure the emission within the specified frequency ranges with the specified measurement bandwidth.

6.5.2.1.5 Test requirements

The measurement results in step 2 of 6.5.2.1.4.2 shall not exceed the test requirements specified in tables 6.18 to 6.21 for the appropriate BS maximum output power.

Table 6.18: Spectrum emission mask values, BS maximum output power P ≥ 43 dBm

Frequency offset of measurement filter – 3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test Requirement Band I, II, III, IV, V	Additional Requirements Band II, IV and V [1]	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-12.5 dBm	-15dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	$-12.5dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$	-15dBm	30 kHz
	3.515MHz ≤ f_offset < 4.0MHz	-24.5 dBm	NA	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0 MHz ≤ f_offset < 8.0MHz	-11.5 dBm	-13dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf_{max}	8.0 MHz ≤ f_offset < f_offset_{max}	-11.5 dBm		1 MHz
NOTE 1: The minimum requirement for operation in band ~~I,~~ II, ~~III,~~ IV, V is the lower power of the minimum requirement for band I, II, III, IV, V and the additional requirement for band II, IV and V.				

Table 6.19: Spectrum emission mask values, BS maximum output power 39 ≤ P < 43 dBm

Frequency offset of measurement filter – 3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test Requirement Band I, II, III, IV, V	Additional Requirements Band II, IV and V [1]	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-12.5 dBm	-15dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	$-12.5dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$	-15dBm	30 kHz
	3.515MHz ≤ f_offset < 4.0MHz	-24.5 dBm	NA	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0 MHz ≤ f_offset < 8.0MHz	-11.5 dBm	-13dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf_{max}	8.0MHz ≤ f_offset < f_offset_{max}	P – 54.5 dB	-13dBm	1 MHz
NOTE 1: The minimum requirement for operation in band ~~I,~~ II, ~~III,~~ IV, V is the lower power of the minimum requirement for band I, II, III, IV, V and the additional requirement for band II, IV and V.				

Table 6.20: Spectrum emission mask values, BS maximum output power 31 ≤ P < 39 dBm

Frequency offset of measurement filter – 3dB point,Δf	Frequency offset of measurement filter centre frequency, f_offset	Test Requirement Band I, II, III, IV, V	Additional RequirementsB and II, IV and V [1]	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	P – 51.5 dB	-15dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	$P - 51.5dB - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$	-15dBm	30 kHz
	3.515MHz ≤ f_offset < 4.0MHz	P – 63.5 dB	NA	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0 MHz ≤ f_offset < 8.0MHz	P – 50.5 dB	-13dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf_{max}	8.0MHz ≤ f_offset < f_offset_{max}	P – 54.5 dB	-13dBm	1 MHz
NOTE 1: The minimum requirement for operation in band ~~I,~~ II, ~~III,~~ IV, V is the lower power of the minimum requirement for band I, II, III, IV, V and the additional requirement for band II, IV and V.				

Table 6.21: Spectrum emission mask values, BS maximum output power P < 31 dBm

Frequency offset of measurement filter –3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test Requirement Band I, II, III, IV, V	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-20.5 dBm	30 kHz
2.7 ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	$-20.5dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$	30 kHz
	3.515MHz ≤ f_offset < 4.0MHz	-32.5 dBm	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0 MHz ≤ f_offset < 8.0MHz	-19.5 dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf_{max}	8.0MHz ≤ f_offset < f_offset_{max}	-23.5 dBm	1 MHz

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in subclause 4.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in Annex F.

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050516**

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CHANGE REQUEST

⌘ **25.141** **CR** **371** ⌘ **rev** ⌘ Current version: **6.9.0** ⌘

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

Title:	⌘	Correction for the description of HS-DPCCH requirements
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI6
Date:	⌘	16/05/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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

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

Reason for change:	⌘	The some desscription for HS-DPCCH requirements was missed.
Summary of change:	⌘	Measurement of performance requirement is added. And also Table of Test conditions is added. **Isolated Impact Analysis** Isolated impact statement: This CR is just the clarification for the HS-DPCCH requirements.
Consequences if not approved:	⌘	HS-DPCCH requirements are still unclear.

Clauses affected:	⌘	4.1.4; C.1.6; C.1.8

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

Other comments: ⌘

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

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

4.1.4 Measurement of performance requirement

Table 4.1B: Maximum Test System Uncertainty for Performance Requirements

Subclause	Maximum Test System Uncertainty[1]	Derivation of Test System Uncertainty
8.2, Demodulation in static propagation condition	± 0.4dB	Wanted/AWGN: ± 0.4dB (relative uncertainty for E_b/N_0) (AWGN: ±1dB)
8.3, Demodulation of DCH in multiplath fading conditions	± 0.6dB	Fader: ± 0.5dB Wanted/AWGN: ± 0.4dB (relative) Combined relative uncertainty for E_b/N_0: ± 0.6dB
8.4 Demodulation of DCH in moving propagation conditions	± 0.6dB	Fader: ± 0.5dB Wanted/AWGN: ± 0.4dB (relative) Combined relative uncertainty for E_b/N_0: ± 0.6dB
8.5 Demodulation of DCH in birth/death propagation conditions	± 0.6dB	Fader: ± 0.5dB Wanted/AWGN: ± 0.4dB (relative) Combined relative uncertainty for E_b/N_0: ± 0.6dB
8.8.1 RACH preamble detection in static propagation conditions	± 0.4dB	Wanted/AWGN: ± 0.4dB (relative uncertainty for E_c/N_0) (AWGN: ±1dB)
8.8.2 RACH preamble detection in multipath fading case 3	± 0.6dB	Fader: ± 0.5dB Wanted/AWGN: ± 0.4dB (relative) Combined relative uncertainty for E_c/N_0: ± 0.6dB
8.8.3 Demodulation of RACH message in static propagation conditions	± 0.4dB	Wanted/AWGN: ± 0.4dB (relative uncertainty for E_b/N_0) (AWGN: ±1dB)
8.8.4 Demodulation of RACH message in multipath fading case 3	± 0.6dB	Fader: ± 0.5dB Wanted/AWGN: ± 0.4dB (relative) Combined relative uncertainty for E_b/N_0: ± 0.6dB
8.9.3 Demodulation of CPCH message in static propagation conditions	± 0.4 dB	Wanted/AWGN: ± 0.4dB (relative uncertainty for E_b/N_0) (AWGN: ±1dB
8.9.4 Demodulation of CPCH message in multipath fading case 3	± 0.6 dB	Fader: ± 0.5dB Wanted/AWGN: ± 0.4dB (relative) Combined relative uncertainty for E_b/N_0: ± 0.6dB
8.10 Site Selection Diversity Transmission (SSDT) Mode	± 0.4dB	Wanted/AWGN: ± 0.4dB (relative) (AWGN: ±1dB)
8.11.1 ACK false alarm in static propagation conditions	± 0.4dB	Wanted/AWGN: ± 0.4dB (relative uncertainty for E_c/N_0) (AWGN: ±1dB)
8.11.2 ACK false alarm in multipath fading conditions	± 0.6dB	Fader: ± 0.5dB Wanted/AWGN: ± 0.4dB (relative) Combined relative uncertainty for E_c/N_0: ± 0.6dB
8.11.3 ACK mis-detection in static propagation conditions	± 0.4dB	Wanted/AWGN: ± 0.4dB (relative uncertainty for E_c/N_0) (AWGN: ±1dB)
8.11.4 ACK mis-detection in multipath fading conditions	± 0.6dB	Fader: ± 0.5dB Wanted/AWGN: ± 0.4dB (relative) Combined relative uncertainty for E_c/N_0: ± 0.6dB
Note 1: Only the overall stimulus error is considered here. The effect of errors in the BER/FER measurements due to finite test duration is not considered.		

--- next changed section ---

C.1.6 Good balance between test time and statistical significance

Three independent test parameters are introduced into the test and shown in Table C.1. These are the obvious basis of test time and statistical significance. From the first two of them four dependent test parameters are derived. The third independent test parameter is justified separately.

Table C.1: independent and dependent test parameters

Independent test parameters			Dependent test parameters		
Test Parameter	**Value**	**Reference**	**Test parameter**	**Value**	**Reference**
Bad DUT factor M	1.5	Tables C.3 to C.9~~7~~	Early pass/fail condition	Curves	Subclause C.1.5 Figure C.1.9
Final probability of wrong pass/fail decision F	0.2%, (0.02%, note 2)	Subclause C.1.5	Target number of error events	345	Tables C.3 to C.9~~7~~
			Probability of wrong pass/fail decision per test step D	0.0085%, (0.0008% and 0.008%, note 2)	
			Test limit factor TL	1.234	Tables C.3 to C.9~~7~~
Minimum test time		Table C.2			

The minimum test time is derived from the following justification:

1) For no propagation conditions and static propagation condition

   No early fail calculated from fractional number of errors <1 (see note 1)

2) For multipath fading condition

   No stop of the test until 990 wavelengths are crossed with the speed given in the fading profile.

3) For birth death propagation conditions

   No stop of the test until 200 birth death transitions occur

4) For moving propagation conditions: 628 sec

   This is necessary in order to pass all potential critical points in the moving propagation profile 4 times: Maximum rake window, Maximum adjustment speed, Intersection of moving taps

Table C.2: minimum Test time

Fading profile	Minimum test time
Multipath propagation 3 km/h	164 sec
Multipath propagation 50 km/h	9.8 sec
Multipath propagation 120 km/h	4.1 sec
Multipath propagation 250 km/h	2 sec
Birth Death propagation	38.2 sec
Moving propagation	628 sec

In table C.3 to C.9~~8~~ the minimum test time is converted in minimum number of samples.

--- next changed section ---

C.1.8 Test conditions for BER,BLER,Pd tests

Table C.3: Test conditions for BER tests

Type of test (BER)	Propagation conditions	Test requirement (BER)	Test limit (BER)= Test requirement (BER)x TL TL	Target number of error events (time)	Minimum number of samples	Prob that good unit will fail = Prob that bad unit will pass (%)	Bad unit BER factor M
Reference Sensitivity Level	-	0.001	1.234	345 (22.9s)	Note 1	0.2	1.5
Dynamic Range	-	0.001	1.234	345 (22.9s)	Note 1	0.2	1.5
Adjacent Channel Selectivity	-	0.001	1.234	345 (22.9s)	Note 1	0.2	1.5
Blocking Characteristics Pass condition Note 2	-	0.001	1.251	402 (26.3s)	Note 1	0.2	1.5
Blocking Characteristics Fail condition Note 2	-	0.001	1.251	402 (26.3s)	Note 1	0.02	1.5
Intermodulation Characteristics	-	0.001	1.234	345 (22.9s)	Note 1	0.2	1.5
Verification of internal BER calculation	Not applicable, TS 34.121 Annex F.6.1.10 Dual limit BLER Tests may be applied in principle						

Table C.4: Test conditions for BLER tests

Type of test (BLER)	Information Bit rate	Test requirement (BLER)	Test limit (BLER)= Test requirement (BLER)x TL TL	Target number of error events (time)	Minimum number of samples (time)	Prob that bad unit will pass = Prob that good unit will fail (%)	Bad unit BLER factor M
Demodulation in Static Propagation conditions	12.2 64 144 384	0.01 0.1 0.01 0.1 0.01 0.1 0.01	1.234	345 (559s) (112s) (1118s) (55.9s) (559s) (28s) (280s)	Note 1	0.2	1.5
Demodulation of DCH in Multi-path Fading Propagation conditions 3km/h (Case 1, Case 2)	12.2 64 144 384	0.01 0.1 0.01 0.1 0.01 0.1 0.01	1.234	345 (559s) (112s) (1118s) (55.9s) (559s) (28s) (280s)	(164s) 8200 4100 4100 8200 8200 16400 16400	0.2	1.5
Demodulation of DCH in Multi-path Fading Propagation conditions 120 km/h (Case3)	12.2 64 144 384	0.01 0.001 0.1 0.01 0.001 0.1 0.01 0.001 0.1 0.01 0.001	1.234	345 (559s) (5592s) (112s) (1118s) (11183s) (55.9s) (559s) (5592s) (28s) (280s) (2796s)	(4.1s) 205 205 103 103 103 205 205 205 410 410 410	0.2	1.5
Demodulation of DCH in Multi-path Fading Propagation conditions 250 km/h (Case 4)	12.2 64 144 384	0.01 0.001 0.1 0.01 0.001 0.1 0.01 0.001 0.1 0.01 0.001	1.234	345 (559s) (5592s) (112s) (1118s) (11183s) (55.9s) (559s) (5592s) (28s) (280s) (2796s)	(2s) 100 100 50 50 50 100 100 100 200 200 200	0.2	1.5
Demodulation of DCH in moving propagation conditions	12.2 64	0.01 0.1 0.01	1.234	345 (559s) (112s) (1118s)	(628s) 31400 15700 15700	0.2	1.5
Demodulation of DCH in birth/death propagation conditions	12.2 64	0.01 0.1 0.01	1.234	345 (559s) (112s) (1118s)	(38.2s) 1910 955 955	0.2	1.5
Verification of internal BLER calculation	Not applicable, TS 34.121 Annex F.6.1.10 Dual limit BLER Tests may be applied in principle						

Table C.5: Test conditions for Pd tests (Probability of detection)

Type of test	Information Bit rate Not applicable	Test requirement (1-Pd)	Test limit (1-Pd)= Test requirement (1-Pd)x TL TL	Target number of error events (time)	Minimum number of samples (time)	Prob that bad unit will pass = Prob that good unit will fail (%)	Bad unit BLER factor M
RACH preamble detection in static propagation conditions		0.01 0.001	1.234	345 (29.8s) (298s) (net preamble TX time)	Note 1	0.2	1.5
RACH preamble detection in multipath fading conditions case3 (120 km/h)		0.01 0.001	1.234	345 (29.8s) (298s) (net preamble TX time)	3844 preambles (4.1s)	0.2	1.5

Table C.6: Test conditions for BLER tests

Type of test (BLER)	Information Bits	Test requirement (BLER)	Test limit (BLER)= Test requirement (BLER)x TL TL	Target number of error events (time)	Minimum number of samples (time)	Prob that bad unit will pass = Prob that good unit will fail (%)	Bad unit BLER factor M
Demodulation of RACH message in static propagation conditions	168 bits 360 bits	0.1 0.01 0.1 0.01	1.234	345 (55.9s) (559s) (55.9s) (559s) (net message TX time)	Note 1	0.2	1.5
Demodulation of RACH message in multipath fading case 3	168 bits 360 bits	0.1 0.01 0.1 0.01	1.234	345 55.9s) (559s) (55.9s) (559s) (net message TX time)	205 messages (4.1s)	0.2	1.5

Table C.7: Test conditions for Pd tests (Probability of detection)

Type of test	Information Bit rate Not applicable	Test requirement (1-Pd)	Test limit (1-Pd)= Test requirement (1-Pd)x TL TL	Target number of error events (time)	Minimum number of samples (time)	Prob that bad unit will pass = Prob that good unit will fail (%)	Bad unit BLER factor M
CPCH access preamble and collision detection preamble in static propagation conditions		0.01 0.001	1.234	345 (29.8s) (298s) (net preamble TX time)	Note 1	0.2	1.5
CPCH access preamble and collision detection preamble in multipath fading conditions case3 (120 km/h)		0.01 0.001	1.234	345 (29.8s) (298s) (net preamble TX time)	3844 preambles	0.2	1.5

Table C.8: Test conditions for BLER tests

Type of test (BLER)	InformationBits	Test requirement (BLER)	Test limit (BLER)= Test requirement (BLER)x TL TL	Target number of error events (time)	Minimum number of samples (time)	Prob that bad unit will pass = Prob that good unit will fail (%)	Bad unit BLER factor M
Demodulation of CPCH message in static propagation conditions	168 bits 360 bits	0.1 0.01 0.1 0.01	1.234	345 (55.9s) (559s) (55.9s) (559s) (net message TX time)	Note 1	0.2	1.5
Demodulation of RACH message in multipath fading case 3	168 bits 360 bits	0.1 0.01 0.1 0.01	1.234	345 (55.9s) (559s) (55.9s) (559s) (net message TX time)	(4.1s) 205 messages	0.2	1.5

Table C.9: Test conditions for Error ratio tests

Type of test	Information Bit rate Not applicable	Test requirement error ratio	Test limit (error ratio) = Test requirement (error rate) x TL TL	Target number of error events (time)	Minimum number of samples (time)	Prob that bad unit will pass = Prob that good unit will fail (%)	Bad unit Error ratio factor M
ACK false alarm in static propagation conditions		0.01	1.234	345 (18.6s) (net ACK/NACK TX time)	Note 1	0.2	1.5
ACK false alarm in multipath fading conditions (Case 1, Case 2)		0.01	1.234	345 (18.6s) (net ACK/NACK TX time)	(164s) 246000 ACK/NAK slots	0.2	1.5
ACK false alarm in multipath fading conditions (Case 3)		0.01	1.234	345 (18.6s) (net ACK/NACK TX time)	(4.1s) 6150 ACK/NAK slots	0.2	1.5
ACK mis-detection in static propagation conditions		0.01	1.234	345 (18.6s) (net ACK/NACK TX time)	Note 1	0.2	1.5
ACK mis-detection in multipath fading conditions (Case 1, Case 2)		0.01	1.234	345 (18.6s) (net ACK/NACK TX time)	(164s) 246000 ACK/NAK slots	0.2	1.5
ACK mis-detection in multipath fading conditions (Case 3)		0.01	1.234	345 (18.6s) (net ACK/NACK TX time)	(4.1s) 6150 ACK/NAK slots	0.2	1.5

3GPP TSG RAN WG4 (Radio) Meeting #35 R4-050377

Athens, Greece 9 - 13 May 2005

CR-Form-v7

CHANGE REQUEST

⌘ 34.124 CR 017 ⌘rev ⌘ Current version: 6.0.0 ⌘

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

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

Title:	⌘	Correction of receiver exclusion bands
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI6
Date:	⌘	16/05/2005
Category:	⌘	F
Release:	⌘	Rel-6

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

Use one of the following releases:

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

Reason for change:	⌘	Receiver exclusion bands for frequency bands IV, V and VI are missing
Summary of change:	⌘	Receiver exclusion bands for frequency bands IV, V and VI are added
Consequences if not approved:	⌘	Immunity tests in frequency bands IV, V and VI will not consider receiver exclusion band. UE behaving correct may unnecessarily fail the test.

Clauses affected:	⌘	4.4

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

Other comments: ⌘

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4.4 Receiver exclusion band

The receiver exclusion band for terminals extends from the lower frequency of the allocated receiver band minus 85 MHz to the upper frequency of the allocated receiver band plus 85 MHz. The exclusions bands are as set out below:

UTRA/FDD

a) 2025 MHz to 2255 MHz (Band I)

b) 1845 MHz to 2075 MHz (Band II)

c) 1720 MHz to 1965 MHz (Band III)

d) 2025 MHz to 2240 MHz (Band IV)

e) 784 MHz to 979 MHz (Band V)

f) 790 MHz to 970 MHz (Band VI)

UTRA/TDD

a) 1815 MHz to 2005 MHz

1925 MHz to 2110 MHz

b) 1765 MHz to 2075 MHz (ITU-R, Region 2)

c) 1825 MHz to 2015 MHz (ITU-R, Region 2)

5 Performance assessment