TSG RAN Meeting #22   **RP-030595**
Maui, Hawaii, US, 9 - 12 December 2003

Title	**CRs (Rel-5 and Rel-6 Category A) to TS 25.101 for HSDPA**
Source	**TSG RAN WG4**
Agenda Item	**7.5.5**

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-030865	25.101	275		F	Rel-5	5.8.0	Power allocation for HS-SCCH in FRC test	HSDPA-RF
R4-031075	25.101	302		A	Rel-6	6.2.0	Power allocation for HS-SCCH in FRC test	HSDPA-RF
R4-031101	25.101	296	3	F	Rel-5	5.8.0	Clarification to HSDPA OCNS definition	HSDPA-RF
R4-031102	25.101	297	3	A	Rel-6	6.2.0	Clarification to HSDPA OCNS definition	HSDPA-RF
R4-031077	25.101	276	1	F	Rel-5	5.8.0	Corrections of CQI reporting section	HSDPA-RF
R4-031078	25.101	303		A	Rel-6	6.2.0	Corrections of CQI reporting section	HSDPA-RF
R4-031079	25.101	272	1	F	Rel-5	5.8.0	Correction for FRC test in Closed loop mode 1	HSDPA-RF
R4-031080	25.101	304		A	Rel-6	6.2.0	Correction for FRC test in Closed loop mode 1	HSDPA-RF
R4-031084	25.101	273	1	F	Rel-5	5.8.0	DTX handling for CQI test in fading channel	HSDPA-RF
R4-031085	25.101	305		A	Rel-6	6.2.0	DTX handling for CQI test in fading channel	HSDPA-RF
R4-031140	25.101	283	2	F	Rel-5	5.8.0	Additional Specification of CQI Testing for UE Capability Categories 11 and 12	HSDPA-RF
R4-031141	25.101	309	1	A	Rel-6	6.2.0	Additional Specification of CQI Testing for UE Capability Categories 11 and 12	HSDPA-RF

CR-Form-v7

CHANGE REQUEST

⌘   **25.101** CR **272**   ⌘**rev** **1** ⌘   Current version: **5.8.0** ⌘

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

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

Title: ⌘	Correction for FRC test in Closed loop mode 1
Source: ⌘	RAN WG4
Work item code:⌘	HSDPA-RF **Date:** ⌘ 26/11/2003

Category: ⌘ **F**   **Release:** ⌘ Rel-5

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

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

Reason for change: ⌘	FRC performance of UE under test in Closed loop mode 1 test as specified in section 9.2.3 may depend significantly on the two parameters used in the test set up, which are : - Closed loop timing adjustment mode - DPCH frame offset The assumptions about these parameters are currently missing.
Summary of change:⌘	Additionally specify that: - Closed loop timing adjustment mode is Mode 1 - DPCH frame offset is 0 chip Also the following changes are made: - The note regading performance of HS-SCCH is removed because now only STTD can be used on HS-SCCH - [TBD] in table C.11 is replced by STTD because now only STTD can be used on HS-SCCH. - OCNS table C.10 become table C.12 - Reference to Table C.12 are added to tables C.8, C.9, C.10, C.11 - CCPCH in table C.11 become P-CCPCH - Value of ONCS in table C.11 also change to maintain consistency whith description in other tables
Consequences if not approved: ⌘	FRC performance of UE under test in Closed loop mode 1 may depend significantly on particular setup of unspecified parameters. <Isolated Impact Analysis> This change might have impact on current minimum performance requirement if the specified values were generated based on parameters other than that

Clauses affected:	⌘	9.2.3, 9.2.3.1, 9.2.3.2, 9.2.3.3, C.5.1	

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

Other comments:	⌘	
		Equivalent CRs in other Releases: CR304r1 cat. A to 25.101 v6.2.0

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

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

9.2.3   Closed Loop Diversity Performance

The closed loop transmit diversity (Mode 1) performance of the High Speed Physical Downlink Shared Channel (HS-DSCH) in multi-path fading environments are determined by the information bit throughput R.

~~Note: The results in Section 9.2.3 assume error-free HS-SCCH signalling and are subject to further review upon completion of further assessment of the transmit diversity configuration for the HS-SCCH.~~

9.2.3.1   Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

For the parameters specified in Table 9.16, the requirements are specified in terms of a minimum information bit throughput R as shown in Table 9.17 for the DL reference channels specified in Annex A.7.1.

Table 9.16: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference			P-CPICH	
I_{oc}	dBm/3.84 MHz		-60	
DPCH frame offset ($\tau_{DPCH,n}$)	Chip		0	
Redundancy and constellation version coding sequence			{0,2,5,6}	
Maximum number of HARQ transmission			4	
Feedback Error Rate	%		4	
Closed loop timing adjustment mode			1	

Table 9.17: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} **(dB)**	T-put R **(kbps) *** $\hat{I}_{or}/I_{oc}$ **= 0 dB**	T-put R **(kbps) *** $\hat{I}_{or}/I_{oc}$ **= 10 dB**
1	PA3	-6	118	399
		-3	225	458
2	PB3	-6	50	199
		-3	173	301
3	VA30	-6	47	204
		-3	172	305
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)s 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)			

9.2.3.2   Minimum requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

For the parameters specified in Table 9.18, the requirements are specified in terms of a minimum information bit throughput R as shown in Table 9.19 for the DL reference channels specified in Annex A.7.1.

Table 9.18: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference			P-CPICH	
I_{oc}	dBm/3.84 MHz		-60	
DPCH frame offset ($\tau_{DPCH,n}$)	Chip		0	
Redundancy and constellation version coding sequence			{6,2,1,5}	
Maximum number of HARQ transmission			4	
Feedback Error Rate	%		4	
Closed loop timing adjustment mode			1	

Table 9.19: Minimum requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	361
		-3	500
2	PB3	-6	74
		-3	255
3	VA30	-6	84
		-3	254
* Notes:	1)The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)		

9.2.3.3   Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 4/5

For the parameters specified in Table 9.20, the requirements are specified in terms of a minimum information bit throughput R as shown in Tables 9.21 and 9.22 for the DL reference channels specified in Annex A.7.1.4 and A.7.1.5 respectively.

Table 9.20: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference			P-CPICH	
I_{oc}	dBm/3.84 MHz		-60	
DPCH frame offset ($\tau_{DPCH,n}$)	Chip		0	
Redundancy and constellation version coding sequence			{0,2,5,6}	
Maximum number of HARQ transmission			4	
Feedback Error Rate	%		4	
Closed loop timing adjustment mode			1	

Table 9.21: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	114	398
		-3	223	457
2	PB3	-6	43	196
		-3	167	292
3	VA30	-6	40	199
		-3	170	305
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.22: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or} / I_{oc}$ = 10 dB
1	PA3	-6	177	599
		-3	338	687
2	PB3	-6	75	299
		-3	260	452
3	VA30	-6	71	306
		-3	258	458
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

…………… Current Text continue here…….

C.5   HSDPA DL Physical channels

C.5.1   Downlink Physical Channels connection set-up

Table C.8 is applicable for the measurements for tests in subclause 9.2.1 and 9.3. Table C.9 is applicable for the measurements for tests in subclause 9.2.2. Table C.10 is applicable for the measurements for tests in subclause 9.2.3. Table C.11 is applicable for the measurements for tests in subclause 9.4.

Table C.8: Downlink physical channels for HSDPA receiver testing for Single Link performance.

Physical Channel	Parameter	Value	Note
P-CPICH	P-CPICH_Ec/Ior	-10dB	
P-CCPCH	P-CCPCH_Ec/Ior	-12dB	Mean power level is shared with SCH.
SCH	SCH_Ec/Ior	-12dB	Mean power level is shared with P-CCPCH – SCH includes P- and S-SCH, with power split between both. P-SCH code is S_dl,0 as per TS25.213 S-SCH pattern is scrambling code group 0
PICH	PICH_Ec/Ior	-15dB	
DPCH	DPCH_Ec/Ior	Test-specific	12.2 kbps DL reference measurement channel as defined in Annex A.3.1
HS-SCCH_1	HS-SCCH_Ec/Ior	Test-specific	Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval).
HS-SCCH_2	HS-SCCH_Ec/Ior	DTX'd	No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/Ior	DTX'd	As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/Ior	DTX'd	As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	OCNS interference consists of 6 dedicated data channels as specified in table C.10C.12.

Table C.9: Downlink physical channels for HSDPA receiver testing for Open Loop Transmit Diversity performance.

Physical Channel	Parameter	Value	Note
P-CPICH (antenna 1)	P-CPICH_Ec1/Ior	-13dB	1. Total P-CPICH_Ec/Ior = -10dB
P-CPICH (antenna 2)	P-CPICH_Ec2/Ior	-13dB	
P-CCPCH (antenna 1)	P-CCPCH_Ec1/Ior	-15dB	1. STTD applied.
P-CCPCH (antenna 2)	P-CCPCH_Ec2/Ior	-15dB	2. Total P-CCPCH Ec/Ior is –12dB.
SCH (antenna 1/2)	SCH_Ec/Ior	-12dB	1. TSTD applied. 2. Power divided equally between primary and secondary SCH.
PICH (antenna 1)	PICH_Ec1/Ior	-18dB	1. STTD applied.
PICH (antenna 2)	PICH_Ec2/Ior	-18dB	2. Total PICH Ec/Ior is –15dB.
DPCH	DPCH_Ec/Ior	Test-specific	1. STTD applied.
HS-SCCH_1	HS-SCCH_Ec/Ior	Test-specific	1. STTD applied. 2. Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval).
HS-SCCH_2	HS-SCCH_Ec/Ior	DTX'd	1. UE assumes STTD applied. 2. No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/Ior	DTX'd	1. As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/Ior	DTX'd	2. As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	1. STTD applied.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	1. STTD applied. 2. Balance of power I_{or} of the Node-B is assigned to OCNS 3. Power divided equally between antennas. 4. OCNS interference consists of 6 dedicated data channels as specified in table C.12.

**Table C.10: Downlink physical channels for HSDPA receiver testing for Closed Loop.
Transmit Diversity (Mode-1) performance.**

Physical Channel	Parameter	Value	Note
P-CPICH (antenna 1)	P-CPICH_Ec1/Ior	-13dB	1. Total P-CPICH_Ec/Ior = -10dB
P-CPICH (antenna 2)	P-CPICH_Ec2/Ior	-13dB	
P-CCPCH (antenna 1)	P-CCPCH_Ec1/Ior	-15dB	1. STTD applied. 2. Total P-CCPCH Ec/Ior is –12dB.
P-CCPCH (antenna 2)	P-CCPCH_Ec2/Ior	-15dB	
SCH (antenna 1/2)	SCH_Ec/Ior	-12dB	1. TSTD applied. 2. Power divided equally between primary and secondary SCH.
PICH (antenna 1)	PICH_Ec1/Ior	-18dB	1. STTD applied. 2. Total PICH Ec/Ior is –15dB.
PICH (antenna 2)	PICH_Ec2/Ior	-18dB	
DPCH	DPCH_Ec/Ior	Test-specific	1. CL1 applied.
HS-SCCH_1	HS-SCCH_Ec/Ior	Test-specific	1. ~~[TBD]~~STTD applied. 2. Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval).
HS-SCCH_2	HS-SCCH_Ec/Ior	DTX'd	1. UE assumes ~~[TBD]~~STTD applied. 2. No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/Ior	DTX'd	1. As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/Ior	DTX'd	2. As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	1. CL1 applied.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	1. STTD applied. 2. Balance of power I_{or} of the Node-B is assigned to OCNS 3. Power divided equally between antennas. 4. OCNS interference consists of 6 dedicated data channels as specified in table C.12.

Table C.11: Downlink physical channels for HSDPA receiver testing for HS-SCCH detection performance

Parameter	Units	Value	Comment
CPICH E_c/I_{or}	dB	-10	
P-CCPCH E_c/I_{or}	dB	-12	Mean power level is shared with SCH.
SCH E_c/I_{or}	dB	-12	Mean power level is shared with P-CCPCH – SCH includes P- and S-SCH, with power split between both. P-SCH code is S_dl,0 as per TS25.213 S-SCH pattern is scrambling code group 0
PICH E_c/I_{or}	dB	-15	
HS-DSCH-1 E_c/I_{or}	dB	-10	HS-DSCH associated with HS-SCCH-1
HS-DSCH-2 E_c/I_{or}	dB	DTX	HS-DSCH associated with HS-SCCH-2
HS-DSCH-3 E_c/I_{or}	dB	DTX	HS-DSCH associated with HS-SCCH-3
HS-DSCH-4 E_c/I_{or}	dB	DTX	HS-DSCH associated with HS-SCCH-4
DPCH E_c/I_{or}	dB	-8	12.2 kbps DL reference measurement channel as defined in Annex A.3.1
HS-SCCH-1 E_c/I_{or}	dB	Test Specific	All HS-SCCH's allocated equal E_c/I_{or}.
HS-SCCH-2 E_c/I_{or}	dB		Specifies E_c/I_{or} when TTI is active.
HS-SCCH-3 E_c/I_{or}	dB		
HS-SCCH-4 E_c/I_{or}	dB		
OCNS E_c/I_{or}	dB	Necessary power so that total transmit power spectral density of Node B (Ior) adds to one~~Remaining power at Node-B (including HS-SCCH power allocation when HS-SCCH's inactive).~~	OCNS interference consists of 6 dedicated data channels as specified in table ~~C.10~~ C.12.

C.5.2   OCNS Definition

The selected channelization codes and relative power levels for OCNS transmission during for HSDPA performance assessment are defined in Table ~~C.10~~C.12. The selected codes are designed to have a single length-16 parent code.

Table ~~C.10~~C.12: OCNS definition for HSDPA receiver testing.

Channelization Code at SF=128	Relative Level setting (dB)	DPCH Data
2	-6	The DPCH data for each channelization code shall be uncorrelated with each other and with any wanted signal over the period of any measurement.
3	-8	
4	-8	
5	-10	
6	-7	
7	-9	

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CHANGE REQUEST

| ⌘ | **25.101** CR **273** | ⌘ **rev** | **1** | ⌘ | Current version: | **5.8.0** | ⌘ |

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

Title: ⌘	DTX handling for CQI test in fading channel		
Source: ⌘	RAN WG4		
Work item code:⌘	HSDPA-RF	**Date:** ⌘	26/11/2003
Category: ⌘	**F**	**Release:** ⌘	Rel-5

Use one of the following categories:	*Use one of the following releases:*
F *(correction)*	*2 (GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*	*R96 (Release 1996)*
B *(addition of feature),*	*R97 (Release 1997)*
C *(functional modification of feature)*	*R98 (Release 1998)*
D *(editorial modification)*	*R99 (Release 1999)*
Detailed explanations of the above categories can	*Rel-4 (Release 4)*
be found in 3GPP TR 21.900.	*Rel-5 (Release 5)*
	Rel-6 (Release 6)

Reason for change: ⌘	The Node B emulator behaviour when DTX is reported in ACK/NACK field is unclear. This may lead to differennce in test result depending on how frequent DTX is observed.
Summary of change: ⌘	It is proposed to clarify that: In calculating BLER, for an HARQ process, if an odd number of consecutive DTXs are reported, the corresponding packets and one subsequent packet shall be discarded from BLER calculation. If an even number of consecutive DTXs are reported, the corresponding packets shall be discarded from BLER calculation.
Consequences if not approved: ⌘	Different Node B emulator whith different DTX handling may give different test result. <Isolated Impact Analysis> Impact on specifed performance requiremnents should be negligible if the current requirements were generated based on sufficiaent power set up for HS-SCCH so that the DTX report rate was low.

Clauses affected:	⌘	9.3.2

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

Other comments: ⌘	

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9.3.2   Fading propagation conditions

The reporting accuracy of the channel quality indicator (CQI) under fading environments is determined by the BLER performance using the transport format indicated by the reported CQI median.

In calculating BLER, for an HARQ process, if an odd number of consecutive DTXs are reported, the corresponding packets and one subsequent packet shall be discarded from BLER calculation. If an even number of consecutive DTXs are reported, the corresponding packets shall be discarded from BLER calculation.

The specified requirements may be subject to further simulations to verify assumptions.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.101** CR **275** | ⌘**rev** | | ⌘ | Current version: | **5.8.0** | ⌘ |

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

Title:	⌘	Power allocation for HS-SCCH in FRC test
Source:	⌘	RAN WG4

Work item code:⌘	HSDPA-RF		*Date:* ⌘	26/11/2003

Category:	⌘	**F**		*Release:* ⌘	Rel-5

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

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

Reason for change:	⌘	Current power allocation to DPCH & HS-SCCH_1 in FRC tests are left as "Test-specific" but has not been defined. Undefined HS-SCCH_1 power may lead to different DTX reporting rate and thus impact the result of the test.
Summary of change:	⌘	It is proposed to add the note indicating that sufficient power should be allocated to HS-SCCH_1 to ensure low DTX reporting rate. Also a minor change to Table 9.1A on the redundancy and constelation version
Consequences if not approved:	⌘	Totally undefined HS-SCCH_1 power may lead to different DTX reporting rate and thus impact the result of the test. <Isolated Impact Analysis> No impact on specified performance is seen if the perfomance were generated with sufficient power setup for HS-SCCH_1.

Clauses affected:	⌘	9.2

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

Other comments:	⌘	
		Equivalent CRs in other Releases: CR302 cat. A to 25.101 v6.2.0

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9.2 Demodulation of HS-DSCH (Fixed Reference Channel)

The performance requirement for a particular UE belonging to certain HS-DSCH category are determined according to Table 9.1.

Table 9.1: Mapping between HS-DSCH category and FRC

HS-DSCH category	Corresponding requirement
Category 1	H-Set 1
Category 2	H-Set 1
Category 3	H-Set 2
Category 4	H-Set 2
Category 5	H-Set 3
Category 6	H-Set 3
Category 11	H-Set 4
Category 12	H-Set 5

During the Fixed Reference Channel tests the behaviour of the Node-B emulator in response to the ACK/NACK signalling field of the HS-DPCCH is specified in Table 9.1A:

Table 9.1A: Node-B Emulator Behaviour in response to ACK/NACK/DTX

HS-DPCCH ACK/NACK Field State	Node-B Emulator Behaviour
ACK	ACK: new transmission using 1st redundancy and constellation version (RV)
NACK	NACK: retransmission using the next RV (up to the maximum permitted number or RV's)
DTX	DTX: retransmission using the RV previously transmitted to the same H-ARQ process

Note: Performance requirements in this section assume a sufficient power allocation to HS-SCCH_1 so that probability of reporting DTX is very low.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.101** CR **276** | ⌘ **rev** | **1** | ⌘ | Current version: | **5.8.0** | ⌘ |

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

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

Title: ⌘	Corrections of CQI reporting section	
Source: ⌘	RAN WG4	
Work item code: ⌘	HSDPA-RF	***Date:*** ⌘ 26/11/2003
Category: ⌘ **F**		***Release:*** ⌘ Rel-5

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

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

Reason for change: ⌘	The value of measurement power offset Γ to be signalled to the UE under test is currently unspecified. This may lead to different test results if different Γ is used.
Summary of change: ⌘	It is clarified that measurement power offset Γ to be signalled to the UE is the difference in dB between HS-DSCH and CPICH power in the test set up and is specified in .

Also HS-SCCH is replaced by HS-SCCH_1 to maintain the consistency with Tables C.8, C.9, C.10.

Also PER is repalced by BLER to maintain the consistency with other sections. |
| ***Consequences if not approved:*** ⌘ | Undefined measurement power offset Γ may lead to different test results.

<Isolated Impact Analysis>
No impact is seen if current specified values were generated according to above interpretation i.e. Γ is set equal to the difference in dB between HS-DSCH and CPICH power. |

Clauses affected: ⌘	9.3.1.1, 9.3.1.2, 9.3.2.1, 9.3.2.2

	Y	N	
Other specs affected: ⌘			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 http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

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

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

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

2   References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

[1]   (void)

[2]   ITU-R Recommendation SM.329-9: "Spurious emissions".

[3]   (void)

[4]   3GPP TS 25.433: "UTRAN Iub Interface NBAP Signalling".

[5]   ETSI ETR 273: "Electromagnetic compatibility and Radio spectrum Matters (ERM); 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".

[6]   3GPP TS 45.004: "Digital cellular telecommunications system (Phase 2+); Modulation".

[7]   3GPP TS 25.331: "Radio Resource Control (RRC); Protocol Specification"

9.3   Reporting of Channel Quality Indicator

9.3.1   AWGN propagation conditions

The reporting accuracy of channel quality indicator (CQI) under AWGN environments is determined by the reporting variance and the BLER performance using the transport format indicated by the reported CQI median.

9.3.1.1   Minimum Requirement – UE capability categories 1-6

For the parameters specified in Table 9.23, the reported CQI value shall be in the range of +/-2 of the reported median more than 90% of the time. If the HS-PDSCH packet error rate (PER)BLER using transport format indicated by median CQI is less than 0.1, PER BLER using transport format indicated by (median CQI +2) shall be larger than 0.1. If the HS-PDSCH packet error rate (PER)BLER using transport format indicated by median CQI is larger than 0.1, PER BLER using transport format indicated by (median CQI -1) shall be less than 0.1.

Table 9.23: Test Parameter for CQI: categories 1-6

Parameter	Unit	Test 1	Test 2	Test 3
$\hat{I}_{or} / I_{oc}$	dB	0	5	10
I_{oc}	dBm/3.84 MHz	-60		
Phase reference	-	P-CPICH		
HS-PDSCH E_c / I_{or} (*)	dB	-3		
~~HS-SCCH~~ HS-SCCH_1 E_c / I_{or}	dB	-10		
DPCH E_c / I_{or}	dB	-10		
Maximum number of H-ARQ transmission	-	1		
Number of HS-SCCH set to be monitored	-	1		
CQI feedback cycle	ms	2		
CQI repetition factor	-	1		
HS-DSCH transmission pattern	-	"XOOXOOX" to incorporate inter-TTI=3 UEs, where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates DTX		
Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined in [7]				
Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI, median CQI -1, median CQI+2 are used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214				

9.3.1.2   Minimum Requirement – UE capability categories 11,12

For the parameters specified in Table 9.24, the reported CQI value shall be in the range of +/-2 of the reported median more than 90% of the time. If the HS-PDSCH ~~packet error rate (PER)~~ BLER using transport format indicated by median CQI is less than 0.1, ~~PER~~ BLER using transport format indicated by (median CQI +2) shall be larger than 0.1. If the HS-PDSCH ~~packet error rate (PER)~~ BLER using transport format indicated by median CQI is larger than 0.1, ~~PER~~ BLER using transport format indicated by (median CQI -1) shall be less than 0.1.

Table 9.24: Test Parameter for CQI: categories 11,12

Parameter	Unit	Test 1	Test 2
$\hat{I}_{or}/I_{oc}$	dB	0	5
I_{oc}	dBm/3.84 MHz	-60	
Phase reference	-	P-CPICH	
HS-PDSCH E_c/I_{or} (*)	dB	-3	
~~HS-SCCH~~ HS-SCCH_1 E_c/I_{or}	dB	-10	
DPCH E_c/I_{or}	dB	-10	
Maximum number of H-ARQ transmission	-	1	
Number of HS-SCCH set to be monitored	-	1	
CQI feedback cycle	ms	2	
CQI repetition factor	-	1	
HS-DSCH transmission pattern	-	"XOOXOOX", where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates DTX	
Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined in [7] Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI, median CQI -1, median CQI+2 are used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214			

9.3.2   Fading propagation conditions

The reporting accuracy of the channel quality indicator (CQI) under fading environments is determined by the BLER performance using the transport format indicated by the reported CQI median.

The specified requirements may be subject to further simulations to verify assumptions.

9.3.2.1   Minimum Requirement – UE capability categories 1-6

For the parameters specified in Table 9.25, the requirements are specified in terms of maximum BLERs at particular reported CQIs when transmitting a fixed transport format given by the CQI median as shown in Table 9.26. The BLER at a particular reported CQI is obtained by associating a particular CQI reference measurement period with HS-PDSCH subframe overlapping with the end of this CQI reference measurement period and calculating the fraction of erroneous HS-PDSCH subframes.

Table 9.25: Test Parameters for CQI test in fading: categories 1-6

Parameter	Unit	Test 1	Test 2
HS-PDSCH E_c/I_{or} (*)	dB	-8	-4
$\hat{I}_{or}/I_{oc}$	dB	0	5
I_{oc}	dBm/3.84 MHz	-60	
Phase reference	-	P-CPICH	
~~HS-SCCH 1~~ <u>HS-SCCH_1</u> E_c/I_{or}	dB	-8.5	
DPCH E_c/I_{or}	dB	-6	
Maximum number of H-ARQ transmission	-	1	
Number of HS-SCCH set to be monitored	-	1	
CQI feedback cycle	ms	2	
CQI repetition factor	-	1	
HS-DSCH transmission pattern	-	"….XOOXOOX…." to incorporate inter-TTI=3 UEs, where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates DTX	
Propagation Channel		Case 8	
Note1: Measurement power offset "Γ" is configured by RRC accordingly <u>and as defined in [7]</u> Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI is used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214			

Table 9.26: Minimum requirement for CQI test in fading for categories 1-6

Reported CQI	Maximum BLER	
	Test 1	Test2
CQI median	60%	60%
CQI median + 3	15%	15%

9.3.2.2 Minimum Requirement – UE capability categories 11,12

For the parameters specified in Table 9.27, the requirements are specified in terms of BLERs at particular reported CQIs when a fixed transport format given by CQI median as shown in Table 9.28. The BLER at a particular reported CQI is obtained by associating a particular CQI reference measurement period with HS-PDSCH subframe overlapping with the end of this CQI reference measurement period and calculating the fraction of erroneous HS-PDSCH subframes.

Table 9.27: Test Parameters for CQI test in fading: categories 11-12

Parameter	Unit	Test 1
HS-PDSCH E_c/I_{or} (*)	dB	-8
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-60
Phase reference	-	P-CPICH
~~HS-SCCH 1~~ HS-SCCH_1 E_c/I_{or}	dB	-8.5
DPCH E_c/I_{or}	dB	-6
Maximum number of H-ARQ transmission	-	1
Number of HS-SCCH set to be monitored	-	1
CQI feedback cycle	ms	2
CQI repetition factor	-	1
HS-DSCH transmission pattern	-	"….XOOXOOX…." to incorporate inter-TTI=3 UEs, where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates DTX
Propagation Channel		Case 8
Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined in [7] Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI is used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214		

Table 9.28: Minimum requirement for CQI test in fading for categories 11-12

Reported CQI	Maximum BLER
	Test 1
CQI median	60%
CQI median + 3	15%

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CHANGE REQUEST

⌘　　　**25.101** CR **283**　　⌘ **rev** **2** ⌘　Current version: **5.8.0** ⌘

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

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

Title: ⌘	Additional Specification of CQI Testing for UE Capability Categories 11 and 12
Source: ⌘	RAN WG4

Work item code:⌘	HSDPA-RF	***Date:*** ⌘	26/11/2003

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

Reason for change: ⌘	For UE capability categories 11 and 12, there are two tests under AWGN conditions and one under fading conditions. The purpose of this CR is to increase the number of tests to three under AWGN conditions and two tests under fading conditions.
Summary of change: ⌘	The number of CQI tests for UE capability categories 11 and 12 are increased from two to three under AWGN conditions and one to two under fading conditions as agreed in RAN4 #28
Consequences if not approved: ⌘	There would not be enough CQI test for UE capability categories

Clauses affected: ⌘	9.3.1.1, 9.3.2.2

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

Other comments: ⌘	
	Equivalent CRs in other Releases: CR309r2 cat. A to 25.101 v6.2.0

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

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

9.3.1.2   Minimum Requirement – UE capability categories 11,12

For the parameters specified in Table 9.24, the reported CQI value shall be in the range of +/-2 of the reported median more than 90% of the time. If the HS-PDSCH (BLER) using transport format indicated by median CQI is less than 0.1, BLER using transport format indicated by (median CQI +2) shall be larger than 0.1. If the HS-PDSCH (BLER) using transport format indicated by median CQI is larger than 0.1, BLER using transport format indicated by (median CQI -1) shall be less than 0.1.

Table 9.24: Test Parameter for CQI: categories 11,12

Parameter	Unit	Test 1	Test 2	<u>Test 3</u>
$\hat{I}_{or}/I_{oc}$	dB	0	5	<u>10</u>
I_{oc}	dBm/3.84 MHz		-60	
Phase reference	-		P-CPICH	
HS-PDSCH E_c/I_{or} (*)	dB		-3	
HS-SCCH_1 E_c/I_{or}	dB		-10	
DPCH E_c/I_{or}	dB		-10	
Maximum number of H-ARQ transmission	-		1	
Number of HS-SCCH set to be monitored	-		1	
CQI feedback cycle	ms		2	
CQI repetition factor	-		1	
HS-DSCH transmission pattern	-		"XOOXOOX" to incorporate inter-TTI=3 UEs, where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates DTX	
Note1: Measurement power offset "Γ" is configured by RRC accordingly and and as defined in [7] Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI, median CQI -1, median CQI+2 are used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214				

===

9.3.2.2   Minimum Requirement – UE capability categories 11,12

For the parameters specified in Table 9.27, the requirements are specified in terms of BLERs at particular reported CQIs when a fixed transport format given by CQI median as shown in Table 9.28. The BLER at a particular reported CQI is obtained by associating a particular CQI reference measurement period with HS-PDSCH subframe overlapping with the end of this CQI reference measurement period and calculating the fraction of erroneous HS-PDSCH subframes.

Table 9.27: Test Parameters for CQI test in fading: categories 11-12

Parameter	Unit	Test 1	Test 2
HS-PDSCH E_c/I_{or} (*)	dB	-8	-4
$\hat{I}_{or}/I_{oc}$	dB	0	5
I_{oc}	dBm/3.84 MHz	-60	
Phase reference	-	P-CPICH	
HS-SCCH_1 E_c/I_{or}	dB	-8.5	
DPCH E_c/I_{or}	dB	-6	
Maximum number of H-ARQ transmission	-	1	
Number of HS-SCCH set to be monitored	-	1	
CQI feedback cycle	ms	2	
CQI repetition factor	-	1	
HS-DSCH transmission pattern	-	"….XOOXOOX…." to incorporate inter-TTI=3 UEs, where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates DTX	
Propagation Channel		Case 8	
Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined in [7] Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI is used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214			

Table 9.28: Minimum requirement for CQI test in fading for categories 11-12

Reported CQI	Maximum BLER	
	Test 1	Test2
CQI median	60%	60%
CQI median + 3	15%	60%

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CHANGE REQUEST

| ⌘ | **25.101** CR **296** | ⌘**rev** **3** ⌘ | Current version: | **5.8.0** | ⌘ |

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

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

Title:	⌘	Correction to HSDPA OCNS definition			
Source:	⌘	RAN WG4			
Work item code:⌘		HSDPA-RF	***Date:*** ⌘	26/11/2003	

Category: ⌘	**F**	***Release:*** ⌘ Rel-5

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

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

Reason for change: ⌘		The HSDPA OCNS power definition is inconsistent with the standard OCNS definition. This change is done to be consistent with the method of defining OCNS that already existed in table C.6. This change has no impact on the levels used but removes an inconsistency with table C.6 which has caused confusion.
Summary of change:⌘		In table C.10 the relative power of the OCNS channels is normalized to the highest power, which means a shift upwards of 6 dB. A note is added to table C.12 to indicate that the power levels of the OCNS channels are relative to each other and that they need to be modified relative to Ior depending on which signal they are to be used in so that the total power adds to one (0 dB).
Consequences if not approved: ⌘		The change in table C.10 does not alter the levels to be used in the test but removes inconsistency in how they were defined compared to table C.6.

Clauses affected:	⌘	C.5.2

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

Other comments:	⌘	
		Equivalent CRs in other Releases: CR297r3 cat. A to 25.101 v6.2.0

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

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

C.5.2   OCNS Definition

The selected channelization codes and relative power levels for OCNS transmission during for HSDPA performance assessment are defined in Table C.10. The selected codes are designed to have a single length-16 parent code.

Table C.10: OCNS definition for HSDPA receiver testing.

Channelization Code at SF=128	Relative Level setting[1] (dB)	DPCH Data
2	-60	The DPCH data for each channelization code shall be uncorrelated with each other and with any wanted signal over the period of any measurement.
3	-82	
4	-82	
5	-104	
6	-71	
7	-93	

Note 1   The relative level setting specified in dB refers only to the relationship between the OCNS channels. The level of the OCNS channels relative to the Ior of the complete signal is a function of the power of the other channels in the signal with the intention that the power of the group of OCNS channels is used to make the total signal add up to 1.

CR-Form-v7

CHANGE REQUEST

⌘　　**25.101** CR **297**　　⌘**rev** **3** ⌘　Current version: **6.2.0** ⌘

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

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

Title: ⌘	Correction to HSDPA OCNS definition
Source: ⌘	RAN WG4

Work item code: ⌘	HSDPA-RF	***Date:*** ⌘	26/11/2003

Category: ⌘ **A**	***Release:*** ⌘ Rel-6

Use <u>one</u> 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 <u>one</u> 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 HSDPA OCNS power definition is inconsistent with the standard OCNS definition. This change is done to be consistent with the method of defining OCNS that already existed in table C.6. This change has no impact on the levels used but removes an inconsistency with table C.6 which has caused confusion.
Summary of change: ⌘	In table C.10 the relative power of the OCNS channels is normalized to the highest power, which means a shift upwards of 6 dB. A note is added to table C.12 to indicate that the power levels of the OCNS channels are relative to each other and that they need to be modified relative to Ior depending on which signal they are to be used in so that the total power adds to one (0 dB).
Consequences if not approved: ⌘	The change in table C.10 does not alter the levels to be used in the test but removes inconsistency in how they were defined compared to table C.6.

Clauses affected: ⌘	C.5.2

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

Other comments: ⌘	
	Equivalent CRs in other Releases: CR296r3 cat. F to 25.101 v5.8.0

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

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

C.5.2　OCNS Definition

The selected channelization codes and relative power levels for OCNS transmission during for HSDPA performance assessment are defined in Table C.10. The selected codes are designed to have a single length-16 parent code.

Table C.10: OCNS definition for HSDPA receiver testing.

Channelization Code at SF=128	Relative Level setting[1] (dB)	DPCH Data
2	-60	The DPCH data for each channelization code shall be uncorrelated with each other and with any wanted signal over the period of any measurement.
3	-82	
4	-82	
5	-104	
6	-71	
7	-93	

Note 1　The relative level setting specified in dB refers only to the relationship between the OCNS channels. The level of the OCNS channels relative to the Ior of the complete signal is a function of the power of the other channels in the signal with the intention that the power of the group of OCNS channels is used to make the total signal add up to 1.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.101** CR **302** | ⌘**rev** | | ⌘ | Current version: | **6.2.0** | ⌘ |

*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:	⌘	Power allocation for HS-SCCH in FRC test		
Source:	⌘	RAN WG4		
Work item code: ⌘		HSDPA-RF	***Date:*** ⌘	26/11/2003
Category:	⌘ **A**		***Release:*** ⌘	Rel-6

Use <u>one</u> 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 <u>one</u> 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: ⌘	Current power allocation to DPCH & HS-SCCH_1 in FRC tests are left as "Test-specific" but has not been defined. Undefined HS-SCCH_1 power may lead to different DTX reporting rate and thus impact the result of the test.
Summary of change: ⌘	It is proposed to add the note indicating that sufficient power should be allocated to HS-SCCH_1 to ensure low DTX reporting rate. Also a minor change to Table 9.1A on the redundancy and constelation version
Consequences if not approved: ⌘	Totally undefined HS-SCCH_1 power may lead to different DTX reporting rate and thus impact the result of the test. <Isolated Impact Analysis> No impact on specified performance is seen if the perfomance were generated with sufficient power setup for HS-SCCH_1.

Clauses affected:	⌘	9.2	

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

Other comments:	⌘	Equivalent CRs in other Releases: CR275 cat. F to 25.101 v5.8.0

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

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

9.2 Demodulation of HS-DSCH (Fixed Reference Channel)

The performance requirement for a particular UE belonging to certain HS-DSCH category are determined according to Table 9.1.

Table 9.1: Mapping between HS-DSCH category and FRC

HS-DSCH category	Corresponding requirement
Category 1	H-Set 1
Category 2	H-Set 1
Category 3	H-Set 2
Category 4	H-Set 2
Category 5	H-Set 3
Category 6	H-Set 3
Category 11	H-Set 4
Category 12	H-Set 5

During the Fixed Reference Channel tests the behaviour of the Node-B emulator in response to the ACK/NACK signalling field of the HS-DPCCH is specified in Table 9.1A:

Table 9.1A: Node-B Emulator Behaviour in response to ACK/NACK/DTX

HS-DPCCH ACK/NACK Field State	Node-B Emulator Behaviour
ACK	ACK: new transmission using 1st redundancy and constellation version (RV)
NACK	NACK: retransmission using the next RV (up to the maximum permitted number or RV's)
DTX	DTX: retransmission using the RV previously transmitted to the same H-ARQ process

Note: Performance requirements in this section assume a sufficient power allocation to HS-SCCH_1 so that probability of reporting DTX is very low.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.101** CR **303** | ⌘**rev** | | ⌘ | Current version: | **6.2.0** | ⌘ |

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

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

Title: ⌘	Corrections of CQI reporting section	
Source: ⌘	RAN WG4	
Work item code: ⌘	HSDPA-RF	***Date:*** ⌘ 26/11/2003

Category: ⌘ **A**	***Release:*** ⌘ Rel-6

Use one of the following categories:	*Use one of the following releases:*
F *(correction)*	*2　(GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*	*R96　(Release 1996)*
B *(addition of feature),*	*R97　(Release 1997)*
C *(functional modification of feature)*	*R98　(Release 1998)*
D *(editorial modification)*	*R99　(Release 1999)*
Detailed explanations of the above categories can	*Rel-4　(Release 4)*
be found in 3GPP TR 21.900.	*Rel-5　(Release 5)*
	Rel-6　(Release 6)

Reason for change: ⌘	The value of measurement power offset Γ to be signalled to the UE under test is currently unspecified. This may lead to different test results if different Γ is used.
Summary of change: ⌘	It is clarified that measurement power offset Γ to be signalled to the UE is the difference in dB between HS-DSCH and CPICH power in the test set up and is specified in . Also HS-SCCH is replaced by HS-SCCH_1 to maintain the consistency with Tables C.8, C.9, C.10. Also PER is repalced by BLER to maintain the consistency with other sections.
Consequences if not approved: ⌘	Undefined measurement power offset Γ may lead to different test results. <Isolated Impact Analysis> No impact is seen if current specified values were generated according to above interpretation i.e. Γ is set equal to the difference in dB between HS-DSCH and CPICH power.

Clauses affected: ⌘	9.3.1.1, 9.3.1.2, 9.3.2.1, 9.3.2.2

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

Other comments: ⌘	

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

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

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]   (void)

[2]   ITU-R Recommendation SM.329-9: "Spurious emissions".

[3]   (void)

[4]   3GPP TS 25.433: "UTRAN Iub Interface NBAP Signalling".

[5]   ETSI ETR 273: "Electromagnetic compatibility and Radio spectrum Matters (ERM); 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".

[6]   3GPP TS 45.004: "Digital cellular telecommunications system (Phase 2+); Modulation".

[7]   3GPP TS 25.331: "Radio Resource Control (RRC); Protocol Specification"

9.3 Reporting of Channel Quality Indicator

9.3.1 AWGN propagation conditions

The reporting accuracy of channel quality indicator (CQI) under AWGN environments is determined by the reporting variance and the BLER performance using the transport format indicated by the reported CQI median.

9.3.1.1 Minimum Requirement – UE capability categories 1-6

For the parameters specified in Table 9.23, the reported CQI value shall be in the range of +/-2 of the reported median more than 90% of the time. If the HS-PDSCH packet error rate (PER)BLER using transport format indicated by median CQI is less than 0.1, PER BLER using transport format indicated by (median CQI +2) shall be larger than 0.1. If the HS-PDSCH packet error rate (PER)BLER using transport format indicated by median CQI is larger than 0.1, PER BLER using transport format indicated by (median CQI -1) shall be less than 0.1.

Table 9.23: Test Parameter for CQI: categories 1-6

Parameter	Unit	Test 1	Test 2	Test 3
$\hat{I}_{or} / I_{oc}$	dB	0	5	10
I_{oc}	dBm/3.84 MHz	-60		
Phase reference	-	P-CPICH		
HS-PDSCH E_c / I_{or} (*)	dB	-3		
~~HS-SCCH~~ HS-SCCH_1 E_c / I_{or}	dB	-10		
DPCH E_c / I_{or}	dB	-10		
Maximum number of H-ARQ transmission	-	1		
Number of HS-SCCH set to be monitored	-	1		
CQI feedback cycle	ms	2		
CQI repetition factor	-	1		
HS-DSCH transmission pattern	-	"XOOXOOX" to incorporate inter-TTI=3 UEs, where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates DTX		
Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined in [7]				
Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI, median CQI -1, median CQI+2 are used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214				

9.3.1.2   Minimum Requirement – UE capability categories 11,12

For the parameters specified in Table 9.24, the reported CQI value shall be in the range of +/-2 of the reported median more than 90% of the time. If the HS-PDSCH ~~packet error rate (PER)~~ BLER using transport format indicated by median CQI is less than 0.1, ~~PER~~ BLER using transport format indicated by (median CQI +2) shall be larger than 0.1. If the HS-PDSCH ~~packet error rate (PER)~~ BLER using transport format indicated by median CQI is larger than 0.1, ~~PER~~ BLER using transport format indicated by (median CQI -1) shall be less than 0.1.

Table 9.24: Test Parameter for CQI: categories 11,12

Parameter	Unit	Test 1	Test 2
$\hat{I}_{or}/I_{oc}$	dB	0	5
I_{oc}	dBm/3.84 MHz	-60	
Phase reference	-	P-CPICH	
HS-PDSCH E_c/I_{or} (*)	dB	-3	
~~HS-SCCH~~ HS-SCCH_1 E_c/I_{or}	dB	-10	
DPCH E_c/I_{or}	dB	-10	
Maximum number of H-ARQ transmission	-	1	
Number of HS-SCCH set to be monitored	-	1	
CQI feedback cycle	ms	2	
CQI repetition factor	-	1	
HS-DSCH transmission pattern	-	"XOOXOOX", where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates DTX	
Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined in [7] Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI, median CQI -1, median CQI+2 are used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214			

9.3.2   Fading propagation conditions

The reporting accuracy of the channel quality indicator (CQI) under fading environments is determined by the BLER performance using the transport format indicated by the reported CQI median.

The specified requirements may be subject to further simulations to verify assumptions.

9.3.2.1   Minimum Requirement – UE capability categories 1-6

For the parameters specified in Table 9.25, the requirements are specified in terms of maximum BLERs at particular reported CQIs when transmitting a fixed transport format given by the CQI median as shown in Table 9.26. The BLER at a particular reported CQI is obtained by associating a particular CQI reference measurement period with HS-PDSCH subframe overlapping with the end of this CQI reference measurement period and calculating the fraction of erroneous HS-PDSCH subframes.

Table 9.25: Test Parameters for CQI test in fading: categories 1-6

Parameter	Unit	Test 1	Test 2
HS-PDSCH E_c/I_{or} (*)	dB	-8	-4
$\hat{I}_{or}/I_{oc}$	dB	0	5
I_{oc}	dBm/3.84 MHz	-60	
Phase reference	-	P-CPICH	
~~HS-SCCH 1~~ <u>HS-SCCH_1</u> E_c/I_{or}	dB	-8.5	
DPCH E_c/I_{or}	dB	-6	
Maximum number of H-ARQ transmission	-	1	
Number of HS-SCCH set to be monitored	-	1	
CQI feedback cycle	ms	2	
CQI repetition factor	-	1	
HS-DSCH transmission pattern	-	"….XOOXOOX…." to incorporate inter-TTI=3 UEs, where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates DTX	
Propagation Channel		Case 8	
Note1: Measurement power offset "Γ" is configured by RRC accordingly <u>and as defined in [7]</u> Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI is used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214			

Table 9.26: Minimum requirement for CQI test in fading for categories 1-6

Reported CQI	Maximum BLER	
	Test 1	Test2
CQI median	60%	60%
CQI median + 3	15%	15%

9.3.2.2   Minimum Requirement – UE capability categories 11,12

For the parameters specified in Table 9.27, the requirements are specified in terms of BLERs at particular reported CQIs when a fixed transport format given by CQI median as shown in Table 9.28. The BLER at a particular reported CQI is obtained by associating a particular CQI reference measurement period with HS-PDSCH subframe overlapping with the end of this CQI reference measurement period and calculating the fraction of erroneous HS-PDSCH subframes.

Table 9.27: Test Parameters for CQI test in fading: categories 11-12

Parameter	Unit	Test 1
HS-PDSCH E_c/I_{or} (*)	dB	-8
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-60
Phase reference	-	P-CPICH
~~HS-SCCH 1~~ HS-SCCH_1 E_c/I_{or}	dB	-8.5
DPCH E_c/I_{or}	dB	-6
Maximum number of H-ARQ transmission	-	1
Number of HS-SCCH set to be monitored	-	1
CQI feedback cycle	ms	2
CQI repetition factor	-	1
HS-DSCH transmission pattern	-	"….XOOXOOX…." to incorporate inter-TTI=3 UEs, where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates DTX
Propagation Channel		Case 8
Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined in [7] Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI is used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214		

Table 9.28: Minimum requirement for CQI test in fading for categories 11-12

Reported CQI	Maximum BLER
	Test 1
CQI median	60%
CQI median + 3	15%

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CHANGE REQUEST

| ⌘ | **25.101** CR **304** | ⌘**rev** | | ⌘ | Current version: | **6.2.0** | ⌘ |

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

Title:	⌘	Correction for FRC test in Closed loop mode 1		
Source:	⌘	RAN WG4		
Work item code:⌘	HSDPA-RF		***Date:*** ⌘	26/11/2003
Category:	⌘ **A**		***Release:*** ⌘	Rel-6

Use <u>one</u> 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 <u>one</u> 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:	⌘	FRC performance of UE under test in Closed loop mode 1 test as specified in section 9.2.3 may depend significantly on the two parameters used in the test set up, which are :
		- Closed loop timing adjustment mode
		- DPCH frame offset
		The assumptions about these parameters are currently missing.
Summary of change:⌘		Additionally specify that:
		- Closed loop timing adjustment mode is Mode 1
		- DPCH frame offset is 0 chip
		Also the following changes are made:
		- The note regading performance of HS-SCCH is removed because now only STTD can be used on HS-SCCH
		- [TBD] in table C.11 is replced by STTD because now only STTD can be used on HS-SCCH.
		- OCNS table C.10 become table C.12
		- Reference to Table C.12 are added to tables C.8, C.9, C.10, C.11
		- CCPCH in table C.11 become P-CCPCH
		- Value of ONCS in table C.11 also change to maintain consistency whith description in other tables
Consequences if not approved:	⌘	FRC performance of UE under test in Closed loop mode 1 may depend significantly on particular setup of unspecified parameters.
		<Isolated Impact Analysis>
		This change might have impact on current minimum performance requirement if the specified values were generated based on parameters other than that

		mentined above.

Clauses affected:	⌘	9.2.3, 9.2.3.1, 9.2.3.2, 9.2.3.3, C.5.1	

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

Other comments:	⌘	
		Equivalent CRs in other Releases: CR272 cat. F to 25.101 v5.8.0

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

9.2.3   Closed Loop Diversity Performance

The closed loop transmit diversity (Mode 1) performance of the High Speed Physical Downlink Shared Channel (HS-DSCH) in multi-path fading environments are determined by the information bit throughput R.

Note: ~~The results in Section 9.2.3 assume error-free HS-SCCH signalling and are subject to further review upon completion of further assessment of the transmit diversity configuration for the HS-SCCH.~~

9.2.3.1   Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

For the parameters specified in Table 9.16, the requirements are specified in terms of a minimum information bit throughput R as shown in Table 9.17 for the DL reference channels specified in Annex A.7.1.

Table 9.16: Test Parameters for Testing QPSK FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference			P-CPICH	
I_{oc}	dBm/3.84 MHz		-60	
DPCH frame offset ($\tau_{DPCH,n}$)	Chip		0	
Redundancy and constellation version coding sequence			{0,2,5,6}	
Maximum number of HARQ transmission			4	
Feedback Error Rate	%		4	
Closed loop timing adjustment mode			1	

Table 9.17: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c / I_{or} **(dB)**	T-put R **(kbps) *** $\hat{I}_{or} / I_{oc}$ **= 0 dB**	T-put R **(kbps) *** $\hat{I}_{or} / I_{oc}$ **= 10 dB**
1	PA3	-6	118	399
		-3	225	458
2	PB3	-6	50	199
		-3	173	301
3	VA30	-6	47	204
		-3	172	305
* Notes:	1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)s 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)			

9.2.3.2   Minimum requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

For the parameters specified in Table 9.18, the requirements are specified in terms of a minimum information bit throughput R as shown in Table 9.19 for the DL reference channels specified in Annex A.7.1.

Table 9.18: Test Parameters for Testing 16-QAM FRCs H-Set 1/H-Set 2/H-Set 3

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference			P-CPICH	
I_{oc}	dBm/3.84 MHz		-60	
DPCH frame offset ($\tau_{DPCH,n}$)	Chip		0	
Redundancy and constellation version coding sequence			{6,2,1,5}	
Maximum number of HARQ transmission			4	
Feedback Error Rate	%		4	
Closed loop timing adjustment mode			1	

Table 9.19: Minimum requirement 16QAM, Fixed Reference Channel (FRC) H-Set 1/2/3

Test Number	Propagation Conditions	Reference value	
		HS-PDSCH E_c/I_{or} **(dB)**	T-put R **(kbps)** * $\hat{I}_{or}/I_{oc}$ **= 10 dB**
1	PA3	-6	361
		-3	500
2	PB3	-6	74
		-3	255
3	VA30	-6	84
		-3	254
* Notes:	1)The reference value R is for the Fixed Reference Channel (FRC) H-Set 1 2) For Fixed Reference Channel (FRC) H-Set 2 the reference values for R should be scaled (multiplied by 1.5 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer) 3) For Fixed Reference Channel (FRC) H-Set 3 the reference values for R should be scaled (multiplied by 3 and rounding to the nearest integer t-put in kbps, where values of i+1/2 are rounded up to i+1, i integer)		

9.2.3.3 Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 4/5

For the parameters specified in Table 9.20, the requirements are specified in terms of a minimum information bit throughput R as shown in Tables 9.21 and 9.22 for the DL reference channels specified in Annex A.7.1.4 and A.7.1.5 respectively.

Table 9.20: Test Parameters for Testing QPSK FRCs H-Set 4/H-Set 5

Parameter	Unit	Test 1	Test 2	Test 3
Phase reference			P-CPICH	
I_{oc}	dBm/3.84 MHz		-60	
DPCH frame offset ($\tau_{DPCH,n}$)	Chip		0	
Redundancy and constellation version coding sequence			{0,2,5,6}	
Maximum number of HARQ transmission			4	
Feedback Error Rate	%		4	
Closed loop timing adjustment mode			1	

Table 9.21: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 4

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10 dB
1	PA3	-6	114	398
		-3	223	457
2	PB3	-6	43	196
		-3	167	292
3	VA30	-6	40	199
		-3	170	305
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 4				

Table 9.22: Minimum requirement QPSK, Fixed Reference Channel (FRC) H-Set 5

Test Number	Propagation Conditions	Reference value		
		HS-PDSCH E_c/I_{or} (dB)	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 0 dB	T-put R (kbps) * $\hat{I}_{or}/I_{oc}$ = 10 dB
1	PA3	-6	177	599
		-3	338	687
2	PB3	-6	75	299
		-3	260	452
3	VA30	-6	71	306
		-3	258	458
* Notes: 1) The reference value R is for the Fixed Reference Channel (FRC) H-Set 5				

…………… Current Text continue here…….

C.5   HSDPA DL Physical channels

C.5.1   Downlink Physical Channels connection set-up

Table C.8 is applicable for the measurements for tests in subclause 9.2.1 and 9.3. Table C.9 is applicable for the measurements for tests in subclause 9.2.2. Table C.10 is applicable for the measurements for tests in subclause 9.2.3. Table C.11 is applicable for the measurements for tests in subclause 9.4.

Table C.8: Downlink physical channels for HSDPA receiver testing for Single Link performance.

Physical Channel	Parameter	Value	Note
P-CPICH	P-CPICH_Ec/Ior	-10dB	
P-CCPCH	P-CCPCH_Ec/Ior	-12dB	Mean power level is shared with SCH.
SCH	SCH_Ec/Ior	-12dB	Mean power level is shared with P-CCPCH – SCH includes P- and S-SCH, with power split between both. P-SCH code is S_dl,0 as per TS25.213 S-SCH pattern is scrambling code group 0
PICH	PICH_Ec/Ior	-15dB	
DPCH	DPCH_Ec/Ior	Test-specific	12.2 kbps DL reference measurement channel as defined in Annex A.3.1
HS-SCCH_1	HS-SCCH_Ec/Ior	Test-specific	Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval).
HS-SCCH_2	HS-SCCH_Ec/Ior	DTX'd	No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/Ior	DTX'd	As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/Ior	DTX'd	As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	OCNS interference consists of 6 dedicated data channels as specified in table C.10C.12.

Table C.9: Downlink physical channels for HSDPA receiver testing for Open Loop Transmit Diversity performance.

Physical Channel	Parameter	Value	Note
P-CPICH (antenna 1)	P-CPICH_Ec1/Ior	-13dB	1. Total P-CPICH_Ec/Ior = -10dB
P-CPICH (antenna 2)	P-CPICH_Ec2/Ior	-13dB	
P-CCPCH (antenna 1)	P-CCPCH_Ec1/Ior	-15dB	1. STTD applied. 2. Total P-CCPCH Ec/Ior is –12dB.
P-CCPCH (antenna 2)	P-CCPCH_Ec2/Ior	-15dB	
SCH (antenna 1/2)	SCH_Ec/Ior	-12dB	1. TSTD applied. 2. Power divided equally between primary and secondary SCH.
PICH (antenna 1)	PICH_Ec1/Ior	-18dB	1. STTD applied. 2. Total PICH Ec/Ior is –15dB.
PICH (antenna 2)	PICH_Ec2/Ior	-18dB	
DPCH	DPCH_Ec/Ior	Test-specific	1. STTD applied.
HS-SCCH_1	HS-SCCH_Ec/Ior	Test-specific	1. STTD applied. 2. Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval).
HS-SCCH_2	HS-SCCH_Ec/Ior	DTX'd	1. UE assumes STTD applied. 2. No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/Ior	DTX'd	1. As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/Ior	DTX'd	2. As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	1. STTD applied.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	1. STTD applied. 2. Balance of power I_{or} of the Node-B is assigned to OCNS 3. Power divided equally between antennas. 4. OCNS interference consists of 6 dedicated data channels as specified in table C.12.

Table C.10: Downlink physical channels for HSDPA receiver testing for Closed Loop. Transmit Diversity (Mode-1) performance.

Physical Channel	Parameter	Value	Note
P-CPICH (antenna 1)	P-CPICH_Ec1/Ior	-13dB	1. Total P-CPICH_Ec/Ior = -10dB
P-CPICH (antenna 2)	P-CPICH_Ec2/Ior	-13dB	
P-CCPCH (antenna 1)	P-CCPCH_Ec1/Ior	-15dB	1. STTD applied.
P-CCPCH (antenna 2)	P-CCPCH_Ec2/Ior	-15dB	2. Total P-CCPCH Ec/Ior is –12dB.
SCH (antenna 1/2)	SCH_Ec/Ior	-12dB	1. TSTD applied. 2. Power divided equally between primary and secondary SCH.
PICH (antenna 1)	PICH_Ec1/Ior	-18dB	1. STTD applied.
PICH (antenna 2)	PICH_Ec2/Ior	-18dB	2. Total PICH Ec/Ior is –15dB.
DPCH	DPCH_Ec/Ior	Test-specific	1. CL1 applied.
HS-SCCH_1	HS-SCCH_Ec/Ior	Test-specific	1. [TBD]STTD applied. 2. Specifies fraction of Node-B radiated power transmitted when TTI is active (i.e. due to minimum inter-TTI interval).
HS-SCCH_2	HS-SCCH_Ec/Ior	DTX'd	1. UE assumes [TBD]STTD applied. 2. No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/Ior	DTX'd	1. As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/Ior	DTX'd	2. As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/Ior	Test-specific	1. CL1 applied.
OCNS		Necessary power so that total transmit power spectral density of Node B (Ior) adds to one	1. STTD applied. 2. Balance of power I_{or} of the Node-B is assigned to OCNS 3. Power divided equally between antennas. 4. OCNS interference consists of 6 dedicated data channels as specified in table C.12.

Table C.11: Downlink physical channels for HSDPA receiver testing for HS-SCCH detection performance

Parameter	Units	Value	Comment
CPICH E_c/I_{or}	dB	-10	
P-CCPCH E_c/I_{or}	dB	-12	Mean power level is shared with SCH.
SCH E_c/I_{or}	dB	-12	Mean power level is shared with P-CCPCH – SCH includes P- and S-SCH, with power split between both. P-SCH code is S_dl,0 as per TS25.213 S-SCH pattern is scrambling code group 0
PICH E_c/I_{or}	dB	-15	
HS-DSCH-1 E_c/I_{or}	dB	-10	HS-DSCH associated with HS-SCCH-1
HS-DSCH-2 E_c/I_{or}	dB	DTX	HS-DSCH associated with HS-SCCH-2
HS-DSCH-3 E_c/I_{or}	dB	DTX	HS-DSCH associated with HS-SCCH-3
HS-DSCH-4 E_c/I_{or}	dB	DTX	HS-DSCH associated with HS-SCCH-4
DPCH E_c/I_{or}	dB	-8	12.2 kbps DL reference measurement channel as defined in Annex A.3.1
HS-SCCH-1 E_c/I_{or}	dB	Test Specific	All HS-SCCH's allocated equal E_c/I_{or}. Specifies E_c/I_{or} when TTI is active.
HS-SCCH-2 E_c/I_{or}	dB		
HS-SCCH-3 E_c/I_{or}	dB		
HS-SCCH-4 E_c/I_{or}	dB		
OCNS E_c/I_{or}	dB	Necessary power so that total transmit power spectral density of Node B (Ior) adds to one Remaining power at Node-B (including HS-SCCH power allocation when HS-SCCH's inactive).	OCNS interference consists of 6 dedicated data channels as specified in table C.10 C.12.

C.5.2   OCNS Definition

The selected channelization codes and relative power levels for OCNS transmission during for HSDPA performance assessment are defined in Table C.10C.12. The selected codes are designed to have a single length-16 parent code.

Table C.10C.12: OCNS definition for HSDPA receiver testing.

Channelization Code at SF=128	Relative Level setting (dB)	DPCH Data
2	-6	The DPCH data for each channelization code shall be uncorrelated with each other and with any wanted signal over the period of any measurement.
3	-8	
4	-8	
5	-10	
6	-7	
7	-9	

CHANGE REQUEST

| ⌘ | **25.101** CR **305** | ⌘**rev** | | ⌘ | Current version: | **6.2.0** | ⌘ |

*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:	⌘	DTX handling for CQI test in fading channel			
Source:	⌘	RAN WG4			
Work item code:⌘		HSDPA-RF	***Date:*** ⌘	26/11/2003	

Category: ⌘ **A**	***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 Node B emulator behaviour when DTX is reported in ACK/NACK field is unclear. This may lead to differennce in test result depending on how frequent DTX is observed.
Summary of change:	⌘	It is proposed to clarify that: In calculating BLER, for an HARQ process, if an odd number of consecutive DTXs are reported, the corresponding packets and one subsequent packet shall be discarded from BLER calculation. If an even number of consecutive DTXs are reported, the corresponding packets shall be discarded from BLER calculation.
Consequences if not approved:	⌘	Different Node B emulator whith different DTX handling may give different test result. <Isolated Impact Analysis> Impact on specifed performance requiremnents should be negligible if the current requirements were generated based on sufficiaent power set up for HS-SCCH so that the DTX report rate was low.

Clauses affected:	⌘	9.3.2

		Y	**N**		
Other specs affected:	⌘			Other core specifications	⌘
				Test specifications	
				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.

9.3.2   Fading propagation conditions

The reporting accuracy of the channel quality indicator (CQI) under fading environments is determined by the BLER performance using the transport format indicated by the reported CQI median.

In calculating BLER, for an HARQ process, if an odd number of consecutive DTXs are reported, the corresponding packets and one subsequent packet shall be discarded from BLER calculation. If an even number of consecutive DTXs are reported, the corresponding packets shall be discarded from BLER calculation.

The specified requirements may be subject to further simulations to verify assumptions.

CR-Form-v7

CHANGE REQUEST

⌘　　**25.101** CR **309**　　⌘**rev** **1** ⌘ Current version: **6.2.0** ⌘

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

Title: ⌘	Additional Specification of CQI Testing for UE Capability Categories 11 and 12
Source: ⌘	RAN WG4

Work item code:⌘	HSDPA-RF	**Date:** ⌘	26/11/2003

Category: ⌘	**A**	**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: ⌘	For UE capability categories 11 and 12, there are two tests under AWGN conditions and one under fading conditions. The purpose of this CR is to increase the number of tests to three under AWGN conditions and two tests under fading conditions.
Summary of change:⌘	The number of CQI tests for UE capability categories 11 and 12 are increased from two to three under AWGN conditions and one to two under fading conditions as agreed in RAN4 #28
Consequences if ⌘ **not approved:**	There would not be enough CQI test for UE capability categories

Clauses affected: ⌘	9.3.1.1, 9.3.2.2

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

Other comments: ⌘	
	Equivalent CRs in other Releases: CR283r1 cat. F to 25.101 v5.8.0

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

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

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

9.3.1.2 Minimum Requirement – UE capability categories 11,12

For the parameters specified in Table 9.24, the reported CQI value shall be in the range of +/-2 of the reported median more than 90% of the time. If the HS-PDSCH (BLER) using transport format indicated by median CQI is less than 0.1, BLER using transport format indicated by (median CQI +2) shall be larger than 0.1. If the HS-PDSCH (BLER) using transport format indicated by median CQI is larger than 0.1, BLER using transport format indicated by (median CQI -1) shall be less than 0.1.

Table 9.24: Test Parameter for CQI: categories 11,12

Parameter	Unit	Test 1	Test 2	<u>Test 3</u>
$\hat{I}_{or} / I_{oc}$	dB	0	5	<u>10</u>
I_{oc}	dBm/3.84 MHz	-60
Phase reference	-	P-CPICH
HS-PDSCH E_c / I_{or} (*)	dB	-3
HS-SCCH_1 E_c / I_{or}	dB	-10
DPCH E_c / I_{or}	dB	-10
Maximum number of H-ARQ transmission	-	1
Number of HS-SCCH set to be monitored	-	1
CQI feedback cycle	ms	2
CQI repetition factor	-	1
HS-DSCH transmission pattern	-	"XOOXOOX" to incorporate inter-TTI=3 UEs, where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates DTX

Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined in [7]

Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI, median CQI -1, median CQI+2 are used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214

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9.3.2.2 Minimum Requirement – UE capability categories 11,12

For the parameters specified in Table 9.27, the requirements are specified in terms of BLERs at particular reported CQIs when a fixed transport format given by CQI median as shown in Table 9.28. The BLER at a particular reported CQI is obtained by associating a particular CQI reference measurement period with HS-PDSCH subframe overlapping with the end of this CQI reference measurement period and calculating the fraction of erroneous HS-PDSCH subframes.

Table 9.27: Test Parameters for CQI test in fading: categories 11-12

Parameter	Unit	Test 1	Test 2
HS-PDSCH E_c/I_{or} (*)	dB	-8	-4
$\hat{I}_{or}/I_{oc}$	dB	0	5
I_{oc}	dBm/3.84 MHz	-60	
Phase reference	-	P-CPICH	
HS-SCCH_1 E_c/I_{or}	dB	-8.5	
DPCH E_c/I_{or}	dB	-6	
Maximum number of H-ARQ transmission	-	1	
Number of HS-SCCH set to be monitored	-	1	
CQI feedback cycle	ms	2	
CQI repetition factor	-	1	
HS-DSCH transmission pattern	-	"….XOOXOOX…." to incorporate inter-TTI=3 UEs, where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates DTX	
Propagation Channel		Case 8	
Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined in [7] Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI is used. Other physical channel parameters are configured according to the CQI maping table described in TS25.214			

Table 9.28: Minimum requirement for CQI test in fading for categories 11-12

Reported CQI	Maximum BLER	
	Test 1	Test2
CQI median	60%	60%
CQI median + 3	15%	15%