TSG RAN Meeting #25 Palm Springs, US, 7 - 9 September 2004

RP-040284

Title	CRs (Rel-5 and Rel-6 Category A) to TS25.101 for HSDPA-RF
Source	TSG RAN WG4
Agenda Item	7.5.5

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-040526	25.101	360		F	Rel-5	5.11.0	Clarification of HS-DSCH level	HSDPA-RF
R4-040527	25.101	361		Α	Rel-6	6.4.0	Clarification of HS-DSCH level	HSDPA-RF
R4-040569	25.101	362	1	F	Rel-5	5.11.0	Correction to OCNS code allocation for HSDPA testing	HSDPA-RF
R4-040570	25.101	363	1	Α	Rel-6	6.4.0	Correction to OCNS code allocation for HSDPA testing	HSDPA-RF

3GPP TSG RAN WG4 (Radio) Meeting #32

R4-040526

Prague, Czech Republic	16 - 20 August 2004
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	CR-Form-v7.1
æ	25.101 CR ³⁶⁰ # rev # Current version: 5.11.0 #
For <u>HELP</u> on u	sing this form, see bottom of this page or look at the pop-up text over the 策 symbols.
Proposed change a	affects: UICC apps # ME X Radio Access Network Core Network
Title: Ж	Clarification of HS-DSCH level
Source: अ	RAN WG4
Work item code: ೫	HSDPA-RF Date: # 30/08/2004
Category: ⊮	FRelease: %Rel-5Use one of the following categories: F (correction)Use one of the following releases: Ph2 (GSM Phase 2)A (corresponds to a correction in an earlier release)Ph2 (GSM Phase 2)B (addition of feature), C (functional modification of feature) D (editorial modification)R96 (Release 1996)D (editorial modification)R99 (Release 1998)D tetailed explanations of the above categories can be found in 3GPP TR 21.900.Rel-4 (Release 4)Rel-6 (Release 6) Rel-7 (Release 7)
	 Contradiction on HS-PDSCH level: In some places in 25.101 HS-PDSCH shall be transmitted continuously In some places in 25.101 HS-PDSCH shall be part time DTXed In some places in 25.101 nothing is mentioned even if the tests are of the same nature
Summary of chang	re: # It is clarified that HS-PDSCH level is transmitted with constant power continuously, and test-specifically allocated or not allocated to the UE
Consequences if not approved:	Confusion, where nothing is mentioned. Unnecessary functionality in the tester, as DTX is not relevant for the test.
Clauses affected:	₩ 9.3.1.1, 9.3.1.2, 9.3.2.1, 9.3.2.2, A.7.1.,1 A.7.1.2, A.7.1.4, A.7.1.5, C.5.1
Other specs affected:	Y N % N Other core specifications # X Test specifications 34.121 N O&M Specifications 34.121
Other comments:	Solution in the sector of t

Equivalent CRs in other Releases: CR361 cat. A to 25.101 v6.4.0

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 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.

Parameter	Unit	Test 1	Test 2	Test 3	
\hat{I}_{or} / I_{oc}	dB	0	5	10	
I _{oc}	dBm/3.84 MHz		-60		
Phase reference	-		P-CPICH		
HS-PDSCH E_c / I_{or} (*)	dB		-3		
HS-SCCH_1 E_c / I_{or}	dB		-10		
DPCH E _c / I _{or}	dB		-10		
Maximum number of H-ARQ transmission	-		1		
Number of HS-SCCH set to be monitored	-	1			
CQI feedback cycle	ms	2			
CQI repetition factor	-	1			
HS-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_TTI, in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.			
-	ower offset "I" is configured by RRC accordingly and as defined				
in [7] Iote2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI, median CQI -1, median CQI+2 are used. Other physical channel parameters are configured according to the CQI mapping table described in TS25.214					

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

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.

Parameter		Unit	Test 1	Test 2	Test 3	
\hat{I}_{or} / I_{oc}		dB	0	5	10	
	I _{oc}	dBm/3.84 MHz		-60		
Phas	e reference	-		P-CPICH		
HS-PD	SCH E_c / I_{or} (*)	dB		-3		
HS-SC	CH_1 E_c / I_{or}	dB		-10		
DP	CH E_c / I_{or}	dB		-10		
	um number of transmission	-		1		
Number of HS-SCCH set to be monitored		-	1			
CQI fe	edback cycle	ms	2			
CQI re	petition factor	-	1			
	H transmission pattern	-	which HS-P UE, and "O" i <u>HS-PDSCH</u> <u>The HS-DS</u>	where "X" ind DSCH is alloc ndicates DTX_ is not allocated SCH shall be tr sly with consta	ated to the TTI, in which d to the UE. ansmitted	
Note1: Note2:	defined in [7] TF for HS-PDS based on media physical chann	urement power offset "Γ" is configured by RRC accordingly and as ed in [7] r HS-PDSCH is configured according to the reported CQI statistics. TF d on median CQI, median CQI -1, median CQI+2 are used. Other cal channel parameters are configured according to the CQI mapping described in TS25.214				

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

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.

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.

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	-6	60	
Phase reference	-	P-CF	PICH	
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	-	to the UE, and "O" in which HS-PDSC to the UE. The H	where "X" indicates DSCH is allocated indicates DTX TTI, CH is not allocated S-DSCH shall be ntinuously with	
Propagation Channel		Cas	se 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 mapping table described in TS25.214				

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

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

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

9.3.2.2 Minimum Requirement – UE capability categories 11,12

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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.

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	-6	60	
Phase reference	-	P-CF	PICH	
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	-	incorporate UEs, wl indicates T HS-PDSCH to the UE indicates E which HS- not allocate The HS-DS transe continuo	DOX" to inter-TTI=3 here "X" TI in which is allocated and "O" DTX_TTI, in PDSCH is d to the UE. CH shall be mitted usly with t power.	
Propagation Channel		Cas	se 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 mapping table described in TS25.214				

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

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

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Reported CQI	Maximum BLER			
Reported CQI	Test 1	Test 2		
CQI median	60%	60%		
CQI median + 3	15%	15%		

A.7 DL reference channel parameters for HSDPA tests

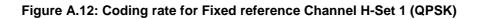
A.7.1 Fixed Reference Channel (FRC)

A.7.1.1 Fixed Reference Channel Definition H-Set 1

Table A.25: Fixed Reference Channel H-Set 1

Parameter	Unit	Va	lue		
Nominal Avg. Inf. Bit Rate	kbps	534	777		
Inter-TTI Distance	TTI's	3	3		
Number of HARQ Processes	Proces	2	2		
	ses	2	2		
Information Bit Payload ($N_{\rm INF}$)	Bits	3202	4664		
Number Code Blocks	Blocks	1	1		
Binary Channel Bits Per TTI	Bits	4800	7680		
Total Available SML's in UE	SML's	19200	19200		
Number of SML's per HARQ Proc.	SML's	9600	9600		
Coding Rate		0.67	0.61		
Number of Physical Channel Codes	Codes	5	4		
Modulation		QPSK	16QAM		
Note: The HS-DSCH shall be transmitted continuously with constant					
power but only every third TTI shall be allo	power but only every third TTI shall be allocated to the UE under test.				

Inf. Bit Payload	3202				
CRC Addition	3202	24 CRC			
Code Block Segmentation	3226				
Turbo-Encoding (R=1/3)			9678		12 Tail Bits
1st Rate Matching			9600		
RV Selection		4800]	
Physical Channel Segmentation	960				



Inf. Bit Payload	4664				
CRC Addition	4664	24 CRC			
Code Block Segmentation	4688				
Turbo-Encoding (R=1/3)			14064		12 Tail Bits
1st Rate Matching			9600		
RV Selection		7680]	
Physical Channel Segmentation	1920				

Figure A.13: Coding rate for Fixed reference Channel H-Set 1 (16 QAM)

A.7.1.2 Fixed Reference Channel Definition H-Set 2

Segmentation

960

Γ	Parameter	Unit	Va	lue	
	Nominal Avg. Inf. Bit Rate	kbps	801	1166	
	Inter-TTI Distance	TTI's	2	2	
	Number of HARQ Processes			3	
	Information Bit Payload ($N_{\rm INF}$)			4664	
Γ	Number Code Blocks	Blocks	1	1	
Γ	Binary Channel Bits Per TTI	Bits	4800	7680	
Γ	Total Available SML's in UE	SML's	28800	28800	
	Number of SML's per HARQ Proc.	SML's	9600	9600	
Γ	Coding Rate			0.61	
Γ	Number of Physical Channel Codes			4	
Γ	Modulation		QPSK	16QAM	
Inf. Bit Paylo CRC Additio Code Block Segmentatio	on 3202 24 CRC				
Turbo-Encodir (R=1/3)	1g	9678			12 Tail Bits
1st Rate Match	ing	9600			
RV Selectio	n 4800				
Physical Channel Segmentation	960				

Table A.26: Fixed Reference Channel H-Set 2



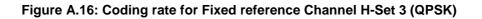
Inf. Bit Payload	4664					
CRC Addition	4664	24 CRC				
Code Block Segmentation	4688					
Turbo-Encoding (R=1/3)			14064		12	Tail Bits
1st Rate Matching			9600			
RV Selection		7680]		
Physical Channel Segmentation	1920					



A.7.1.3 Fixed Reference Channel Definition H-Set 3

_					
	Parameter	Unit	Va	lue	
	Nominal Avg. Inf. Bit Rate	kbps	1601	2332	
	Inter-TTI Distance	TTI's	1	1	
	Number of HARQ Processes	Processes	6	6	
	Information Bit Payload ($N_{{\scriptscriptstyle I\!N\!F}}$)	Bits	3202	4664	
	Number Code Blocks	Blocks	1	1	
	Binary Channel Bits Per TTI	Bits	4800	7680	
	Total Available SML's,in UE	SML's	57600	57600	
	Number of SML's per HARQ Proc.	SML's	9600	9600	
	Coding Rate		0.67	0.61	
	Number of Physical Channel Codes	Codes	5	4	
	Modulation		QPSK	16QAM	
CRC Additio Code Block	2226				
Segmentatio					
Turbo-Encodin (R=1/3)	g	9678			12 Tail Bits
1st Rate Matchi	ng	9600			
RV Selection	on 4800				
Physical Channel Segmentation	960				

Table A.27: Fixed Reference Channel H-Set 3



Inf. Bit Payload	4664				
CRC Addition	4664	24 CRC			
Code Block Segmentation	4688				
Turbo-Encoding (R=1/3)			14064		12 Tail Bits
1st Rate Matching			9600		
RV Selection		7680]	
Physical Channel Segmentation	1920				

Figure A.17: Coding rate for Fixed reference Channel H-Set 3 (16QAM)

A.7.1.4 Fixed Reference Channel Definition H-Set 4

Parameter	Unit	Value			
Nominal Avg. Inf. Bit Rate	kbps	534			
Inter-TTI Distance	TTI's	2			
Number of HARQ Processes	Processes	2			
Information Bit Payload ($N_{{\scriptscriptstyle I\!N\!F}}$)	Bits	3202			
Number Code Blocks	Blocks	1			
Binary Channel Bits Per TTI	Bits	4800			
Total Available SML's in UE	SML's	14400			
Number of SML's per HARQ Proc.	SML's	7200			
Coding Rate		0.67			
Number of Physical Channel Codes	Codes	5			
Modulation		QPSK			
Note: This test case verifies the minimum inter-TTI distance and therefore HS-PDSCH transmission shall be as follows: 00X0X000X0X, where 'X' marks TTI in which HS-PDSCH is transmittedallocated to the UE and '0' marks DTX_TTI, in which HS-PDSCH is not allocated to the UE., The HS-DSCH shall be transmitted continuously with constant power.					

Table A.28: Fixed Reference Channel H-Set 4

Inf. Bit Payload	3202]			
CRC Addition	3202	24 CRC			
Code Block Segmentation	3226				
Turbo-Encoding (R=1/3)			9678		12 Tail Bits
1st Rate Matching		7200			
RV Selection		4800			
Physical Channel Segmentation	960				

Figure A.18: Coding rate for Fixed Reference Channel H-Set 4

A.7.1.5 Fixed Reference Channel Definition H-Set 5

Parameter	Unit	Value		
Nominal Avg. Inf. Bit Rate	kbps	801		
Inter-TTI Distance	TTI's	1		
Number of HARQ Processes	Processes	3		
Information Bit Payload ($N_{\rm INF}$)	Bits	3202		
Number Code Blocks	Blocks	1		
Binary Channel Bits Per TTI	Bits	4800		
Total Available SML's in UE	SML's	28800		
Number of SML's per HARQ Proc.	SML's	9600		
Coding Rate		0.67		
Number of Physical Channel Codes	Codes	5		
Modulation QPSK				
Note: This test case verifies the minimum inter-TTI distance and therefore HS-PDSCH transmission shall be as follows: 00XXX000XXX, where 'X' marks TTI in which HS-PDSCH is allocated to the UE and '0' marks DTX TTI, in which HS-PDSCH is not <u>allocated to the UE The HS-DSCH shall be transmitted</u> continuously with constant power.				

Table A.29: Fixed Reference Channel H-Set 5

Inf. Bit Payload	3202]			
CRC Addition	3202	24 C R C			
Code Block Segmentation	3226				
Turbo-Encoding (R=1/3)			9678	12 Ta	ail Bits
1st Rate Matching			9600		
RV Selection		4800			
Physical Channel Segmentation	960				

Figure A.19: Coding rate for Fixed Reference Channel H-Set 5

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.

Physical Channel	Parameter	Value	Note
P-CPICH	P-CPICH_Ec/lor	-10dB	
P-CCPCH	P-CCPCH_Ec/lor	-12dB	Mean power level is shared with SCH.
SCH	SCH_Ec/lor	-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/lor	-15dB	
DPCH	DPCH_Ec/lor	Test-specific	12.2 kbps DL reference measurement channel as defined in Annex A.3.1
HS-SCCH_1	HS-SCCH_Ec/lor	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/lor	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/lor	DTX'd	As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/lor	DTX'd	As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/lor	Test-specific	
OCNS		Necessary power so that total transmit power spectral density of Node B (lor) adds to one	OCNS interference consists of 6 dedicated data channels as specified in table C.12.

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

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/lor	-13dB	1. Total P-CPICH_Ec/lor = -10dB
P-CPICH (antenna 2)	P-CPICH_Ec2/lor	-13dB	
P-CCPCH (antenna 1)	P-CCPCH_Ec1/lor	-15dB	1. STTD applied.
P-CCPCH (antenna 2)	P-CCPCH_Ec2/lor	-15dB	2. Total P-CCPCH Ec/lor is –12dB.
SCH (antenna 1/2)	SCH_Ec/lor	-12dB	 TSTD applied. Power divided equally between primary and secondary SCH.
PICH (antenna 1)	PICH_Ec1/lor	-18dB	1. STTD applied.
PICH (antenna 2)	PICH_Ec2/lor	-18dB	2. Total PICH Ec/lor is –15dB.
DPCH	DPCH_Ec/lor	Test-specific	1. STTD applied.
HS-SCCH_1	HS-SCCH_Ec/lor	Test-specific	 STTD applied. 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/lor	DTX'd	 UE assumes STTD applied. No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/lor	DTX'd	1. As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/lor	DTX'd	2. As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/lor	Test-specific	1. STTD applied.
OCNS		Necessary power so that total transmit power spectral density of Node B (lor) 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/lor	-13dB	1. Total P-CPICH_Ec/lor = -10dB
P-CPICH (antenna 2)	P-CPICH_Ec2/lor	-13dB	
P-CCPCH (antenna 1)	P-CCPCH_Ec1/lor	-15dB	1. STTD applied. 2. Total P-CCPCH Ec/lor is –12dB.
P-CCPCH (antenna 2)	P-CCPCH_Ec2/lor	-15dB	2. TOTAL F-CCFCH EC/101 IS - 120B.
SCH (antenna 1/2)	SCH_Ec/lor	-12dB	 TSTD applied. Power divided equally between primary and secondary SCH.
PICH (antenna 1)	PICH_Ec1/lor	-18dB	1. STTD applied.
PICH (antenna 2)	PICH_Ec2/lor	-18dB	2. Total PICH Ec/lor is –15dB.
DPCH	DPCH_Ec/lor	Test-specific	1. CL1 applied.
HS-SCCH_1	HS-SCCH_Ec/lor	Test-specific	 STTD applied. 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/lor	DTX'd	 UE assumes STTD applied. No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/lor	DTX'd	1. As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/lor	DTX'd	2. As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/lor	Test-specific	1. CL1 applied.
OCNS		Necessary power so that total transmit power spectral density of Node B (lor) adds to one	1. STTD applied.2. Balance of power I_{or} of the Node-B isassigned to OCNS.3. Power divided equally between antennas.4. OCNS interference consists of 6dedicated data channels as specified intable 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. <u>The HS-DSCH shall be transmitted</u> continuously with constant power.
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	OCNS interference consists of 6 dedicated data channels as specified in table C.12.

3GPP TSG RAN WG4 (Radio) Meeting #32

R4-040527

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For <u>HELP</u> on t	For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the $#$ symbols.							ymbols.				
Proposed change	Proposed change affects: UICC apps # ME X Radio Access Network Core Network											
Title: भ	t Cla	rificati	on of H	IS-DSCH	level							
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Consequences if not approved:	ж			where noth y function				DTX is	not relev	vant f	or the te	st.
Clauses affected:	ж			3.1.2, 9.3 7.1.2, A.					8.2,			
		YN]									
Other specs affected:	ж	N X N	Test	r core spe specificati Specifica	ons	H		.121				

% Isolated impact analysis: Does not impact UE implementation. Other comments: Avoids unnecessary functionality in the tester

9.3 Reporting of Channel Quality Indicator

9.3.1 Single Link Performance

9.3.1.1 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.

9.3.1.1.1 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 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.

Parameter	Unit	Test 1	Test 2	Test 3		
\hat{I}_{or} / I_{oc}	dB	0	5	10		
I _{oc}	dBm/3.84 MHz		-60	·		
Phase reference	-		P-CPICH			
HS-PDSCH E_c / I_{or} (*)	dB		-3			
HS-SCCH_1 E_c/I_{or}	dB		-10			
DPCH E_c / I_{or}	dB		-10			
Maximum number of H-ARQ transmission	-	1				
Number of HS-SCCH set to be monitored	-	1				
CQI feedback cycle	ms	2				
CQI repetition factor	-	1				
HS-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_TTI, in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.				
Note1: Measurement po in [7]	Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined					
based on mediar channel paramet						

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

9.3.1.1.2 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.

Parameter	Unit	Test 1	Test 2	Test 3	
\hat{I}_{or} / I_{oc}	dB	0	5	10	
I _{oc}	dBm/3.84 MHz		-60		
Phase reference	-		P-CPICH		
HS-PDSCH E_c / I_{or} (*)	dB		-3		
HS-SCCH_1 E_c/I_{or}	dB		-10		
DPCH E_c / I_{or}	dB		-10		
Maximum number of H-ARQ transmission	-	1			
Number of HS-SCCH set to be monitored	-	1			
CQI feedback cycle	ms	2			
CQI repetition factor	-	1			
HS-DSCH transmission pattern	"XOOXOOX", where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates DTX TTI, in which HS-PDSCH is not allocated to the <u>UE. The HS-DSCH shall be transmitted</u> continuously with constant power.				
 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 mapping table described in TS25.214 					

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

9.3.1.1.3 Minimum Requirement - UE capability categories 7, 8

For the parameters specified in Table 9.25, 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.

Paran	neter	Unit	Test 1	Test 2	Test 3		
Î _{or} /	I I oc	dB	0	5	10		
Ia	рс	dBm/3.84 MHz		-60			
Phase re	eference	-		P-CPICH			
HS-PDSCI	HE_c/I_{or} (*)	dB		-3			
HS-SCCH	1 E_c / I_{or}	dB		-10			
DPCH	E_c / I_{or}	dB		-10			
Maximum H-ARQ tra		-	1				
Number of H to be mo		-	1				
CQI feedb	ack cycle	ms	2				
CQI repeti	tion factor	-	1				
HS-DSCH tr patt		-	"XOOXOOX" to incorporate inter-TTI=3 UEs, where "X" indicates TTI in which HS- PDSCH is allocated to the UE, and "O" indicates DTX_TTI, in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.				
Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI, median CQI -1, median CQI+2 are used. Other physical channel parameters are configured according to the CQI mapping table described in TS25.214							

Table 9.25: Test Parameter for CQI: categories 7,8

9.3.1.2 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.

9.3.1.2.1 Minimum Requirement – UE capability categories 1-6

For the parameters specified in Table 9.26, 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 9.27. 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.

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	-6	60	
Phase reference	-	P-CF	PICH	
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	2	
CQI repetition factor	-	1		
HS-DSCH transmission pattern	on			
Propagation Channel		Cas	se 8	
 Note1: Measurement power offset "T" 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 mapping table described in TS25.214 				

Table 9.26: Test Parameters for CQI test in fading: categories 1-6

Table 9.27: Minimum requirement for CQI test in fading for categories 1-6

Reported CQI	Maximu	IM BLER
Reported Col	Test 1	Test2
CQI median	60%	60%
CQI median + 3	15%	15%

9.3.1.2.2 Minimum Requirement – UE capability categories 11,12

For the parameters specified in Table 9.28, 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 9.29. 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.

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	-6	60		
Phase reference	-	P-CI	PICH		
HS-SCCH_1 E_c/I_{or}	dB	-8	5.5		
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 					
Propagation Channel		Cas	se 8		
Note1: Measurement power offset "Г" 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 mapping table described in TS25.214					

Table 9.28: Test Parameters for CQI test in fading: categories 11-12

Table 9.29: Minimum requirement for CQI test in fading for categories 11-12

Reported CQI	Maximum BLER			
Reported Col	Test 1	Test 2		
CQI median	60%	60%		
CQI median + 3	15%	15%		

9.3.1.2.3 Minimum Requirement - UE capability categories 7,8

For the parameters specified in Table 9.30, 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 9.31. 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.

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	-6	0	
Phase reference	-	P-CF	PICH	
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	-			
Propagation Channel		Cas	se 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 9.30: Test Parameters for CQI test in fading: categories 7-8

Reported CQI	Maxim	um BLER
Reported Col	Test 1	Test2
CQI median	60%	60%
CQI median + 3	15%	15%

9.3.2 Open Loop Diversity Performance

9.3.2.1 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.

9.3.2.1.1 Minimum Requirement - UE capability categories 1-6

For the parameters specified in Table 9.32, 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 is larger than 0.1, BLER using transport format indicated by median CQI -1) shall be less than 0.1.

Parameter	Unit	Test 1	Test 2	Test 3	
\hat{I}_{or} / I_{oc}	dB	0	5	10	
I _{oc}	dBm/3.84 MHz		-60		
Phase reference	-		P-CPICH		
HS-PDSCH E _c / I _{or} (*)	dB		-3		
HS-SCCH _1 E_c / I_{or}	dB		-10		
DPCH E_c / I_{or}	dB		-10		
Maximum number of H-ARQ transmission	-		1		
Number of HS-SCCH set to be monitored	-	1			
CQI feedback cycle	ms		2		
CQI repetition factor	-		1		
HS-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_TTI, in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.			
in [7]	asurement power offset "Γ" is configured by RRC accordingly and as defined [7]				
based on media	SCH is configured according to the reported CQI statistics. TF lian CQI, median CQI -1, median CQI+2 are used. Other physical neters are configured according to the CQI mapping table S25.214				

Table 9.32: Test Parameter for CQI: categories 1-6

9.3.2.1.2 Minimum Requirement - UE capability categories 11,12

For the parameters specified in Table 9.33, 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.

Parameter	Unit	Test 1	Test 2	Test 3	
\hat{I}_{or} / I_{oc}	dB	0	5	10	
I _{oc}	dBm/3.84 MHz		-60		
Phase reference	-		P-CPICH		
HS-PDSCH E_c / I_{or} (*)	dB		-3		
HS-SCCH_1 E_c / I_{or}	dB		-10		
DPCH E_c / I_{or}	dB		-10		
Maximum number of H-ARQ transmission	-		1		
Number of HS-SCCH set to be monitored	-	1			
CQI feedback cycle	ms		2		
CQI repetition factor	-		1		
HS-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 DTX TTI, in which HS- PDSCH is not allocated to the UE. The HS- DSCH shall be transmitted continuously with constant power.			
	Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined				
in [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 mapping table described in TS25.214					

Table 9.33: Test Parameter for CQI: categories 11,12

9.3.2.1.3 Minimum Requirement - UE capability categories 7,8

For the parameters specified in Table 9.34, 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.

Para	meter	Unit	Test 1	Test 2	Test 3
\hat{I}_{or}	/ I _{oc}	dB	0	5	10
1	oc	dBm/3.84 MHz		-60	
Phase r	eference	-		P-CPICH	
HS-PDSC	CH E _c / I _{or} (*)	dB		-3	
HS-SCCH	H_1 E_c / I_{or}	dB		-10	
DPCH	E_c / I_{or}	dB		-10	
	number of ansmission	-	1		
	HS-SCCH set	-	1		
CQI feed	back cycle	ms	2		
CQI repe	tition factor	-		1	
	transmission ttern	-	"XOOXOOX" to incorporate inter-TTI=3 UEs, where "X" indicates TTI in which HS- PDSCH is allocated to the UE, and "O" indicates <u>DTX</u> <u>TTI, in which HS-PDSCH is</u> <u>not allocated to the UE. The HS-DSCH</u> <u>shall be transmitted continuously with</u> constant power.		
		ower 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 mapping table described in TS25.214				Other physical	

Table 9.34: Test Parameter for CQI: categories 7,8

9.3.2.2 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.

9.3.2.2.1 Minimum Requirement – UE capability categories 1-6

For the parameters specified in Table 9.35, 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 9.36. 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.

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	-6	60		
Phase reference	-	P-CF	PICH		
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	I		
CQI feedback cycle	ms	2	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_TT in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.			
Propagation Channel		Cas	se 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 mapping table described in TS25.214 					

Table 9.35: Test Parameters for CQI test in fading: categories 1-6

Table 9.36: Minimum requirement for CQI test in fading for categories 1-6

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

9.3.2.2.2 Minimum Requirement – UE capability categories 11,12

For the parameters specified in Table 9.37, 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 9.38. 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.

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	-6	60	
Phase reference	-	P-CF	PICH	
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	I	
CQI feedback cycle	ms	2	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_TT in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.		
Propagation Channel		Cas	se 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 mapping table described in TS25.214 				

Table 9.37: Test Parameters for CQI test in fading: categories 11-12

Table 9.38: Minimum requirement for CQI test in fading for categories 11-12

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

9.3.2.2.3 Minimum Requirement – UE capability categories 7,8

For the parameters specified in Table 9.39, 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 9.40. 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.

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	-6	60	
Phase reference	-	P-CF	PICH	
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	I	
CQI feedback cycle	ms	2	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 <u>DTX_TTI</u> in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be <u>transmitted continuously with</u> constant power.		
Propagation Channel		Cas	se 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 mapping table described in TS25.214 				

Table 9.39: Test Parameters for CQI test in fading: categories 7-8

Table 9.40: Minimum requirement for CQI test in fading for categories 7-8

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

9.3.3 Closed Loop Diversity Performance

9.3.3.1 AWGN propagation conditions

1

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.

9.3.3.1.1 Minimum Requirement - UE capability categories 1-6

For the parameters specified in Table 9.41, 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.

Parameter	Unit	Test 1	Test 2	Test 3
\hat{I}_{or} / I_{oc}	dB	0	5	10
I _{oc}	dBm/3.84 MHz		-60	
Phase reference	-		P-CPICH	
HS-PDSCH E _c / I _{or} (*)	dB		-3	
HS-SCCH _1 E_c/I_{or}	dB		-10	
DPCH E_c / I_{or}	dB		-10	
Maximum number of H-ARQ transmission	-		1	
Number of HS-SCCH set to be monitored	-	1		
CQI feedback cycle	ms		2	
CQI repetition factor	-		1	
HS-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_TTI, in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.		
Note1: Measurement p in [7]	rement power offset " Γ " is configured by RRC accordingly and as defined			
Note2: TF for HS-PDS0 based on media channel parame	TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI, median CQI -1, median CQI+2 are used. Other physical channel parameters are configured according to the CQI mapping table described in TS25.214			

Table 9.41: Test Parameter for CQI: categories 1-6

9.3.3.1.2 Minimum Requirement - UE capability categories 11,12

For the parameters specified in Table 9.42, 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.

Parameter	Unit	Test 1	Test 2	Test 3
\hat{I}_{or} / I_{oc}	dB	0	5	10
I _{oc}	dBm/3.84 MHz		-60	
Phase reference	-		P-CPICH	
HS-PDSCH E_c / I_{or} (*)	dB		-3	
HS-SCCH _1 E_c / I_{or}	dB		-10	
DPCH E _c / I _{or}	dB		-10	
Maximum number of H-ARQ transmission	-	1		
Number of HS-SCCH set to be monitored	-	1		
CQI feedback cycle	ms	2		
CQI repetition factor	-		1	
HS-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 TTI, in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.		
Note1: Measurement p in [7]	nent power offset " Γ " is configured by RRC accordingly and as defined			
Note2: TF for HS-PDS based on media channel parame				

Table 9.42: Test Parameter for CQI: categories 11,12

9.3.3.1.3 Minimum Requirement - UE capability categories 7,8

For the parameters specified in Table 9.43, 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.

Pa	arameter	Unit	Test 1	Test 2	Test 3
	\hat{I}_{or} / I_{oc}	dB	0	5	10
	Ioc	dBm/3.84 MHz		-60	
Phas	se reference	-		P-CPICH	
HS-PD	SCH <i>E_c</i> / <i>I_{or}</i> (*)	dB		-3	
HS-SC	CCH_1 E_c / I_{or}	dB		-10	
DP	CH E_c / I_{or}	dB		-10	
	um number of a transmission	-	1		
	of HS-SCCH set e monitored	-	1		
CQI fe	edback cycle	ms	2		
CQI re	epetition factor	-		1	
	CH 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_TTI, in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.		
Note1:		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 mapping table described in TS25.214					

Table 9.43: Test Parameter for CQI: categories 7,8

9.3.3.2 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.

9.3.3.2.1 Minimum Requirement – UE capability categories 1-6

For the parameters specified in Table 9.44, 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 9.45. 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.

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	-6	60	
Phase reference	-	P-CF	PICH	
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	I	
CQI feedback cycle	ms	2	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 TTI in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.		
Propagation Channel				
 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 mapping table described in TS25.214 				

Table 9.44: Test Parameters for CQI test in fading: categories 1-6

Table 9.45: Minimum requirement for CQI test in fading for categories 1-6

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

9.3.3.2.2 Minimum Requirement – UE capability categories 11,12

For the parameters specified in Table 9.46, 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 9.47. 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.

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	-6	60	
Phase reference	-	P-CF	PICH	
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	I	
CQI feedback cycle	ms	2	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_TT in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.		
Propagation Channel Case 8				
 Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined in [7] Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI is used. Other physical channel parameters are configured according to the CQI mapping table described in TS25.214 				

Table 9.46: Test Parameters for CQI test in fading: categories 11-12

Table 9.47: Minimum requirement for CQI test in fading for categories 11-12

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

9.3.3.2.3 Minimum Requirement – UE capability categories 7,8

For the parameters specified in Table 9.48, 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 9.49. 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.

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	-6	60	
Phase reference	-	P-CF	PICH	
HS-SCCH_1 E_c / I_{or}	dB	-8	.5	
DPCH E_c / I_{or}	dB	-1	6	
Maximum number of H-ARQ transmission	-	1		
Number of HS-SCCH set to be monitored	-	1		
CQI feedback cycle	ms	2	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_TT in which HS-PDSCH is not allocated to the UE. The HS-DSCH shall be transmitted continuously with constant power.		
Propagation Channel	Case 8			
Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined in [7] Note2: TF for HS-PDSCH is configured according to the reported CQI statistics. TF based on median CQI is used. Other physical channel parameters are				
configured according to the CQI mapping table described in TS25.214				

Table 9.48: Test Parameters for CQI test in fading: categories 7-8

Table 9.49: Minimum requirement for CQI test in fading for categories 7-8

I

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

A.7 DL reference channel parameters for HSDPA tests

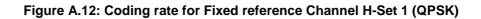
Table A.25: Fixed Reference Channel H-Set 1

A.7.1 Fixed Reference Channel (FRC)

A.7.1.1 Fixed Reference Channel Definition H-Set 1

Parameter Unit Value Nominal Avg. Inf. Bit Rate kbps 534 777 Inter-TTI Distance TTI's 3 3 Number of HARQ Processes Proces 2 2 ses Bits Information Bit Payload (N_{INF}) 3202 4664 Number Code Blocks Blocks 1 1 Binary Channel Bits Per TTI 4800 7680 Bits SML's Total Available SML's in UE 19200 19200 Number of SML's per HARQ Proc. SML's 9600 9600 Coding Rate 0.67 0.61 Number of Physical Channel Codes Codes 5 4 Modulation QPSK 16QAM Note: The HS-DSCH shall be transmitted continuously with constant power but only every third TTI shall be allocated to the UE under test.

Inf. Bit Payload [3202				
CRC Addition	3202	24 CRC			
Code Block Segmentation	3226				
Turbo-Encoding (R=1/3)			9678		12 Tail Bits
1st Rate Matching			9600		
RV Selection		4800]	
Physical Channel Segmentation	960				



Inf. Bit Payload	4664				
CRC Addition	4664	24 CRC			
Code Block Segmentation	4688				
Turbo-Encoding (R=1/3)			14064		12 Tail Bits
1st Rate Matching			9600		
RV Selection		7680]	
Physical Channel Segmentation	1920				

Figure A.13: Coding rate for Fixed reference Channel H-Set 1 (16 QAM)

A.7.1.2 Fixed Reference Channel Definition H-Set 2

Г	Parameter	Unit	Va	lue	
	Nominal Avg. Inf. Bit Rate	kbps	801	1166	
	Inter-TTI Distance	TTI's	2	2	
	Number of HARQ Processes	Processes	3	3	
	Information Bit Payload ($N_{{\scriptscriptstyle I\!N\!F}}$)	Bits	3202	4664	
	Number Code Blocks	Blocks	1	1	
	Binary Channel Bits Per TTI	Bits	4800	7680	
-	Total Available SML's in UE	SML's	28800	28800	
	Number of SML's per HARQ Proc.	SML's	9600	9600	
(Coding Rate		0.67	0.61	
	Number of Physical Channel Codes	Codes	5	4	
	Modulation		QPSK	16QAM	
	Note: The HS-DSCH shall be trans	mitted continuou	<u>isly with co</u>	nstant_	
	power but only every second TTI shall	be allocated to	the UE und	ler test.	
Inf. Bit Payloa	ad 3202				
CRC Additio	n 3202 24 CRC				
Code Block Segmentatio	2226				
Turbo-Encodin (R=1/3)	9	9678			12 Tail Bits
1st Rate Matchi	ng	9600			
RV Selectior	4800				

Table A.26: Fixed Reference Channel H-Set 2

Physical Channel Segmentation



Ţ

960

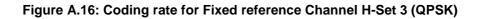
Inf. Bit Payload	4664				
CRC Addition	4664	24 CRC			
Code Block Segmentation	4688				
Turbo-Encoding (R=1/3)			14064	 12	Tail Bits
1st Rate Matching			9600		
RV Selection		7680			
Physical Channel Segmentation	1920				



A.7.1.3 Fixed Reference Channel Definition H-Set 3

]	Parameter	Unit	Va	lue			
	Nominal Avg. Inf. Bit Rate	kbps	1601	2332			
·	Inter-TTI Distance	TTI's	1	1			
	Number of HARQ Processes	Processes	6	6			
	Information Bit Payload ($N_{\rm INF}$)	Bits	3202	4664			
	Number Code Blocks	Blocks	1	1			
	Binary Channel Bits Per TTI	Bits	4800	7680			
	Total Available SML's,in UE	SML's	57600	57600			
	Number of SML's per HARQ Proc.	SML's	9600	9600			
	Coding Rate		0.67	0.61			
	Number of Physical Channel Codes	Codes	5	4			
	Modulation		QPSK	16QAM			
Inf. Bit Paylos CRC Additio Code Block Segmentatio	n 3202 24 CRC						
Turbo-Encodin (R=1/3)	9678 12 Tail Bits						
1st Rate Matchi	ng	9600					
RV Selection	n 4800						
Physical Channel Segmentation	960						

Table A.27: Fixed Reference Channel H-Set 3



Inf. Bit Payload	4664				
CRC Addition	4664	24 CRC			
Code Block Segmentation	4688				
Turbo-Encoding (R=1/3)			14064		12 Tail Bits
1st Rate Matching			9600		
RV Selection		7680]	
Physical Channel Segmentation	1920				

Figure A.17: Coding rate for Fixed reference Channel H-Set 3 (16QAM)

A.7.1.4 Fixed Reference Channel Definition H-Set 4

Parameter	Unit	Value			
Nominal Avg. Inf. Bit Rate	kbps	534			
Inter-TTI Distance	TTI's	2			
Number of HARQ Processes	Processes	2			
Information Bit Payload ($N_{{\scriptscriptstyle I\!N\!F}}$)	Bits	3202			
Number Code Blocks	Blocks	1			
Binary Channel Bits Per TTI	Bits	4800			
Total Available SML's in UE	SML's	14400			
Number of SML's per HARQ Proc.	SML's	7200			
Coding Rate		0.67			
Number of Physical Channel Codes	Codes	5			
Modulation		QPSK			
Note: This test case verifies the minimum inter-TTI distance and therefore HS-PDSCH transmission shall be as follows: 00X0X000X0X, where 'X' marks TTI in which HS-PDSCH is <u>allocated</u> transmitted to the UE and '0' marks <u>TTI, in which</u> <u>HS-PDSCH is not allocated to the UEThe HS-DSCH shall</u> <u>be transmitted continuously with constant power.DTX.</u>					

Table A.28: Fixed Reference Channel H-Set 4

Inf. Bit Payload	3202]			
CRC Addition	3202	24 CRC			
Code Block Segmentation	3226				
Turbo-Encoding (R=1/3)			9678		12 Tail Bits
1st Rate Matching		7200			
RV Selection		4800			
Physical Channel Segmentation	960				

Figure A.18: Coding rate for Fixed Reference Channel H-Set 4

A.7.1.5 Fixed Reference Channel Definition H-Set 5

Parameter	Unit	Value			
Nominal Avg. Inf. Bit Rate	kbps	801			
Inter-TTI Distance	TTI's	1			
Number of HARQ Processes	Processes	3			
Information Bit Payload ($N_{\rm INF}$)	Bits	3202			
Number Code Blocks	Blocks	1			
Binary Channel Bits Per TTI	Bits	4800			
Total Available SML's in UE	SML's	28800			
Number of SML's per HARQ Proc.	SML's	9600			
Coding Rate		0.67			
Number of Physical Channel Codes	Codes	5			
Modulation		QPSK			
Note: This test case verifies the minimum	inter-TTI distan	ce and			
therefore HS-PDSCH transmission	shall be as follow	vs:			
00XXX000XXX,					
where 'X' marks TTI in which HS-PDSCH is allocated to the					
UE and '0' marks TTI, in which HS-PDSCH is not allocated					
to the UEThe HS-DSCH shall be t	ransmitted contin	<u>nuously</u>			
with constant power. DTX.					

Table A.29: Fixed Reference Channel H-Set 5

Inf. Bit Payload	3202				
CRC Addition	3202	24 C R C			
Code Block Segmentation	3226				
Turbo-Encoding (R=1/3)			9678	12 Tai	il Bits
1st Rate Matching			9600		
RV Selection		4800			
Physical Channel Segmentation	960				

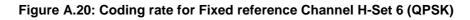
Figure A.19: Coding rate for Fixed Reference Channel H-Set 5

A.7.1.6 Fixed Reference Channel Definition H-Set 6

Table A.30: Fixed Reference Channel H-Set 6

Parameter	Unit	Value		
Nominal Avg. Inf. Bit Rate	kbps	3219	4689	
Inter-TTI Distance	TTI's	1	1	
Number of HARQ Processes	Proces	6	6	
	ses	0	0	
Information Bit Payload (N_{INF})	Bits	6438	9377	
Number Code Blocks	Blocks	2	2	
Binary Channel Bits Per TTI	Bits	9600	15360	
Total Available SML's in UE	SML's	115200	115200	
Number of SML's per HARQ Proc.	SML's	19200	19200	
Coding Rate		0.67	0.61	
Number of Physical Channel Codes	Codes	10	8	
Modulation		QPSK	16QAM	

Inf. Bit Payload	6438]			
CRC Addition	6438	24 CRC			
Code Block Segmentation	3231				
Turbo-Encoding (R=1/3)	[9693		12 Tail Bits
1st Rate Matching			9600		
RV Selection		4800]	
Physical Channel Segmentation	960				



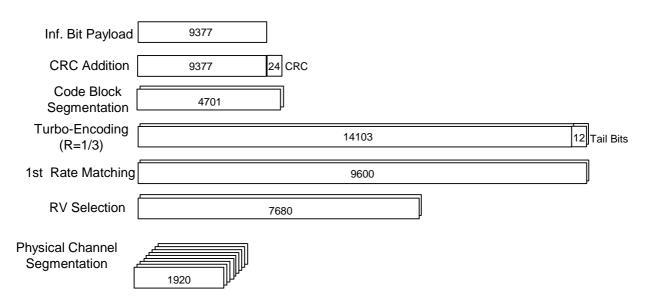


Figure A.21: Coding rate for Fixed reference Channel H-Set 6 (16 QAM)

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 9.4.1. Table C.12 is applicable for the measurements in subclause 9.4.2

Physical Channel	Parameter	Value	Note
P-CPICH	P-CPICH_Ec/lor	-10dB	
P-CCPCH	P-CCPCH_Ec/lor	-12dB	Mean power level is shared with SCH.
SCH	SCH_Ec/lor	-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/lor	-15dB	
DPCH	DPCH_Ec/lor	Test-specific	12.2 kbps DL reference measurement channel as defined in Annex A.3.1
HS-SCCH_1	HS-SCCH_Ec/lor	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/lor	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/lor	DTX'd	As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/lor	DTX'd	As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/lor	Test-specific	
OCNS		Necessary power so that total transmit power spectral density of Node B (lor) adds to one	OCNS interference consists of 6 dedicated data channels as specified in table C.13.

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

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

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/lor	-13dB	1. Total P-CPICH_Ec/lor = -10dB
P-CPICH (antenna 2)	P-CPICH_Ec2/lor	-13dB	
P-CCPCH (antenna 1)	P-CCPCH_Ec1/lor	-15dB	1. STTD applied. 2. Total P-CCPCH Ec/lor is –12dB.
P-CCPCH (antenna 2)	P-CCPCH_Ec2/lor	-15dB	2. TOTAL F-CCFCH EC/101 IS - 120B.
SCH (antenna 1/2)	SCH_Ec/lor	-12dB	 TSTD applied. Power divided equally between primary and secondary SCH.
PICH (antenna 1)	PICH_Ec1/lor	-18dB	1. STTD applied.
PICH (antenna 2)	PICH_Ec2/lor	-18dB	2. Total PICH Ec/lor is –15dB.
DPCH	DPCH_Ec/lor	Test-specific	1. CL1 applied.
HS-SCCH_1	HS-SCCH_Ec/lor	Test-specific	 STTD applied. 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/lor	DTX'd	 UE assumes STDD] applied. No signalling scheduled, or power radiated, on this HS-SCCH, but signalled to the UE as present.
HS-SCCH_3	HS-SCCH_Ec/lor	DTX'd	1. As HS-SCCH_2.
HS-SCCH_4	HS-SCCH_Ec/lor	DTX'd	2. As HS-SCCH_2.
HS-PDSCH	HS-PDSCH_Ec/lor	Test-specific	1. CL1 applied.
OCNS		Necessary power so that total transmit power spectral density of Node B (lor) adds to one	1. STTD applied.2. Balance of power I_{or} of the Node-B isassigned to OCNS.3. Power divided equally between antennas.4. OCNS interference consists of 6dedicated data channels as specified intable C.13.

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 <u>The HS-DSCH shall be transmitted</u> continuously with constant power.
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	OCNS interference consists of 6 dedicated data channels as specified in table C.13.

Parameter	Units	Value	Comment
P-CPICH E_c / I_{or} (antenna 1)	dB	-13	1 Total B CBICH E/I = 10dB
P-CPICH E_c / I_{or} (antenna 2)	dB	-13	1. Total P-CPICH E_c/I_{or} = -10dB
P-CCPCH E_c / I_{or} (antenna 1)	dB	-15	1. STTD applied
P-CCPCH E_c / I_{or} (antenna 2)	dB	-15	2. Total P-CCPCH $E_c / I_{or} = -12$ dB
SCH E_c/I_{or} (antenna 1/2)	dB	-12	 TSTD applied 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} (antenna 1)	dB	-15	1. STTD applied
PICH E_c / I_{or} (antenna 2)	dB	-15	2. Total PICH $E_c / I_{or} = -12$ dB
HS-DSCH-1 E_c / I_{or}	dB	-10	1. STTD applied 2. HS-DSCH assoc. with HS-SCCH-1
HS-DSCH-2 E_c / I_{or}	dB	DTX	1. STTD applied 2. HS-DSCH assoc. with HS-SCCH-2
HS-DSCH-3 E_c / I_{or}	dB	DTX	1. STTD applied 2. HS-DSCH assoc. with HS-SCCH-3
HS-DSCH-4 E_c / I_{or}	dB	DTX	1. STTD applied 2. HS-DSCH assoc. with HS-SCCH-4
DPCH E_c / I_{or}	dB	-8	1. STTD applied 2. 12.2 kbps DL reference measurement channel as defined in Annex A.3.1
HS-SCCH-1 E_c / I_{or}	dB		
HS-SCCH-2 E _c / I _{or}	dB	T 1 O	1. STTD applied 2. All HS-SCCH's allocated equal E_c/I_{ac} .
HS-SCCH-3 E _c / I _{or}	dB	Test Specific	3. Specifies E_c/I_{or} when TTI is active.
HS-SCCH-4 E _c / I _{or}	dB		E_c / V_{or} month in each of
OCNS E_c / I_{or}	dB	Remaining power at Node-B (including HS- SCCH power allocation when HS- SCCH's inactive).	 STTD applied OCNS interference consists of 6 dedicated data channels as specified in table C.13. Power divided equally between antennas

Table C.12: Downlink physical channels for HSDPA receiver testing for HS-SCCH detection performance in Open Loop Diversity

3GPP TSG RAN WG4 (Radio) Meeting #32

R4-040569

CHANGE REQUEST							
ж	25.10	I CR <mark>362</mark>	жrev	1 ^೫	Current version	5.11.0 [#]	
For <mark>HELP</mark> on us	sing this fo	orm, see bottom	of this page or	look at ti	ne pop-up text ove	er the X symbols.	
Proposed change a	offects:	UICC apps ಱ	MEX	Radio /	Access Network	Core Network	
Title: ೫	Correcti	on to OCNS coo	le allocation for	HSDPA	testing		
C ourses							
Source: ೫	RAN W	4					
Work item code: #	HSDPA	RF			Date: ೫ <mark>3</mark>	0/08/2004	
Category: Ж	Use <u>one</u> c F (co A (co	f the following cat prrection) prresponds to a co ddition of feature),	orrection in an ea	rlier releas	2 (GS se) R96 (Re	el-5 following releases: SM Phase 2) elease 1996) elease 1997)	
	C (functional modification of feature)R98(Release 1998)D (editorial modification)R99(Release 1999)Detailed explanations of the above categories canRel-4(Release 4)be found in 3GPP TR 21.900.Rel-5(Release 5)Rel-6(Release 6)						
Reason for change		OCNS DPCH (ides with HS-SC			5.2 use codes 2-7 es.	7 (SF128) which	
Summary of change: # In table C.12 the OCNS DPCH codes 2 – 7 (SF128) are moved to 122-127 (SF128) which is the last SF16 code tree. Note: according to TS 25.101 section C.5.2 the main criteria is that the OCNS codes are all in the same SF16 code tree.							
Consequences if not approved:	業 The clas		ation will not m	eet the re	equirements beca	use there is a code	
Clauses affected:	ж <u>С5</u>	2					
Other specs affected:	ч ү ж	_	ations	¥ 34.	121		
Other comments:	ж Еq	uivalent CRs in o	other Releases:	CR363r	1 cat. A to 25.101	v6.4.0	

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:

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

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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.12. The selected codes are designed to have a single length-16 parent code.

Channelization Code at SF=128	Relative Level setting (dB) (Note 1)	DPCH Data
<u>12</u> 2	0	The DPCH data for each
<u>12</u> 3	-2	channelization code shall be
<u>12</u> 4	-2	uncorrelated with each other and
<u>12</u> 5	-4	with any wanted signal over the
<u>12</u> 6	-1	period of any measurement.
<u>12</u> 7	-3	

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

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.

3GPP TSG RAN WG4 (Radio) Meeting #32

R4-040570

Prague,	Czech	Republic	16 - 20	August 2	2004
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CHANGE REQUEST							CR-Form-v7			
ж	25.10	1 CR 363	<mark>3</mark> ж	rev	1 ⁹	₿ Curre	ent versi	ion:	6.4.0	ж
For <u>HELP</u> on us	sing this f	orm, see bott	om of this p	age or k	ook at	the pop-	-up text	over th	ne Ж syr	mbols.
Proposed change a	affects:	UICC apps8	ff <mark></mark>	MEX	Radio	o Access	Networl	k <mark>-</mark>	Core Ne	etwork
Title: Ж	Correcti	on to OCNS	code allocat	ion for H	HSDP.	A testing	I			
Source: as	RAN W	C4								
Source: ೫		64								
Work item code: ℜ	HSDPA	-RF				Ľ	Date:	30/08	3/2004	
	F (co A (c B (a C (fu D (e Detailed e	of the following prrection) orresponds to ddition of featu unctional modific explanations of n 3GPP <u>TR 21</u>	a correction in ire), ication of feat ation) the above ca	ture)		Use ease)	R96 R97 R98 R99 Rel-4 Rel-5	the follo (GSM I (Releas (Releas (Releas	owing rele Phase 2) se 1996) se 1997) se 1998) se 1999) se 4) se 5)	eases:
Reason for change: # The OCNS DPCH codes defined section C.5.2 use codes 2-7 (SF128) which collides with HS-SCCH and S-CCPCH codes. Summary of change: # In table C.12 the OCNS DPCH codes 2 – 7 (SF128) are moved to 122-127 (SF128) which is the last SF16 code tree. Note: according to TS 25.101 section C.5.2 the main criteria is that the OCNS codes are all in the same SF16 code tree.							27 section			
Consequences if not approved:	策 <mark>Th</mark> cla	e test implem sh.	entation will	not me	et the	requirem	nents be	cause	there is	a code
Clauses affected:	<mark>೫ C5</mark>	.2								
Other specs affected:	ж 📃	V Other core K Test speci O&M Spec		ons	ж З	4.121				
Other comments:	ដ Eq	uivalent CRs	in other Rel	eases: (CR362	2r1 cat. F	⁻ to 25.1	01 v5.	10.0	

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

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