3GPP TSG RAN Meeting #28 **RP-050216**
Quebec, Canada, 1 - 3 June 2005

Title **CRs (Rel-5 & Rel-6) to 25.101, 25.104, 25.133 & 25.141 for the removal of CPCH**
Source **3GPP TSG RAN WG4 (Radio)**
Agenda Item **7.7.9**

WG Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-050532	25.101	414	1	C	Rel-5	5.14.0	Feature Clean Up: Removal of CPCH	TEI5
R4-050404	25.101	415		C	Rel-6	6.7.0	Feature Clean Up: Removal of CPCH	TEI6
R4-050379	25.104	233		C	Rel-5	5.9.0	Feature Clean Up: Removal of CPCH	TEI5
R4-050380	25.104	234		C	Rel-6	6.8.0	Feature Clean Up: Removal of CPCH	TEI6
R4-050413	25.133	752		C	Rel-5	5.14.0	Feature Clean Up: Removal of CPCH	TEI5
R4-050414	25.133	753		C	Rel-6	6.9.0	Feature Clean Up: Removal of CPCH	TEI6
R4-050381	25.141	366		C	Rel-5	5.9.0	Feature Clean Up: Removal of CPCH	TEI5
R4-050382	25.141	367		C	Rel-6	6.9.0	Feature Clean Up: Removal of CPCH	TEI6

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050532**

Athens, Greece 9 - 13 May 2005

CR-Form-v7

CHANGE REQUEST

⌘ **25.101** **CR** **414** ⌘ **rev** **1** ⌘ Current version: **5.14.0** ⌘

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

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

Title:	⌘	Feature Clean Up: Removal of CPCH
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI5
Date:	⌘	16/05/2005
Category:	⌘	**C**
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:	⌘	RAN#27 decision on Feature Clean-up
Summary of change:	⌘	Removal of reference to CPCH and associated performance requirements **Isolated Impact Analysis** Functionality removed: CPCH Isolated impact statement: Since functionality is removed, UE implementations are not affected. Would affect UTRAN implementations supporting the removed functionality.
Consequences if not approved:	⌘	Introduction of new features and evolution of the existing feature remain slow also in the future.

Clauses affected:	⌘	6.5.2, 8.14. 8.15. 8.16. 8.16.1			
		Y	**N**		
Other specs affected:	⌘	**X**		Other core specifications	25.201, 25.211, 25.212, 25.213, 25.214, 25.215, 25.101, 25.423, 25.433, 25.104, 25.133
		X		Test specifications	34.121
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

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

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

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

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

6.2.2 UE maximum output power with HS-DPCCH

For all values of β_{hs} defined in [8] the UE maximum output powers as specified in Table 6.1A are applicable in the case when the HS-DPCCH is fully or partially transmitted during a DPCCH timeslot. In DPCCH time slots, where HS-DPCCH is not transmitted, the UE maximum output power shall fulfil the requirements specified in Table 6.1.

Table 6.1A: UE maximum output powers with HS-DPCCH

Ratio of β_c to β_d for all values of β_{hs}	Power Class 3		Power Class 4	
	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)
1/15 ≤ β_c/β_d ≤ 12/15	+24	+1/-3	+21	+2/-2
13/15 ≤ β_c/β_d ≤ 15/8	+23	+2/-3	+20	+3/-2
15/7 ≤ β_c/β_d ≤ 15/0	+22	+3/-3	+19	+4/-2

6.3 Frequency Error

The UE modulated carrier frequency shall be accurate to within ±0.1 PPM observed over a period of one timeslot compared to the carrier frequency received from the Node B. For the PRACH ~~and PCPCH~~ preambles the measurement interval is lengthened to 3904 chips (being the 4096 chip nominal preamble period less a 25 µs transient period allowance at each end of the burst). These signals will have an apparent error due to Node B frequency error and Doppler shift. In the later case, signals from the Node B must be averaged over sufficient time that errors due to noise or interference are allowed for within the above ±0.1PPM figure. The UE shall use the same frequency source for both RF frequency generation and the chip clock.

6.4 Output power dynamics

Power control is used to limit the interference level.

----- Change of Section ----

6.5.1 Transmit OFF power

Transmit OFF power is defined as the RRC filtered mean power when the transmitter is off. The transmit OFF power state is when the UE does not transmit except during UL compressed mode.

6.5.1.1 Minimum requirement

The transmit OFF power is defined as the RRC filtered mean power in a duration of at least one timeslot excluding any transient periods. The requirement for the transmit OFF power shall be less than –56 dBm.

6.5.2 Transmit ON/OFF Time mask

The time mask for transmit ON/OFF defines the ramping time allowed for the UE between transmit OFF power and transmit ON power. Possible ON/OFF scenarios are RACH ~~,CPCH~~ or UL compressed mode.

6.5.2.1 Minimum requirement

The transmit power levels versus time shall meet the mask specified in figure 6.2 for PRACH preambles ~~and CPCH preambles,~~ and the mask in figure 6.3 for all other cases. The off signal is defined as the RRC filtered mean power. The on signal is defined as the mean power.

The specification depends on each possible case.

- First preamble of RACH~~/CPCH~~: Open loop accuracy (Table 6.3).
- During preamble ramping of the RACH~~/CPCH~~, and between final RACH~~/CPCH~~ preamble and RACH~~/CPCH~~ message part: Accuracy depending on size of the required power difference.(Table 6.7). The step in total transmitted power between final RACH~~/CPCH~~ preamble and RACH~~/CPCH~~ message (control part + data part) shall be rounded to the closest integer dB value. A power step exactly half-way between two integer values shall be rounded to the closest integer of greater magnitude.
- After transmission gaps in compressed mode: Accuracy as in Table 6.9.
- Power step to Maximum Power: Maximum power accuracy (Table 6.1).

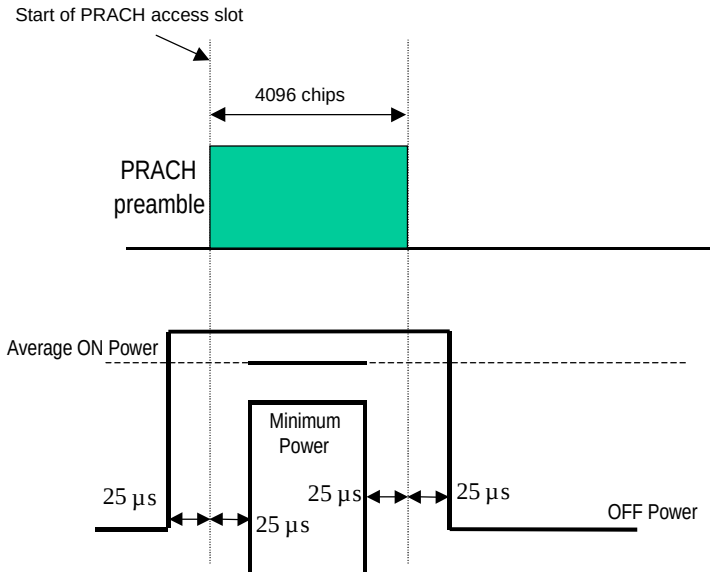

Figure 6.2: Transmit ON/OFF template for PRACH preambles ~~and CPCH preambles~~

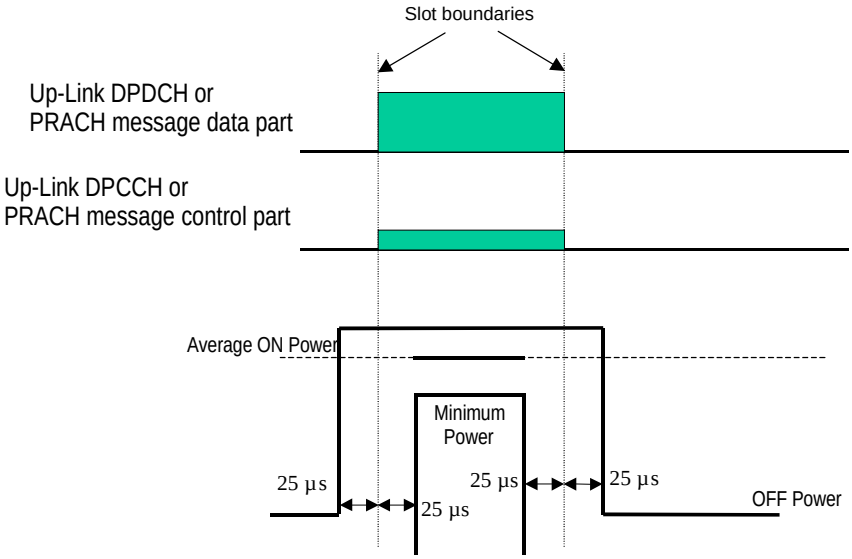

Figure 6.3: Transmit ON/OFF template for all other On/Off cases

Table 6.7: Transmitter power difference tolerance for RACH~~/CPCH~~ preamble ramping, and between final RACH~~/CPCH~~ preamble and RACH~~/CPCH~~ message part

Power step size (Up or down)* ΔP [dB]	Transmitter power difference tolerance [dB]
0	+/- 1
1	+/- 1
2	+/- 1.5
3	+/- 2
4 ≤ Δ P ≤10	+/- 2.5
11 ≤ Δ P ≤15	+/- 3.5
16 ≤ Δ P ≤20	+/- 4.5
21 ≤ Δ P	+/- 6.5

NOTE: Power step size for RACH~~/CPCH~~ preamble ramping is from 1 to 8 dB with 1 dB steps.

6.5.3 Change of TFC

----- Change of Section ----

8.13 Detection of Acquisition Indicator (AI)

The receiver characteristics of Acquisition Indicator (AI) are determined by the probability of false alarm Pfa and probability of correct detection Pd. Pfa is defined as a conditional probability of detection of AI signature given that a AI signature was not transmitted. Pd is defined as a conditional probability of correct detection of AI signature given that the AI signature is transmitted.

8.13.1 Minimum requirement

For the parameters specified in Table8.44 the Pfa and 1-Pd shall not the exceed the specified values in Table 8.45. Power of downlink channels other than AICH is as defined in Table C.3 of Annex C.

Table 8.44: Parameters for AI detection

Parameter	Unit	Test 1
Phase reference	-	P-CPICH
I_{oc}	dBm/3.84 MHz	-60
Number of other transmitted AI signatures on AICH	-	0
$\hat{I}_{or}/I_{oc}$	dB	-1
AICH_Ec/Ior	dB	-22.0
AICH Power Offset	dB	-12.0
Propagation condition	-	Static

Note that AICH_Ec/Ior can not be set. Its value is calculated from other parameters and it is given for information only. (AICH_Ec/Ior = AICH Power Offset + CPICH_Ec/Ior)

Table 8.45: Test requirements for AI detection

Test Number	Pfa	1-Pd
1	0.01	0.01

8.14 (VoidDetection of Access Preamble Acquisition Indicator Channel (AP-AICH)

The requirement for detection of the AP-AICH for CPCH is the same as the requirement for detection of the AI which is described in section 8.13 of this specification.

8.15 (Void)Detection of Collision Detection/Channel Assignment Indicator Channel (CD/CA-ICH)

The requirement for detection of the CD/CA-ICH for CPCH is the same as the requirement for detection of the AI which is described in section 8.13 of this specification.

8.16 (Void)Demodulation of CPCH Status Indicator Channel (CSICH)

The receive characteristics of the CPCH Status Indicator Channel (CSICH) are determined by the average message error Ratio (MER). Under the test conditions described below, a CSICH message demodulation error will cause the UE to transmit a CPCH message when there is pending UL data to transmit. MER is measured at the message rate listed for the conditions in Table 8.46.

8.16.1 (Void)Minimum requirement

For the parameters and conditions specified in Tables 8.46, 8.47 and 8.48 the MER shall not exceed the values listed in table 8.49.

Other downlink channels which are present in this test are P-CPICH, P-CCPCH, and PICH, and their powers are as specified in Annex C.3.2.

Table 8.46: (Void) CPCH test parameters and conditions for CSICH performance

Parameter	Test 1	Test 2
CPCH mode	UE Channel Selection (PCPCH availability is broadcast in CSICH)	
Number of PCPCHs in CPCH set	15	
Number of SIs per CSICH frame	15 (one SI message per PCPCH)	
Number of CSICH bits per SI message	8 (CSICH bit repeated 8 times in each SI message)	
CSICH Message Rate	750 per second (15 messages in 20 msec frame)	
AP preamble signatures	15 PCPCHs are given 1 signature each; 1 signature is unused.	
AP preamble slot subchannels	All slot subchannels are available for access without delay.	
CD preamble signatures	16 (all signatures used)	
CD preamble slot subchannels	All slot subchannels are available for access without delay.	
Persistency value for all PCPCHs	1 (full access, no delay)	
CSICH broadcast	N=15 SIs. For each PCPCH SI, SI=0 (PCPCH not available)	
AP-AICH broadcast	In each access slot, Node B transmits 15 AP-AICH ACKs, one for each PCPCH.	
Channel Assignment (CA)	Not active	
CD/CA-ICH broadcast	In each access slot, Node B transmits 16 CD/CA-ICH ACKs, one for each possible signature.	
Power control preamble length for all PCPCHs	0 slots	
Message length for all PCPCHs	10 ms (1 TTI) (Nfmax = 1)	
Spreading factor for all PCPCHs	64	
Propagation condition	Static	Case 3

Table 8.47: (Void) AP-AICH test parameters for CSICH performance

Parameter	Unit	Test 1	Test 2
Phase reference	-	P-CPICH	
I_{oc}	dBm/3.84 MHz	-60	
Number of transmitted AI signatures on AP-AICH	-	15 (all ACK)	
$\hat{I}_{or}/I_{oc}$	dB	-1	-3
AP-AICH_Ec/Ior	dB	-10.0	
AP-AICH Power Offset	dB	0	
Propagation condition		Static	Case 3

Note that AP-AICH_Ec/Ior cannot be set. Its value is calculated from other parameters and it is given for information only. (AP-AICH_Ec/Ior = AP-AICH Power Offset + CPICH_Ec/Ior)

Table 8.48: (VoidCD/CA-ICH test parameters for CSICH performance

Parameter	Unit	Test 1	Test 2
Phase reference	-	P-CPICH	
I_{oc}	dBm/3.84 MHz	-60	
Number of transmitted CD signatures on CD/CA-ICH	-	16 (all ACK)	
$\hat{I}_{or}/I_{oc}$	dB	-1	-3
CD/CA-ICH_Ec/Ior	dB	-10.0	
CD/CA-ICH Power Offset	dB	0	
Propagation condition		Static	Case 3

Note that CD/CA-ICH_Ec/Ior cannot be set. Its value is calculated from other parameters and it is given for information only. (CD/CA-ICH_Ec/Ior = CD/CA-ICH Power Offset + CPICH_Ec/Ior)

Table 8.49: (Void) CSICH demodulation requirements

Test Number	CSICH power offset	CSICH MER
1	-10.5 dB	0.001
2	-3.0 dB	0.001

9 Performance requirement (HSDPA)

----- Change of Section ----

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050404**

Athens, Greece 9 - 13 May 2005

CR-Form-v7

CHANGE REQUEST

⌘ **25.101** **CR** **415** ⌘ **rev** ⌘ Current version: **6.7.0** ⌘

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

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

Title:	⌘	Removal of CPCH
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI6
Date:	⌘	16/05/2005
Category:	⌘	**C**
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:	⌘	RAN#27 decision on Feature Clean-up
Summary of change:	⌘	Removal of reference to CPCH and associated performance requirements **Isolated Impact Analysis** Functionality removed: CPCH Isolated impact statement: Since functionality is removed, UE implementations are not affected. Would affect UTRAN implementations supporting the removed functionality.
Consequences if not approved:	⌘	Introduction of new features and evolution of the existing feature remain slow also in the future.

Clauses affected:	⌘	6.5.2, 8.14. 8.15. 8.16. 8.16.1			
		Y	**N**		
Other specs	⌘	**X**		Other core specifications	⌘ 25.201, 25.211, 25.212, 25.213, 25.214, 25.215, 25.101, 25.423, 25.433, 25.104, 25.133~~25.214, ??~~
affected:		**X**		Test specifications	34.121~~34.121, ??~~
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

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

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

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

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

6.2.2 UE maximum output power with HS-DPCCH

The applicability of this clause for UEs that support E-DCH is FFS.

For all values of β_{hs} defined in [8] the UE maximum output powers as specified in Table 6.1a are applicable in the case when the HS-DPCCH is fully or partially transmitted during a DPCCH timeslot. In DPCCH time slots, where HS-DPCCH is not transmitted, the UE maximum output power shall fulfil the requirements specified in Table 6.1.

Table 6.1a: UE maximum output powers with HS-DPCCH

Ratio of β_c to β_d for all values of β_{hs}	Power Class 3		Power Class 4	
	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)
1/15 ≤ β_c/β_d ≤ 12/15	+24	+1/-3	+21	+2/-2
13/15 ≤ β_c/β_d ≤ 15/8	+23	+2/-3	+20	+3/-2
15/7 ≤ β_c/β_d ≤ 15/0	+22	+3/-3	+19	+4/-2

6.3 Frequency Error

The UE modulated carrier frequency shall be accurate to within ±0.1 PPM observed over a period of one timeslot compared to the carrier frequency received from the Node B. For the PRACH ~~and PCPCH~~ preambles the measurement interval is lengthened to 3904 chips (being the 4096 chip nominal preamble period less a 25 μs transient period allowance at each end of the burst). These signals will have an apparent error due to Node B frequency error and Doppler shift. In the later case, signals from the Node B must be averaged over sufficient time that errors due to noise or interference are allowed for within the above ±0.1PPM figure. The UE shall use the same frequency source for both RF frequency generation and the chip clock.

6.4 Output power dynamics

Power control is used to limit the interference level.

----- Change of Section ----

6.5.1 Transmit OFF power

Transmit OFF power is defined as the RRC filtered mean power when the transmitter is off. The transmitter is considered to be off when the UE is not allowed to transmit. During UL compressed mode gaps, the UE is not considered to be off.

6.5.1.1 Minimum requirement

The transmit OFF power is defined as the RRC filtered mean power in a duration of at least one timeslot excluding any transient periods. The requirement for the transmit OFF power shall be less than –56 dBm.

6.5.2 Transmit ON/OFF Time mask

The time mask for transmit ON/OFF defines the transient period allowed for the UE between transmit OFF power and transmit ON power. During the transient period there are no additional requirements on UE transmit power beyond what is required in subclause 6.2 maximum output power observed over a period of at least one timeslot. ON/OFF scenarios include PRACH~~/PCPCH~~ preamble bursts, the beginning or end of PRACH~~/PCPCH~~ message parts and the beginning or end of UL DPCH transmissions.

6.5.2.1 Minimum requirement

The transmit power levels versus time shall meet the requirements in figure 6.2 for PRACH preambles ~~and CPCH preambles,~~ and the requirements in figure 6.3 for all other cases. The off power observation period is defined as the RRC filtered mean power in a duration of at least one timeslot excluding any transient periods. The on power observation period is defined as the mean power over one timeslot excluding any transient periods. For PRACH~~/PCPCH~~ preambles, the on power observation period is 3904 chips (4096 chips less the transient periods).

The off power specification in figures 6.2 and 6.3 is as defined in 6.5.1.1.

The average on power specification in figures 6.2 and 6.3 depends on each possible case.

- First preamble of RACH~~/CPCH~~: Open loop accuracy (Table 6.3).
- During preamble ramping of the RACH~~/CPCH~~, and between final RACH~~/CPCH~~ preamble and RACH~~/CPCH~~ message part: Accuracy depending on size of the required power difference.(Table 6.7). The step in total transmitted power between final RACH~~/CPCH~~ preamble and RACH~~/CPCH~~ message (control part + data part) shall be rounded to the closest integer dB value. A power step exactly half-way between two integer values shall be rounded to the closest integer of greater magnitude.
- After transmission gaps in compressed mode: Accuracy as in Table 6.9.
- Power step to Maximum Power: Maximum power accuracy (Table 6.1).

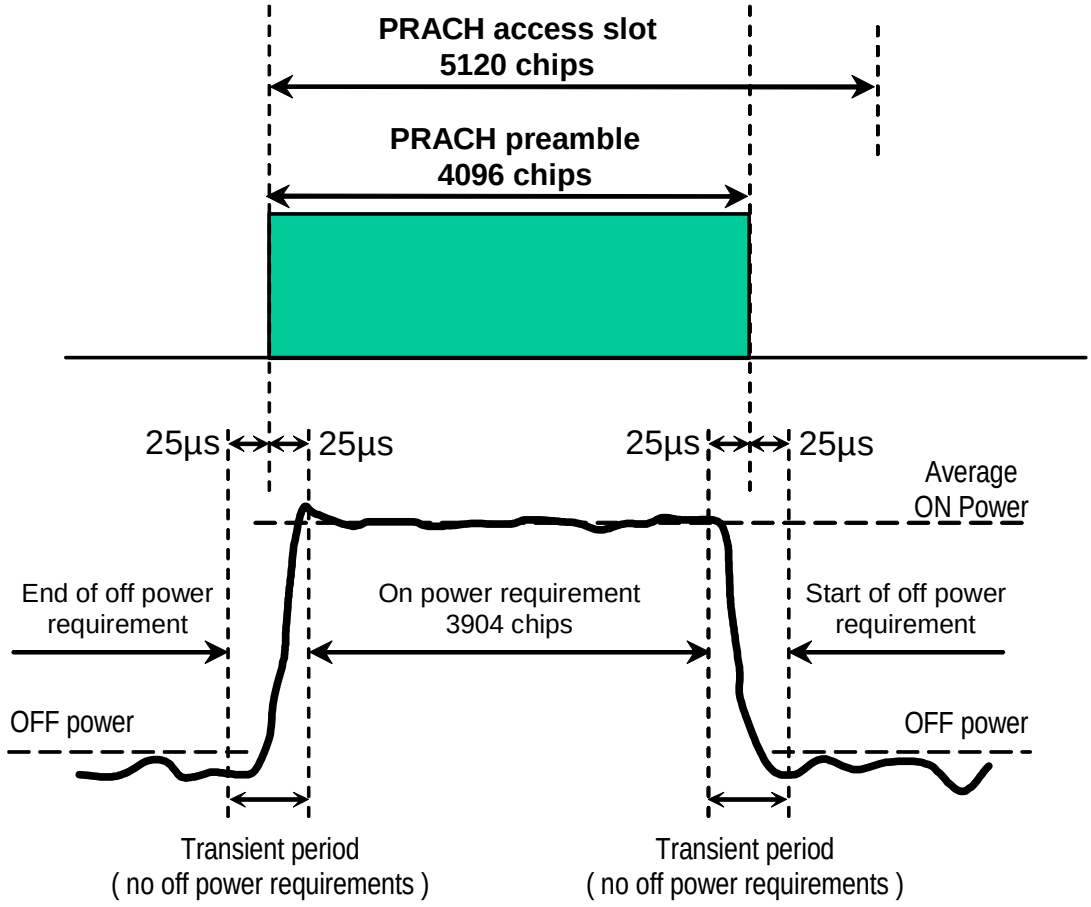

Figure 6.2: Transmit ON/OFF template for PRACH preambles ~~and CPCH preambles~~

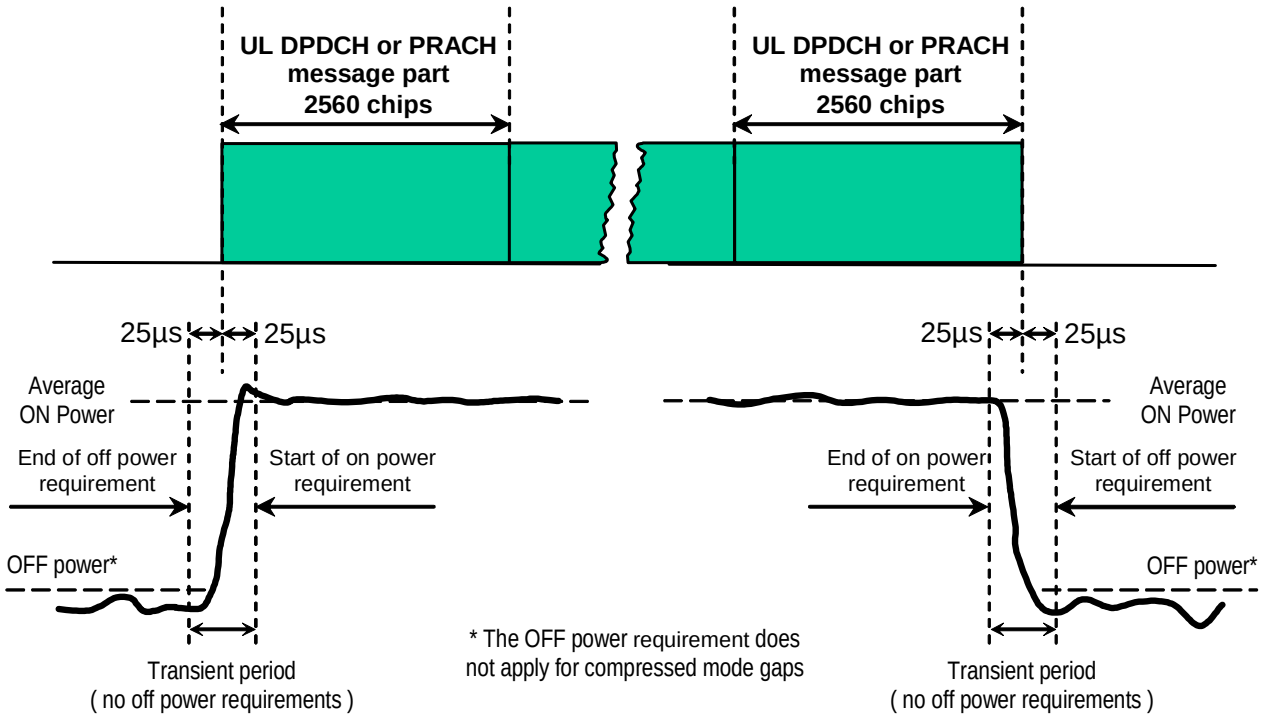

Figure 6.3: Transmit ON/OFF template for all other On/Off cases

Table 6.7: Transmitter power difference tolerance for RACH~~/CPCH~~ preamble ramping, and between final RACH~~/CPCH~~ preamble and RACH~~/CPCH~~ message part

Power step size (Up or down)* ΔP [dB]	Transmitter power difference tolerance [dB]
0	+/- 1
1	+/- 1
2	+/- 1.5
3	+/- 2
4 ≤ Δ P ≤10	+/- 2.5
11 ≤ Δ P ≤15	+/- 3.5
16 ≤ Δ P ≤20	+/- 4.5
21 ≤ Δ P	+/- 6.5

NOTE: Power step size for RACH~~/CPCH~~ preamble ramping is from 1 to 8 dB with 1 dB steps.

6.5.3 Change of TFC

----- Change of Section ----

8.13 Detection of Acquisition Indicator (AI)

The receiver characteristics of Acquisition Indicator (AI) are determined by the probability of false alarm Pfa and probability of correct detection Pd. Pfa is defined as a conditional probability of detection of AI signature given that a AI signature was not transmitted. Pd is defined as a conditional probability of correct detection of AI signature given that the AI signature is transmitted.

8.13.1 Minimum requirement

For the parameters specified in Table8.44 the Pfa and 1-Pd shall not the exceed the specified values in Table 8.45. Power of downlink channels other than AICH is as defined in Table C.3 of Annex C.

Table 8.44: Parameters for AI detection

Parameter	Unit	Test 1
Phase reference	-	P-CPICH
I_{oc}	dBm/3.84 MHz	-60
Number of other transmitted AI signatures on AICH	-	0
$\hat{I}_{or}/I_{oc}$	dB	-1
AICH_Ec/Ior	dB	-22.0
AICH Power Offset	dB	-12.0
Propagation condition	-	Static

Note that AICH_Ec/Ior can not be set. Its value is calculated from other parameters and it is given for information only. (AICH_Ec/Ior = AICH Power Offset + CPICH_Ec/Ior)

Table 8.45: Test requirements for AI detection

Test Number	Pfa	1-Pd
1	0.01	0.01

8.14 (Void) ~~Detection of Access Preamble Acquisition Indicator Channel (AP-AICH)~~

~~The requirement for detection of the AP-AICH for CPCH is the same as the requirement for detection of the AI which is described in section 8.13 of this specification.~~

8.15 (Void) ~~Detection of Collision Detection/Channel Assignment Indicator Channel (CD/CA-ICH)~~

~~The requirement for detection of the CD/CA-ICH for CPCH is the same as the requirement for detection of the AI which is described in section 8.13 of this specification.~~

8.16 (Void) ~~Demodulation of CPCH Status Indicator Channel (CSICH)~~

~~The receive characteristics of the CPCH Status Indicator Channel (CSICH) when CA is not active are determined by the average message error Ratio (MER). Under the test conditions described in 8.16.1, a CSICH message demodulation error will cause the UE to transmit a CPCH message when there is pending UL data to transmit. MER is measured at the message rate listed for the conditions in Table 8.46.~~

~~The receive characteristics of the CSICH when CA is active are determined by the error rate of demodulation of Minium Available Spreading Factor (MASF). Under the test conditions described in 8.16.2, the demodulation error of MASF bits transmitted over CSICH will cause that the UE transmits wrong CPCH Access Preamble to UTRAN. MASF Error rate is measured under the condition in Table 8.50~~

8.16.1 (Void) Minimum requirement when CA is not active

For the parameters and conditions specified in Tables 8.46, 8.47 and 8.48 the MER shall not exceed the values listed in table 8.49.

Other downlink channels which are present in this test are P-CPICH, P-CCPCH, and PICH, and their powers are as specified in Annex C.3.2.

Table 8.46: (Void) CPCH test parameters and conditions for CSICH performance when CA is not active

Parameter	Test 1	Test 2
CPCH mode	UE Channel Selection (PCPCH availability is broadcast in CSICH)	
Number of PCPCHs in CPCH set	15	
Number of SIs per CSICH frame	15 (one SI message per PCPCH)	
Number of CSICH bits per SI message	8 (CSICH bit repeated 8 times in each SI message)	
CSICH Message Rate	750 per second (15 messages in 20 msec frame)	
AP preamble signatures	15 PCPCHs are given 1 signature each; 1 signature is unused.	
AP preamble slot subchannels	All slot subchannels are available for access without delay.	
CD preamble signatures	16 (all signatures used)	
CD preamble slot subchannels	All slot subchannels are available for access without delay.	
Persistency value for all PCPCHs	1 (full access, no delay)	
CSICH broadcast	N=15 SIs. For each PCPCH SI, SI=0 (PCPCH not available)	
AP-AICH broadcast	In each access slot, Node B transmits 15 AP-AICH-ACKs, one for each PCPCH.	
Channel Assignment (CA)	Not active	
CD/CA-ICH broadcast	In each access slot, Node B transmits 16 CD/CA-ICH ACKs, one for each possible signature.	
Power control preamble length for all PCPCHs	0 slots	
Message length for all PCPCHs	10 ms (1 TTI) (Nfmax = 1)	
Spreading factor for all PCPCHs	64	
Propagation condition	Static	Case 3

Table 8.47: (Void) AP-AICH test parameters for CSICH performance when CA is not active

Parameter	Unit	Test 1	Test 2
Phase reference	-	P-CPICH	
I_{oc}	dBm/3.84 MHz	-60	
Number of transmitted AI signatures on AP-AICH	-	15 (all ACK)	
$\hat{I}_{or}/I_{oc}$	dB	-1	-3
AP-AICH_Ec/Ior	dB	-10.0	
AP-AICH Power Offset	dB	0	
Propagation condition		Static	Case 3

Note that AP-AICH_Ec/Ior cannot be set. Its value is calculated from other parameters and it is given for information only. (AP-AICH_Ec/Ior = AP-AICH Power Offset + CPICH_Ec/Ior)

Table 8.48: (Void) CD/CA-ICH test parameters for CSICH performance when CA is not active

Parameter	Unit	Test 1	Test 2
Phase reference	-	P-CPICH	
I_{oc}	dBm/3.84 MHz	-60	
Number of transmitted CD-signatures on CD/CA-ICH	-	16 (all ACK)	
$\hat{I}_{or}/I_{oc}$	dB	-1	-3
CD/CA-ICH_Ec/Ior	dB	-10.0	
CD/CA-ICH Power Offset	dB	0	
Propagation condition		Static	Case 3

Note that CD/CA-ICH_Ec/Ior cannot be set. Its value is calculated from other parameters and it is given for information only. (CD/CA-ICH_Ec/Ior = CD/CA-ICH Power Offset + CPICH_Ec/Ior)

Table 8.49: (Void) CSICH demodulation requirements when CA is not active

Test Number	CSICH power offset	CSICH MER
1	-10.5 dB	0.001
2	-3.0 dB	0.001

8.16.2 (Void) Minimum requirement when CA is active

For the parameters and conditions specified in Tables 8.50 and 8.51, the MASF Error rate shall not exceed the values listed in table 8.52.

Other downlink channels, which are present in this test, are P-CPICH, P-CCPCH, and PICH, and their powers are as specified in Annex C.3.2.

Table 8.50: (Void) CPCH test parameters and conditions for CSICH performance when CA is active

Parameter	Test 1	Test 2
CPCH mode	Channel Assignment is active (PCPCH availability as well as Minimum Available Spreading Factor are broadcast in CSICH)	
Number of PCPCHs in CPCH set	9	
Number of SIs per CSICH frame	15 (9 SIs for the availability of 9 PCPCH and 6 SIs for the transmission of MASF bits)	
Number of CSICH bits per SI message	8 (CSICH bit repeated 8 times in each SI message)	
CSICH Message Rate	750 per second (15 messages in 20 msec frame)	
AP preamble signatures	2 signatures are given to each data rate and 2 signatures are unused. Where: Signature number 0 and 1 correspond to MASF 256. Signature number 2 and 3 correspond to MASF 128. Signature number 4 and 5 correspond to MASF 64. Signature number 6 and 7 correspond to MASF 32. Signature number 8 and 9 correspond to MASF 16. Signature number 10 and 11 correspond to MASF 8. Signature number 12 and 13 correspond to MASF 4.	
AP preamble slot subchannels	All slot subchannels are available for access without delay.	
CSICH broadcast	The pattern of SIs is "0000000000000000" Where: MASF bits value is "000" For each PCPCH SI, SI=0 (All PCPCH are not available)	
PCPCH data rate expected by the UE	More than 15 kbps	
AP-AICH broadcast	In each access slot, Node B transmits 14 AP-AICH-NACKs	
Propagation condition	Static	Case 3

Table 8.51: (Void) ~~AP-AICH test parameters for CSICH performance when CA is active~~

~~Parameter~~	~~Unit~~	~~Test 1~~	~~Test 2~~
~~Phase reference~~	~~-~~	~~P-CPICH~~	
~~I_{oc}~~	~~dBm/3.84 MHz~~	~~-60~~	
~~Number of transmitted AI signatures on AP-AICH~~	~~-~~	~~14~~	
~~$\hat{I}_{or}/I_{oc}$~~	~~DB~~	~~-1~~	~~-3~~
~~AP-AICH_Ec/Ior~~	~~DB~~	~~-10.0~~	
~~AP-AICH Power Offset~~	~~DB~~	~~0~~	
~~Propagation condition~~		~~Static~~	~~Case 3~~

~~Note that AP-AICH_Ec/Ior cannot be set. Its value is calculated from other parameters and it is given for information only. (AP-AICH_Ec/Ior = AP-AICH Power Offset + CPICH_Ec/Ior)~~

Table 8.52: (Void)~~CSICH demodulation requirements when CA is active~~

~~Test Number~~	~~CSICH power offset~~	~~CSICH MER~~
~~1~~	~~-12.55 db~~	~~0.001~~
~~2~~	~~-6.15 db~~	~~0.001~~

~~Note that CSICH_Ec/Ior = CSICH power_Offset + CPICH_Ec/Ior~~

9 Performance requirement (HSDPA)

----- Change of Section ----

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050379**

Athens, Greece 9 - 13 May 2005

CR-Form-v7

CHANGE REQUEST

⌘ **25.104** **CR** **233** ⌘ **rev** ⌘ Current version: **5.9.0** ⌘

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

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

Title:	⌘	Feature Clean Up: Removal of CPCH
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI5
Date:	⌘	16/05/2005
Category:	⌘	**C**
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:	⌘	In RAN#27 removal of some UTRAN features was agreed in order to simplify the specifications.
Summary of change:	⌘	CPCH is removed from the specification. **Isolated Impact Analysis** Functionality removed: CPCH Isolated impact statement: Since functionality is removed, UE implementations are not affected. Would affect UTRAN implementations supporting the removed functionality.
Consequences if not approved:	⌘	

Clauses affected:	⌘	8.8				
		Y	**N**			
Other specs affected:	⌘	**X**		Other core specifications	⌘	25.201, 25.211, 25.212, 25.213, 25.214, 25.215, 25.301, 25.302, 25.303, 25.306, 25.321, 25.331, 25.401, 25.420, 25.423, 25.424, 25.425, 25.430, 25.433, 25.434, 25.435, 25.922
		X		Test specifications		25.141
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

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

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

8.8 ~~Performance requirement for CPCH~~Void

~~Performance requirements for CPCH consists of two parts: preamble detection and message demodulation. Requirements for these are in sections 8.8.1 and 8.8.2, respectively. Requirements are defined for two propagation conditions: static and fading case 3. The propagation conditions are defined in annexes B.1 and B.2.~~

~~8.8.1 Performance requirement for CPCH preamble detection~~

~~8.8.1.1 Detection of CPCH Access Preamble (AP)~~

~~The requirement for detection of the AP for CPCH is the same as the requirement for detection of the RACH preamble which is described in section 8.7.1 of this specification.~~

~~8.8.1.2 Detection of CPCH Collision Detection Preamble (CD)~~

~~The requirement for detection of the CD for CPCH is the same as the requirement for detection of the RACH preamble which is described in section 8.7.1 of this specification.~~

~~8.8.2 Demodulation of CPCH message part~~

~~The performance measure is required Eb/N0 for block error rate (BLER) of 10^{-1} and 10^{-2}. Both measurement channels have TTI=20 ms. Payloads are 168 and 360 bits. Channel coding is rate ½ convolutional coding.~~

~~8.8.2.1 Minimum requirements for Static Propagation Condition~~

~~Table 8.13: Required Eb/N0 for static propagation~~

	~~TB size = 168 bits~~		~~TB size = 360 bits~~	
	~~BLER=10^{-1}~~	~~BLER=10^{-2}~~	~~BLER=10^{-1}~~	~~BLER=10^{-2}~~
~~Required Eb/N0~~	~~4.1 dB~~	~~5.0 dB~~	~~3.9 dB~~	~~4,8 dB~~

~~8.8.2.2 Minimum requirements for Multipath Fading Case 3~~

~~Table 8.14: Required Eb/N0 for case 3 fading~~

	~~TB size = 168 bits~~		~~TB size = 360 bits~~	
	~~BLER=10^{-1}~~	~~BLER=10^{-2}~~	~~BLER=10^{-1}~~	~~BLER=10^{-2}~~
~~Required Eb/N0~~	~~7.5 dB~~	~~8.5 dB~~	~~7.3 dB~~	~~8.1 dB~~

8.9 BS Functionality in Site Selection Diversity Transmission (SSDT) Mode

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050380**

Athens, Greece 9 - 13 May 2005

CR-Form-v7

CHANGE REQUEST

⌘ **25.104** **CR** **234** ⌘ **rev** ⌘ Current version: **6.8.0** ⌘

*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 ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Feature Clean Up: Removal of CPCH
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI6
Date:	⌘	16/05/2005
Category:	⌘	**C**
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:	⌘	In RAN#27 removal of some UTRAN features was agreed in order to simplify the specifications.
Summary of change:	⌘	CPCH is removed from the specification. **Isolated Impact Analysis** Functionality removed: CPCH Isolated impact statement: Since functionality is removed, UE implementations are not affected. Would affect UTRAN implementations supporting the removed functionality.
Consequences if not approved:	⌘	

Clauses affected:	⌘	8.8			
		Y	**N**		
Other specs	⌘	**X**		Other core specifications	⌘ 25.201, 25.211, 25.212, 25.213, 25.214, 25.215, 25.301, 25.302, 25.303, 25.306, 25.321, 25.331, 25.401, 25.420, 25.423, 25.424, 25.425, 25.430, 25.433, 25.434, 25.435, 25.922
affected:		**X**		Test specifications	25.141
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

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

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

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

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

8.8 ~~Performance requirement for CPCH~~Void

~~Performance requirement for CPCH consists of two parts: preamble detection and message demodulation. Requirements for these are in sections 8.8.1 and 8.8.2, respectively. Requirements are defined for two propagation conditions: static and fading case 3. The propagation conditions are defined in annexes B.1 and B.2.~~

~~8.8.1 Performance requirement for CPCH preamble detection~~

~~8.8.1.1 Detection of CPCH Access Preamble (AP)~~

~~The requirement for detection of the AP for CPCH is the same as the requirement for detection of the RACH preamble which is described in section 8.7.1 of this specification.~~

~~8.8.1.2 Detection of CPCH Collision Detection Preamble (CD)~~

~~The requirement for detection of the CD for CPCH is the same as the requirement for detection of the RACH preamble which is described in section 8.7.1 of this specification.~~

~~8.8.2 Demodulation of CPCH message part~~

~~The performance measure is required Eb/N0 for block error rate (BLER) of 10^{-1} and 10^{-2}. Both measurement channels have TTI=20 ms. Payloads are 168 and 360 bits. Channel coding is rate ½ convolutional coding.~~

~~8.8.2.1 Minimum requirements for Static Propagation Condition~~

~~Table 8.13: Required Eb/N0 for static propagation~~

~~Transport Block size TB and TTI in frames~~	~~168 bits, TTI = 20 ms~~		~~360 bits, TTI = 20 ms~~	
	~~E_b/N_0 for required BLER < 10^{-1}~~	~~E_b/N_0 for required BLER < 10^{-2}~~	~~E_b/N_0 for required BLER < 10^{-1}~~	~~E_b/N_0 for required BLER < 10^{-2}~~
~~BS with Rx Diversity~~	~~4.1 dB~~	~~5.0 dB~~	~~3.9 dB~~	~~4.8 dB~~
~~BS without Rx Diversity~~	~~7.1 dB~~	~~8.0 dB~~	~~6.9 dB~~	~~7.8 dB~~

~~8.8.2.2 Minimum requirements for Multipath Fading Case 3~~

~~Table 8.14: Required Eb/N0 for case 3 fading~~

~~Transport Block size TB and TTI in frames~~	~~168 bits, TTI = 20 ms~~		~~360 bits, TTI = 20 ms~~	
	~~E_b/N_0 for required BLER < 10^{-1}~~	~~E_b/N_0 for required BLER < 10^{-2}~~	~~E_b/N_0 for required BLER < 10^{-1}~~	~~E_b/N_0 for required BLER < 10^{-2}~~
~~BS with Rx Diversity~~	~~7.5 dB~~	~~8.5 dB~~	~~7.3 dB~~	~~8.1 dB~~
~~BS without Rx Diversity~~	~~10.8 dB~~	~~12.0 dB~~	~~10.7 dB~~	~~11.7 dB~~

8.10 Performance of ACK/NACK detection for HS-DPCCH

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050413**

Athens, Greece 9 - 13 May 2005

CR-Form-v7

CHANGE REQUEST

⌘ **25.133** **CR** **752** ⌘ **rev** ⌘ Current version: **5.14.0** ⌘

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

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

Title:	⌘	Feature Clean Up: Removal of CPCH
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI5
Date:	⌘	16/05/2005
Category:	⌘	**C**
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:	⌘	RAN#27 decision on Feature Clean-up
Summary of change:	⌘	CPCH requirements and test cases are removed. **Isolated Impact Analysis** Functionality removed: CPCH Isolated impact statement: Since functionality is removed, UE implementations are not affected. Would affect UTRAN implementations supporting the removed functionality.
Consequences if not approved:	⌘	Introduction of new features and evolution of the existing feature remain slow also in the future.

Clauses affected:	⌘	6.6 and A.6.5			
		Y	**N**		
Other specs	⌘	**X**		Other core specifications	⌘ 25.201, 25.211, 25.212, 25.213, 25.214, 25.215, 25.101, 25.423, 25.433, 25.104, 25.101
affected:		**X**		Test specifications	34.121
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

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

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

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

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

6.5 Maximum allowed UL TX Power

UTRAN may limit the power the UE is using on the uplink by setting the maximum allowed UL TX power IE defined in TS25.331.

For each measurement period, the UE shall with the use of the UE transmitted power measurement, estimate if it has reached the Maximum allowed UL TX Power or not. With tolerances as defined for the UE transmitted power measurement accuracy (section 9.1.6.1), the UE output power shall not exceed the Maximum allowed UL TX Power, as set by the UTRAN.

For UE output powers that are outside the range covered by the UE transmitted power measurement the UE output power shall not exceed the Maximum allowed UL TX Power with more than the tolerances specified for the Open loop power control in TS 25.101 section 6.4.1.

6.6 ~~CPCH Access~~Void

~~6.6.1 Introduction~~

~~The CPCH access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The CPCH access shall provide a fast access but without disturbing ongoing connections. The CPCH access is specified in section 6.2 of TS 25.214 and the control of the CPCH transmission is specified in section 11.3 of TS 25.321. A CPCH access transmit sequence is described in section 6.3.3 of TS 25.303. A CPCH emergency stop sequence is described in section 6.7.4 of TS 25.303.~~

~~6.6.2 Requirements~~

~~The UE shall have capability to calculate initial power according to the open loop algorithm and apply this power level at the first AP preamble and increase the power on additional AP preambles. The UE shall stop transmitting AP preambles upon receipt of an ACK/NACK on the AP-AICH or if the maximum number of preambles within one cycle has been reached. Upon receipt of an AP-AICH ACK, the UE shall transmit a CD preamble with a randomly chosen signature/slot subchannel. Upon receipt of a CD/CA-ICH with matching signature, the UE shall transmit a CPCH message. If the UE receives a AP-AICH NACK or if the UE does not receive a CD/CA-ICH with matching signature and with CA message when CA is active, the AP preamble ramping procedure shall be repeated.~~

~~6.6.2.1 Correct behaviour when receiving Status Indicator(SI) on CPCH Status Indicator Channel(CSICH)~~

~~The CSICH channel broadcasts the availability of PCPCH channels, and when CA is active the CSICH channel also broadcasts the minimum available spreading factor. Before beginning CPCH access, the UE shall test the value(s) of the most recent transmission of CSICH Status Indicator(s). If the result indicates that at least one PCPCH channel is available, the UE shall transmit an AP preamble. When Channel Assignment (CA) is not active, the UE shall transmit AP preambles with a signature and slot subchannel corresponding to an available PCPCH. When CA is active the UE shall transmit AP preambles with a signature and slot subchannel corresponding to a spreading factor equal to or greater that the minimum available spreading factor.~~

~~6.6.2.2 Correct behaviour when receiving an AP-AICH ACK~~

~~The UE shall stop transmitting preambles upon receipt of an ACK on the AP-AICH and then shall transmit a CD preamble with a randomly chosen signature/slot subchannel.~~

~~The absolute power applied to the first AP preamble shall have an accuracy as specified in table 6.3 of 25.101 [3]. The relative power applied to additional preambles shall have an accuracy as specified in section 6.5.2.1 of 25.101 [3].~~

~~6.6.2.3 Correct behaviour when receiving an AP-AICH NACK~~

~~The UE shall stop transmitting AP preambles upon receipt of a NACK on the AP-AICH and then shall repeat the ramping procedure when the backoff timer T_{B0C2} expires.~~

6.6.2.4 Correct behaviour when receiving a CD/CA-ICH ACK with matching signature when Channel Assignment (CA) is not active

A CD/CA-ICH ACK with matching signature may be transmitted by the UTRAN in the access slot after the CD preamble. Upon receipt of an ACK on the CD/CA-ICH in the access slot corresponding to the transmitted CD preamble and with the same signature used in the transmitted CD preamble, the UE shall transmit the CPCH message on the PCPCH indicated by the AP signature and slot subchannel used in the last AP transmission. During CPCH message transmission, the UE shall detect the Start of Message (SOM) Indicator on the DL DPCCH. If the SOM is not detected within N_start_message frames, the UE shall stop transmission. If the CPCH message transmission length is less than $NF_{max\ frames}$, the UE shall transmit the End of Transmission (EOT) indicator for N_EOT frames immediately after the end of the CPCH message.

6.6.2.5 Correct behaviour when receiving a CD/CA-ICH ACK with matching signature when Channel Assignment (CA) is active

When CA is active, the CD/CA-ICH will contain both an ACK signal and a CA mesage which may be transmitted by the UTRAN in the access slot after the CD preamble. Upon receipt of an ACK on the CD/CA-ICH in the access slot corresponding to the transmitted CD preamble and with the same signature used in the transmitted CD preamble, the UE shall transmit the CPCH message on the PCPCH indicated by the CA signal in the CD/CA-ICH. During CPCH message transmission, the UE shall detect the Start of Message (SOM) Indicator on the DL DPCCH. If the SOM is not detected within N_start_message frames, the UE shall stop transmission. If the CPCH message transmission length is less than $NF_{max\ frames}$, the UE shall transmit the End of Transmission (EOT) indicator for N_EOT frames immediately after the end of the CPCH message.

6.6.2.6 Correct behaviour when not receiving a CD/CA-ICH ACK with matching signature

When an ACK on the CD/CA-ICH is not received in the access slot corresponding to the transmitted CD preamble and with the same signature used in the transmitted CD preamble, the UE shall repeat the AP ramping procedure.

6.6.2.7 Correct behaviour when not receiving a CD/CA-ICH CA message when Channel Assignment (CA) is active

When a CA message in the CD/CA-ICH is not received in the access slot corresponding to the transmitted CD preamble, the UE shall repeat the AP ramping procedure.

6.6.2.8 Correct behaviour at Time-out

The UE shall stop transmitting AP preambles when reaching the maximum number of AP preambles allowed in a cycle. The UE shall then repeat the AP ramping procedure until the maximum number of preamble ramping cycles are reached.

6.6.2.9 Correct behaviour when reaching maximum transmit power

The UE shall not exceed the maximum allowed UL TX power configured by the UTRAN.

The absolute power of any preamble shall not exceed the maximum allowed UL TX power +/- [] dB (or +/- [] dB in extreme conditions).

6.6.2.10 Correct behaviour for Emergency Stop

During Transmission of the CPCH message part and upon receipt of an Emergency Stop indication from the BS, the UE shall stop transmitting within 20 msec of receipt of the last Emergency Stop Indication. An Emergency Stop indication may be transmitted by the UTRAN any time after the UTRAN has received the first TTI of the CPCH message.

7 Timing and Signalling characteristics

7.1 UE Transmit Timing

7.1.1 Introduction

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

********** NEXT MODIFIED SECTIONS**********

A.6.4.2 Test Requirements

A.6.4.2.1 Interactive or Background, PS, UL: 64 kbps

The UE shall have stopped using UL_TFC8 and UL_TFC9 within 140 ms from beginning of time period T2.

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

NOTE: The delay from the begining of T2 can be expressed as:

$$T_{ramp} + T_{detect\_block} + T_{notify} + T_{modify} + T_{L1\_proc} + T_{align\_TTI}$$

where:

T_{ramp}	Margin added for the increase of UE output power to the UE maximum power. A margin of 1 frame (10ms) is used, i.e. 15 TPC commands.
T_{detect_block}	The time needed to detect that UL_TFC8 and UL_TFC9 can no longer be supported, i.e. defines the maximum time to detect that the *Elimination* criterion is fulfilled for UL_TFC8 and UL_TFC9. According to X and Y values of 15 and 30 as defined in Section 6.4.2 and by assuming the maximum misalignment between the frame boundary, where the evaluation of the *Elimination* criterion is performed and the last slot needed for triggering the *Elimination* criterion on L1, T_{detect_block} becomes 15 slots +14 slots =19.33 ms.
T_{notify}	Equal to 15 ms, the time allowed for MAC to indicate to higher layers that UL_TFC8 and UL_TFC9 can no longer be supported.
T_{modify}	Equal to MAX(T_{adapt_max},T_{TTI}) = MAX(0, 40)=40ms
T_{adapt_max}	Equals to 0ms for the case without codec.
T_{L1_proc}	Equals 15ms.
T_{align_TTI}	Align with the longest uplink TTI where the new TFC can be selected. The worst case equals 40ms in this test case.
T_{TTI}	See section 6.4.2. Equals 40 ms in the test case.

This gives a maximum delay of (10 + 19.33 + 15 + 40 + 15 + 40) ms= 139.33 ms from the beginning of T2, allow 140 ms in the test case.

A.6.5 ~~CPCH Access~~Void

~~A.6.5.1 Test Purpose and Environment~~

~~The purpose of these tests are to verify that the behaviour of the CPCH access procedure is according to the requirements and that the CPCH power settings are within specified limits. This test will verify the requirements in section 6.6.~~

~~Table A.6.11: RF Parameters for CPCH Access test~~

~~Parameter~~	~~Unit~~	~~Cell 1~~
~~UTRA RF Channel Number~~		~~Channel 1~~
~~CPICH_Ec/Ior~~	~~dB~~	~~-10~~
~~PCCPCH_Ec/Ior~~	~~dB~~	~~-12~~
~~SCH_Ec/Ior~~	~~dB~~	~~-12~~
~~Number of other transmitted AP-AICH Indicators~~	~~-~~	~~0~~
~~Number of other transmitted CD/CA-ICH Indicators~~	~~-~~	~~0~~
~~AP-AICH_Ec/Ior~~	~~dB~~	~~-10~~
~~CD/CA-ICH_Ec/Ior~~	~~dB~~	~~-10~~
~~CSICH_Ec/Ior~~	~~dB~~	~~-10~~
~~PICH_Ec/Ior~~	~~dB~~	~~-15~~
~~OCNS_Ec/Ior when an AI is not transmitted~~	~~dB~~	~~-0.941~~
~~OCNS_Ec/Ior when an AI is transmitted~~	~~dB~~	~~-1.516~~
~~$\hat{I}_{or}/I_{oc}$~~	~~dB~~	~~0~~
~~I_{oc}~~	~~dBm/3.84 MHz~~	~~-70~~
~~CPICH_Ec/Io~~	~~dB~~	~~-13~~
~~Propagation Condition~~		~~AWGN~~

~~The test parameters System Information Blocks (SIBs) type 8 and 9 defined in section 7.1.13 of TS34.123, shall be used in all CPCH access tests. Crucial parameters for the test requirements are repeated in Table A.6.12 and A.6.13 and these overrule the parameters defined in SIBs type 8 and 9.~~

Table A.6.12: UE parameters for CPCH Access test

Parameter	Unit	Value
Access Service Class (ASC#0) - - CPCH Persistence value	 0..1	- 1
Number of PCPCHs		2, for CA not active case, minimum spreading factor = 128
Channel Assignment (CA)		Not active or active
Maximum number of preamble ramping cycles (N_access_fails).		2
Maximum number of preambles in one preamble ramping cycle (N_ap_retrans_max)		12
Number of frames for UE backoff after N ap_retrans_max unsuccessful AP access attempts or no matching CD/CA-ICH received (NF_bo_no aich)	radio frames	2
Number of slots for UE fixed backoff after access attempt to busy CPCH (NS_bo_busy)	Access slots	15
NF_max	64	frames
N_EOT	7	frames
Power step when no acquisition indicator is received (Power offset P0)	dB	3
Power offset between the last transmitted CD preamble and the control part of the message (DeltaPp-m)	dB	0
Maximum allowed UL TX power	dBm	0

Table A.6.13: UTRAN parameters for CPCH Access test

Parameter	Unit	Value
Primary CPICH DL TX power	dBm	-8
UL interference	dBm	-102
Target SIR for outer loop power control (Constant value)	dB	0
AP-AICH Power Offset	dB	0
CD/CA-ICH Power Offset	dB	0
CSICH Power Offset	dB	0
CSICH information	[cf. TS25.211]	For all cases: 1 PCPCH available, 1PCPCH unavailable. For CA active case: MASF = 04 (NOTE 1).
Channel Assignment (CA)		Not active or active

NOTE 1: MASF = 0 signals that the minimum available CPCH spreading factor is 04; this is signalled by setting MASF(0) = MASF(1) = MASF(2) = 1.

A.6.5.2 Test Requirements

A.6.5.2.1 Correct behaviour when receiving an AP-AICH ACK

The UE shall stop transmitting AP preambles when an ACK on the AP-AICH is received and then shall transmit a CD preamble with a randomly chosen signature/slot subchannel.

The UE shall transmit 10 AP preambles and 1 CD preamble. An AP-AICH ACK shall be transmitted by the UTRAN after the 10 AP preambles have been received by the UTRAN. When Channel Assignment (CA) is not active, the UE shall transmit AP preambles with a signature and slot subchannel corresponding to the available PCPCH. When CA is active the UE shall transmit AP preambles with a signature and slot subchannel corresponding to a spreading factor of 128.

The absolute power applied to the first AP preamble shall be [30 dBm] with an accuracy as specified in table 6.4.1.1 of 25.101 [3]. The relative power applied to additional AP preambles or CD preambles shall have an accuracy as specified in section 6.5.2.1 of 25.101 [3].

A.6.5.2.2 Correct behaviour when receiving an AP-AICH NACK

The UE shall stop transmitting AP preambles when a NACK on the AP-AICH is received and then shall repeat the ramping procedure.

The UE shall transmit 10 AP preambles in the first ramping cycle, shall cease transmission for 20 ms, and then shall start the second preamble ramping cycle. The AP-AICH NACK shall be transmitted by the UTRAN after the 10 preambles have been received by the UTRAN. When Channel Assignment (CA) is not active, the UE shall transmit AP preambles with a signature and slot subchannel corresponding to the available PCPCH. When CA is active the UE shall transmit AP preambles with a signature and slot subchannel corresponding to a spreading factor of 128.

A.6.5.2.3 Correct behaviour when receiving a CD/CA-ICH ACK with matching signature when CA is not active

When an ACK on the CD/CA-ICH is received in the access slot corresponding to the transmitted CD preamble and with the same signature used in the transmitted CD preamble, the UE shall transmit the CPCH message on the available PCPCH.

The UE shall transmit 10 AP preambles, 1 CD preamble and 1 CPCH message with EOT indication. An AP-AICH ACK shall be transmitted by the UTRAN after the 10 AP preambles have been received by the UTRAN, and then a CD/CA-ICH ACK with matching signature shall be transmitted by the UTRAN in the corresponding slot after the CD preamble. When Channel Assignment (CA) is not active, the UE shall transmit AP preambles with a signature and slot subchannel corresponding to the available PCPCH.

A.6.5.2.4 Correct behaviour when receiving a CD/CA-ICH ACK with matching signature when CA is active

When an ACK on the CD/CA-ICH is received in the access slot corresponding to the transmitted CD preamble and with the same signature used in the transmitted CD preamble, the UE shall transmit the CPCH message on the available PCPCH with a spreading factor of 128.

The UE shall transmit 10 AP preambles, 1 CD preamble and 1 CPCH message with EOT indication. An AP-AICH ACK shall be transmitted by the UTRAN after the 10 AP preambles have been received by the UTRAN, and then a CD/CA-ICH ACK (ACK with matching signature and CA signal indicating the available PCPCH) shall be transmitted by the UTRAN in the corresponding slot after the CD preamble. When Channel Assignment (CA) is active, the UE shall transmit AP preambles with a signature and slot subchannel corresponding to a spreading factor of 128.

A.6.5.2.5 Correct behaviour when not receiving a CD/CA-ICH ACK with matching signature

When an ACK on the CD/CA-ICH is not received in the access slot corresponding to the transmitted CD preamble and with the same signature used in the transmitted CD preamble, the UE shall repeat the ramping procedure.

~~The UE shall transmit 10 AP preambles and 1 CD preamble in the first ramping cycle, shall cease transmission for 20 ms, and then shall start the second preamble ramping cycle. An AP-AICH ACK shall be transmitted by the UTRAN after the 10 AP preambles have been received by the UTRAN. When Channel Assignment (CA) is not active, the UE shall transmit AP preambles with a signature and slot subchannel corresponding to the available PCPCH. When CA is active the UE shall transmit AP preambles with a signature and slot subchannel corresponding to a spreading factor of 128.~~

~~A.6.5.2.6 Correct behaviour when not receiving a CD/CA-ICH CA message when Channel Assignment (CA) is active~~

~~When a CA message in the CD/CA-ICH is not received in the access slot corresponding to the transmitted CD preamble, the UE shall repeat the ramping procedure.~~

~~The UE shall transmit 10 AP preambles and 1 CD preamble in the first ramping cycle, shall cease transmission for 20 ms, and then shall start the second preamble ramping cycle. An AP-AICH ACK shall be transmitted by the UTRAN after the 10 AP preambles have been received by the UTRAN. A CD/CA-ICH ACK without a CA message shall be transmitted by the UTRAN after the CD preamble. The UE shall transmit AP preambles with a signature and slot subchannel corresponding to a spreading factor of 128.~~

~~A.6.5.2.7 Correct behaviour at Time-out~~

~~The UE shall stop transmitting AP preambles when reaching the maximum number of preambles allowed in a cycle. The UE shall then repeat the ramping procedure until the maximum number of preamble ramping cycles are reached.~~

~~The UE shall transmit 2 AP preambles cycles, consisting of 12 AP preambles in each AP preamble cycle. The UTRAN shall not transmit during this test. When Channel Assignment (CA) is not active, the UE shall transmit AP preambles with a signature and slot subchannel corresponding to the available PCPCH. When CA is active the UE shall transmit AP preambles with a signature and slot subchannel corresponding to a spreading factor of 128.~~

~~A.6.5.2.8 Correct behaviour when reaching maximum transmit power~~

~~The UE shall not exceed the maximum allowed UL TX power configured by the UTRAN. The absolute power of the AP preambles belonging to the first or second preamble cycle shall not exceed 0 dBm +/- [] dB (or +/- [] dB in extreme conditions).~~

~~The UE shall transmit 2 AP preambles cycles, consisting of 12 AP preambles in each AP preamble cycle. The UTRAN shall not transmit during this test. When Channel Assignment (CA) is not active, the UE shall transmit AP preambles with a signature and slot subchannel corresponding to the available PCPCH. When CA is active the UE shall transmit AP preambles with a signature and slot subchannel corresponding to a spreading factor of 128.~~

~~A.6.5.2.9 Correct behaviour for Emergency Stop~~

~~During Transmission of the CPCH message part and upon receipt of an Emergency Stop indication from the UTRAN, the UE shall stop transmitting within 20 msec of receipt of the Emergency Stop Indication. An Emergency Stop indication shall be transmitted by the UTRAN after the UTRAN has received the first TTI of the CPCH message.~~

A.7 Timing and Signalling Characteristics

A.7.1 UE Transmit Timing

A.7.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE initial transmit timing accuracy, maximum amount of timing change in one adjustment, minimum and maximum adjustment rate are within the specified limits. This test will verify the requirements in section 7.1.2.

For this test two cells on the same frequency are used. Table A.7.1 defines the transmitted signal strengths, the relative timing and the propagation condition used for the two cells.

Table A.7.1: Test parameters for UE Transmit Timing requirement

Parameter	Unit	Level
DPCH_Ec/ Ior, Cell 1 and Cell 2	dB	-13.5
CPICH_Ec/ Ior, Cell 1 and Cell 2	dB	-10
PCCPH_Ec/ Ior, Cell 1 and Cell 2	dB	-12
SCH_Ec/ Ior, Cell 1 and Cell 2	dB	-12
PICH_Ec/ Ior, Cell 1 and Cell 2	dB	-15
OCNS_Ec/ Ior, Cell 1 and Cell 2	dB	-1.2
$\hat{I}_{or,}$ Cell 1	dBm/3.84 MHz	-96
$\hat{I}_{or,}$ Cell 2	dBm/3.84 MHz	-99
Information data rate	kbps	12.2
Relative delay of path received from cell 2 with respect to cell 1	μs	+/-2
Propagation condition	AWGN	

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050414**

Athens, Greece 9 - 13 May 2005

CR-Form-v7

CHANGE REQUEST

⌘ **25.133** **CR** **753** ⌘ **rev** ⌘ Current version: **6.9.0** ⌘

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

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

Title:	⌘	Feature Clean Up: Removal of CPCH
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI6
Date:	⌘	16/05/2005
Category:	⌘	**C**
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:	⌘	RAN#27 decision on Feature Clean-up
Summary of change:	⌘	CPCH requirements and test cases are removed
Consequences if not approved:	⌘	Introduction of new features and evolution of the existing feature remain slow also in the future. **Isolated Impact Analysis** Functionality removed: CPCH Isolated impact statement: Since functionality is removed, UE implementations are not affected. Would affect UTRAN implementations supporting the removed functionality.

Clauses affected:	⌘	6.6 and A.6.5			
		Y	**N**		
Other specs affected:	⌘	**X**		Other core specifications	25.201, 25.211, 25.212, 25.213, 25.214, 25.215, 25.101, 25.423, 25.433, 25.104, 25.101
		X		Test specifications	34.121
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

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

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

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

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

6.5 Maximum allowed UL TX Power

UTRAN may limit the power the UE is using on the uplink by setting the maximum allowed UL TX power IE defined in TS25.331.

For each measurement period, the UE shall with the use of the UE transmitted power measurement, estimate if it has reached the Maximum allowed UL TX Power or not. With tolerances as defined for the UE transmitted power measurement accuracy (section 9.1.6.1), the UE output power shall not exceed the Maximum allowed UL TX Power, as set by the UTRAN.

For UE output powers that are outside the range covered by the UE transmitted power measurement the UE output power shall not exceed the Maximum allowed UL TX Power with more than the tolerances specified for the Open loop power control in TS 25.101 section 6.4.1.

6.6 ~~CPCH Access~~Void

~~6.6.1 Introduction~~

~~The CPCH access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The CPCH access shall provide a fast access but without disturbing ongoing connections. The CPCH access is specified in section 6.2 of TS 25.214 and the control of the CPCH transmission is specified in section 11.3 of TS 25.321. A CPCH access transmit sequence is described in section 6.3.3 of TS 25.303. A CPCH emergency stop sequence is described in section 6.7.4 of TS 25.303.~~

~~6.6.2 Requirements~~

~~The UE shall have capability to calculate initial power according to the open loop algorithm and apply this power level at the first AP preamble and increase the power on additional AP preambles. The UE shall stop transmitting AP preambles upon receipt of an ACK/NACK on the AP-AICH or if the maximum number of preambles within one cycle has been reached. Upon receipt of an AP-AICH ACK, the UE shall transmit a CD preamble with a randomly chosen signature/slot subchannel. Upon receipt of a CD/CA-ICH with matching signature, the UE shall transmit a CPCH message. If the UE receives a AP-AICH NACK or if the UE does not receive a CD/CA-ICH with matching signature and with CA message when CA is active, the AP preamble ramping procedure shall be repeated.~~

~~6.6.2.1 Correct behaviour when receiving Status Indicator(SI) on CPCH Status Indicator Channel(CSICH)~~

~~The CSICH channel broadcasts the availability of PCPCH channels, and when CA is active the CSICH channel also broadcasts the minimum available spreading factor. Before beginning CPCH access, the UE shall test the value(s) of the most recent transmission of CSICH Status Indicator(s). If the result indicates that at least one PCPCH channel is available, the UE shall transmit an AP preamble. When Channel Assignment (CA) is not active, the UE shall transmit AP preambles with a signature and slot subchannel corresponding to an available PCPCH. When CA is active the UE shall transmit AP preambles with a signature and slot subchannel corresponding to a spreading factor equal to or greater that the minimum available spreading factor.~~

~~6.6.2.2 Correct behaviour when receiving an AP-AICH ACK~~

~~The UE shall stop transmitting preambles upon receipt of an ACK on the AP-AICH and then shall transmit a CD preamble with a randomly chosen signature/slot subchannel.~~

~~The absolute power applied to the first AP preamble shall have an accuracy as specified in table 6.3 of 25.101 [3]. The relative power applied to additional preambles shall have an accuracy as specified in section 6.5.2.1 of 25.101 [3].~~

~~6.6.2.3 Correct behaviour when receiving an AP-AICH NACK~~

~~The UE shall stop transmitting AP preambles upon receipt of a NACK on the AP-AICH and then shall repeat the ramping procedure when the backoff timer T_{B0C2} expires.~~

6.6.2.4 Correct behaviour when receiving a CD/CA-ICH ACK with matching signature when Channel Assignment (CA) is not active

A CD/CA-ICH ACK with matching signature may be transmitted by the UTRAN in the access slot after the CD preamble. Upon receipt of an ACK on the CD/CA-ICH in the access slot corresponding to the transmitted CD preamble and with the same signature used in the transmitted CD preamble, the UE shall transmit the CPCH message on the PCPCH indicated by the AP signature and slot subchannel used in the last AP transmission. During CPCH message transmission, the UE shall detect the Start of Message (SOM) Indicator on the DL DPCCH. If the SOM is not detected within N_start_message frames, the UE shall stop transmission. If the CPCH message transmission length is less than $NF_{max\ frames}$, the UE shall transmit the End of Transmission (EOT) indicator for N_EOT frames immediately after the end of the CPCH message.

6.6.2.5 Correct behaviour when receiving a CD/CA-ICH ACK with matching signature when Channel Assignment (CA) is active

When CA is active, the CD/CA-ICH will contain both an ACK signal and a CA mesage which may be transmitted by the UTRAN in the access slot after the CD preamble. Upon receipt of an ACK on the CD/CA-ICH in the access slot corresponding to the transmitted CD preamble and with the same signature used in the transmitted CD preamble, the UE shall transmit the CPCH message on the PCPCH indicated by the CA signal in the CD/CA-ICH. During CPCH message transmission, the UE shall detect the Start of Message (SOM) Indicator on the DL DPCCH. If the SOM is not detected within N_start_message frames, the UE shall stop transmission. If the CPCH message transmission length is less than $NF_{max\ frames}$, the UE shall transmit the End of Transmission (EOT) indicator for N_EOT frames immediately after the end of the CPCH message.

6.6.2.6 Correct behaviour when not receiving a CD/CA-ICH ACK with matching signature

When an ACK on the CD/CA-ICH is not received in the access slot corresponding to the transmitted CD preamble and with the same signature used in the transmitted CD preamble, the UE shall repeat the AP ramping procedure.

6.6.2.7 Correct behaviour when not receiving a CD/CA-ICH CA message when Channel Assignment (CA) is active

When a CA message in the CD/CA-ICH is not received in the access slot corresponding to the transmitted CD preamble, the UE shall repeat the AP ramping procedure.

6.6.2.8 Correct behaviour at Time-out

The UE shall stop transmitting AP preambles when reaching the maximum number of AP preambles allowed in a cycle. The UE shall then repeat the AP ramping procedure until the maximum number of preamble ramping cycles are reached.

6.6.2.9 Correct behaviour when reaching maximum transmit power

The UE shall not exceed the maximum allowed UL TX power configured by the UTRAN.

The absolute power of any preamble shall not exceed the maximum allowed UL TX power +/- [] dB (or +/- [] dB in extreme conditions).

6.6.2.10 Correct behaviour for Emergency Stop

During Transmission of the CPCH message part and upon receipt of an Emergency Stop indication from the BS, the UE shall stop transmitting within 20 msec of receipt of the last Emergency Stop Indication. An Emergency Stop indication may be transmitted by the UTRAN any time after the UTRAN has received the first TTI of the CPCH message.

7 Timing and Signalling characteristics

7.1 UE Transmit Timing

7.1.1 Introduction

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

**********NEXT MODIFIED SECTIONS**********

A.6.4.2 Test Requirements

A.6.4.2.1 Interactive or Background, PS, UL: 64 kbps

The UE shall have stopped using UL_TFC8 and UL_TFC9 within 140 ms from beginning of time period T2.

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

NOTE: The delay from the begining of T2 can be expressed as:

$$T_{ramp} + T_{detect\_block} + T_{notify} + T_{modify} + T_{L1\_proc} + T_{align\_TTI}$$

where:

T_{ramp}	Margin added for the increase of UE output power to the UE maximum power. A margin of 1 frame (10ms) is used, i.e. 15 TPC commands.
T_{detect_block}	The time needed to detect that UL_TFC8 and UL_TFC9 can no longer be supported, i.e. defines the maximum time to detect that the *Elimination* criterion is fulfilled for UL_TFC8 and UL_TFC9. According to X and Y values of 15 and 30 as defined in Section 6.4.2 and by assuming the maximum misalignment between the frame boundary, where the evaluation of the *Elimination* criterion is performed and the last slot needed for triggering the *Elimination* criterion on L1, T_{detect_block} becomes 15 slots +14 slots =19.33 ms.
T_{notify}	Equal to 15 ms, the time allowed for MAC to indicate to higher layers that UL_TFC8 and UL_TFC9 can no longer be supported.
T_{modify}	Equal to $MAX(T_{adapt\_max}, T_{TTI}) = MAX(0, 40)=40ms$
T_{adapt_max}	Equals to 0ms for the case without codec.
T_{L1_proc}	Equals 15ms.
T_{align_TTI}	Align with the longest uplink TTI where the new TFC can be selected. The worst case equals 40ms in this test case.
T_{TTI}	See section 6.4.2. Equals 40 ms in the test case.

This gives a maximum delay of (10 + 19.33 + 15 + 40 + 15 + 40) ms= 139.33 ms from the beginning of T2, allow 140 ms in the test case.

A.6.5 ~~CPCH Access~~Void

~~A.6.5.1 Test Purpose and Environment~~

~~The purpose of these tests are to verify that the behaviour of the CPCH access procedure is according to the requirements and that the CPCH power settings are within specified limits. This test will verify the requirements in section 6.6.~~

~~Table A.6.11: RF Parameters for CPCH Access test~~

~~Parameter~~	~~Unit~~	~~Cell 1~~
~~UTRA RF Channel Number~~		~~Channel 1~~
~~CPICH_Ec/Ior~~	~~dB~~	~~-10~~
~~PCCPCH_Ec/Ior~~	~~dB~~	~~-12~~
~~SCH_Ec/Ior~~	~~dB~~	~~-12~~
~~Number of other transmitted AP-AICH Indicators~~	~~-~~	~~0~~
~~Number of other transmitted CD/CA-ICH Indicators~~	~~-~~	~~0~~
~~AP-AICH_Ec/Ior~~	~~dB~~	~~-10~~
~~CD/CA-ICH_Ec/Ior~~	~~dB~~	~~-10~~
~~CSICH_Ec/Ior~~	~~dB~~	~~-10~~
~~PICH_Ec/Ior~~	~~dB~~	~~-15~~
~~OCNS_Ec/Ior when an AI is not transmitted~~	~~dB~~	~~-0.941~~
~~OCNS_Ec/Ior when an AI is transmitted~~	~~dB~~	~~-1.516~~
~~$\hat{I}_{or}/I_{oc}$~~	~~dB~~	~~0~~
~~I_{oc}~~	~~dBm/3.84 MHz~~	~~-70~~
~~CPICH_Ec/Io~~	~~dB~~	~~-13~~
~~Propagation Condition~~		~~AWGN~~

~~The test parameters System Information Blocks (SIBs) type 8 and 9 defined in section 7.1.13 of TS34.123, shall be used in all CPCH access tests. Crucial parameters for the test requirements are repeated in Table A.6.12 and A.6.13 and these overrule the parameters defined in SIBs type 8 and 9.~~

Table A.6.12: UE parameters for CPCH Access test

Parameter	Unit	Value
Access Service Class (ASC#0) - - CPCH Persistence value	 0..1	- 1
Number of PCPCHs		2, for CA not active case, minimum spreading factor = 128
Channel Assignment (CA)		Not active or active
Maximum number of preamble ramping cycles (N_access_fails).		2
Maximum number of preambles in one preamble ramping cycle (N_ap_retrans_max)		12
Number of frames for UE backoff after N ap_retrans_max unsuccessful AP access attempts or no matching CD/CA-ICH received (NF_bo_no aich)	radio frames	2
Number of slots for UE fixed backoff after access attempt to busy CPCH (NS_bo_busy)	Access slots	15
NF_max	64	frames
N_EOT	7	frames
Power step when no acquisition indicator is received (Power offset P0)	dB	3
Power offset between the last transmitted CD preamble and the control part of the message (DeltaPp-m)	dB	0
Maximum allowed UL TX power	dBm	0

Table A.6.13: UTRAN parameters for CPCH Access test

Parameter	Unit	Value
Primary CPICH DL TX power	dBm	-8
UL interference	dBm	-102
Target SIR for outer loop power control (Constant value)	dB	0
AP-AICH Power Offset	dB	0
CD/CA-ICH Power Offset	dB	0
CSICH Power Offset	dB	0
CSICH information	[cf. TS25.211]	For all cases: 1 PCPCH available, 1PCPCH unavailable. For CA active case: MASF = 04 (NOTE 1).
Channel Assignment (CA)		Not active or active

NOTE 1: MASF = 0 signals that the minimum available CPCH spreading factor is 04; this is signalled by setting MASF(0) = MASF(1) = MASF(2) = 1.

A.6.5.2 Test Requirements

A.6.5.2.1 Correct behaviour when receiving an AP-AICH ACK

The UE shall stop transmitting AP preambles when an ACK on the AP-AICH is received and then shall transmit a CD preamble with a randomly chosen signature/slot subchannel.

The UE shall transmit 10 AP preambles and 1 CD preamble. An AP-AICH ACK shall be transmitted by the UTRAN after the 10 AP preambles have been received by the UTRAN. When Channel Assignment (CA) is not active, the UE shall transmit AP preambles with a signature and slot subchannel corresponding to the available PCPCH. When CA is active the UE shall transmit AP preambles with a signature and slot subchannel corresponding to a spreading factor of 128.

The absolute power applied to the first AP preamble shall be [30 dBm] with an accuracy as specified in table 6.4.1.1 of 25.101 [3]. The relative power applied to additional AP preambles or CD preambles shall have an accuracy as specified in section 6.5.2.1 of 25.101 [3].

A.6.5.2.2 Correct behaviour when receiving an AP-AICH NACK

The UE shall stop transmitting AP preambles when a NACK on the AP-AICH is received and then shall repeat the ramping procedure.

The UE shall transmit 10 AP preambles in the first ramping cycle, shall cease transmission for 20 ms, and then shall start the second preamble ramping cycle. The AP-AICH NACK shall be transmitted by the UTRAN after the 10 preambles have been received by the UTRAN. When Channel Assignment (CA) is not active, the UE shall transmit AP preambles with a signature and slot subchannel corresponding to the available PCPCH. When CA is active the UE shall transmit AP preambles with a signature and slot subchannel corresponding to a spreading factor of 128.

A.6.5.2.3 Correct behaviour when receiving a CD/CA-ICH ACK with matching signature when CA is not active

When an ACK on the CD/CA-ICH is received in the access slot corresponding to the transmitted CD preamble and with the same signature used in the transmitted CD preamble, the UE shall transmit the CPCH message on the available PCPCH.

The UE shall transmit 10 AP preambles, 1 CD preamble and 1 CPCH message with EOT indication. An AP-AICH ACK shall be transmitted by the UTRAN after the 10 AP preambles have been received by the UTRAN, and then a CD/CA-ICH ACK with matching signature shall be transmitted by the UTRAN in the corresponding slot after the CD preamble. When Channel Assignment (CA) is not active, the UE shall transmit AP preambles with a signature and slot subchannel corresponding to the available PCPCH.

A.6.5.2.4 Correct behaviour when receiving a CD/CA-ICH ACK with matching signature when CA is active

When an ACK on the CD/CA-ICH is received in the access slot corresponding to the transmitted CD preamble and with the same signature used in the transmitted CD preamble, the UE shall transmit the CPCH message on the available PCPCH with a spreading factor of 128.

The UE shall transmit 10 AP preambles, 1 CD preamble and 1 CPCH message with EOT indication. An AP-AICH ACK shall be transmitted by the UTRAN after the 10 AP preambles have been received by the UTRAN, and then a CD/CA-ICH ACK (ACK with matching signature and CA signal indicating the available PCPCH) shall be transmitted by the UTRAN in the corresponding slot after the CD preamble. When Channel Assignment (CA) is active, the UE shall transmit AP preambles with a signature and slot subchannel corresponding to a spreading factor of 128.

A.6.5.2.5 Correct behaviour when not receiving a CD/CA-ICH ACK with matching signature

When an ACK on the CD/CA-ICH is not received in the access slot corresponding to the transmitted CD preamble and with the same signature used in the transmitted CD preamble, the UE shall repeat the ramping procedure.

~~The UE shall transmit 10 AP preambles and 1 CD preamble in the first ramping cycle, shall cease transmission for 20 ms, and then shall start the second preamble ramping cycle. An AP-AICH ACK shall be transmitted by the UTRAN after the 10 AP preambles have been received by the UTRAN. When Channel Assignment (CA) is not active, the UE shall transmit AP preambles with a signature and slot subchannel corresponding to the available PCPCH. When CA is active the UE shall transmit AP preambles with a signature and slot subchannel corresponding to a spreading factor of 128.~~

~~A.6.5.2.6 Correct behaviour when not receiving a CD/CA-ICH CA message when Channel Assignment (CA) is active~~

~~When a CA message in the CD/CA-ICH is not received in the access slot corresponding to the transmitted CD preamble, the UE shall repeat the ramping procedure.~~

~~The UE shall transmit 10 AP preambles and 1 CD preamble in the first ramping cycle, shall cease transmission for 20 ms, and then shall start the second preamble ramping cycle. An AP-AICH ACK shall be transmitted by the UTRAN after the 10 AP preambles have been received by the UTRAN. A CD/CA-ICH ACK without a CA message shall be transmitted by the UTRAN after the CD preamble. The UE shall transmit AP preambles with a signature and slot subchannel corresponding to a spreading factor of 128.~~

~~A.6.5.2.7 Correct behaviour at Time-out~~

~~The UE shall stop transmitting AP preambles when reaching the maximum number of preambles allowed in a cycle. The UE shall then repeat the ramping procedure until the maximum number of preamble ramping cycles are reached.~~

~~The UE shall transmit 2 AP preambles cycles, consisting of 12 AP preambles in each AP preamble cycle. The UTRAN shall not transmit during this test. When Channel Assignment (CA) is not active, the UE shall transmit AP preambles with a signature and slot subchannel corresponding to the available PCPCH. When CA is active the UE shall transmit AP preambles with a signature and slot subchannel corresponding to a spreading factor of 128.~~

~~A.6.5.2.8 Correct behaviour when reaching maximum transmit power~~

~~The UE shall not exceed the maximum allowed UL TX power configured by the UTRAN. The absolute power of the AP preambles belonging to the first or second preamble cycle shall not exceed 0 dBm +/- [] dB (or +/- [] dB in extreme conditions).~~

~~The UE shall transmit 2 AP preambles cycles, consisting of 12 AP preambles in each AP preamble cycle. The UTRAN shall not transmit during this test. When Channel Assignment (CA) is not active, the UE shall transmit AP preambles with a signature and slot subchannel corresponding to the available PCPCH. When CA is active the UE shall transmit AP preambles with a signature and slot subchannel corresponding to a spreading factor of 128.~~

~~A.6.5.2.9 Correct behaviour for Emergency Stop~~

~~During Transmission of the CPCH message part and upon receipt of an Emergency Stop indication from the UTRAN, the UE shall stop transmitting within 20 msec of receipt of the Emergency Stop Indication. An Emergency Stop indication shall be transmitted by the UTRAN after the UTRAN has received the first TTI of the CPCH message.~~

A.7 Timing and Signalling Characteristics

A.7.1 UE Transmit Timing

A.7.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE initial transmit timing accuracy, maximum amount of timing change in one adjustment, minimum and maximum adjustment rate are within the specified limits. This test will verify the requirements in section 7.1.2.

For this test two cells on the same frequency are used. Table A.7.1 defines the transmitted signal strengths, the relative timing and the propagation condition used for the two cells.

Table A.7.1: Test parameters for UE Transmit Timing requirement

Parameter	Unit	Level
DPCH_Ec/ Ior, Cell 1 and Cell 2	dB	-13.5
CPICH_Ec/ Ior, Cell 1 and Cell 2	dB	-10
PCCPH_Ec/ Ior, Cell 1 and Cell 2	dB	-12
SCH_Ec/ Ior, Cell 1 and Cell 2	dB	-12
PICH_Ec/ Ior, Cell 1 and Cell 2	dB	-15
OCNS_Ec/ Ior, Cell 1 and Cell 2	dB	-1.2
$\hat{I}_{or,}$ Cell 1	dBm/3.84 MHz	-96
$\hat{I}_{or,}$ Cell 2	dBm/3.84 MHz	-99
Information data rate	kbps	12.2
Relative delay of path received from cell 2 with respect to cell 1	μs	+/-2
Propagation condition	AWGN	

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050381**

Athens, Greece 9 - 13 May 2005

CR-Form-v7

CHANGE REQUEST

⌘ **25.141** **CR** **366** ⌘ **rev** ⌘ Current version: **5.9.0** ⌘

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

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

Title:	⌘	Feature Clean Up: Removal of CPCH
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI5
Date:	⌘	16/05/2005
Category:	⌘	**C**
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:	⌘	In RAN#27 removal of some UTRAN features was agreed in order to simplify the specifications.
Summary of change:	⌘	CPCH is removed from the specification. **Isolated Impact Analysis** Functionality removed: CPCH Isolated impact statement: Since functionality is removed, UE implementations are not affected. Would affect UTRAN implementations supporting the removed functionality.
Consequences if not approved:	⌘	

Clauses affected:	⌘	4.1.4; 4.2.3; 8.9; A.8; B.3.1; B.3.2; C.1.6; C.1.8; Annex F				
		Y	**N**			
Other specs	⌘	**X**		Other core specifications	⌘	25.201, 25.211, 25.212, 25.213, 25.214, 25.215, 25.301, 25.302, 25.303, 25.306, 25.321, 25.331, 25.401, 25.420, 25.423, 25.424, 25.425, 25.430, 25.433, 25.434, 25.435, 25.922
affected:			**X**	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

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

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

4.1.4 Measurement of performance requirement

Table 4.1B: Maximum Test System Uncertainty for Performance Requirements

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

--- next changed section ---

4.2.3 Performance requirement

Table 4.1E: Test Tolerances for Performance Requirements.

Subclause	Test Tolerance[1]
8.2, Demodulation in static propagation condtion	0.4dB
8.3, Demodulation of DCH in multiplath fading conditons	0.6dB
8.4 Demodulation of DCH in moving propagation conditions	0.6dB
8.5 Demodulation of DCH in birth/death propagation conditions	0.6dB
8.8.1 RACH preamble detection in static propagation conditions	0.4dB
8.8.2 RACH preamble detection in multipath fading case 3	0.6dB
8.8.3 Demodulation of RACH message in static propagation conditions	0.4dB
8.8.4 Demodulation of RACH message in multipath fading case 3	0.6dB
~~8.9.3 Demodulation of CPCH message in static propagation conditions~~	~~0.4dB~~
~~8.9.4 Demodulation of CPCH message in multipath fading case 3~~	~~0.6dB~~
8.10 Site Selection Diversity Transmission (SSDT) Mode	0.4dB
Note 1: Unless otherwise stated, the Test Tolerances are applied to the stimulus signal(s). See Annex F.	

--- next changed section ---

8.9 ~~CPCH Performance~~Void

~~8.9.1 CPCH access preamble and collision detection preamble detection in static propagation conditions~~

~~8.9.1.1 Definition and applicability~~

~~The CPCH access preamble and collision detection preamble are identical to the RACH preamble. The performance requirement of CPCH for access preamble (AP) and collision detection preamble (CD) detection in static propagation conditions is the same as that defined for RACH preamble and is determined by the two parameters probability of false detection of the preamble (Pfa) and the probability of detection of preamble (Pd).~~

~~The requirement in this subclause shall apply to base stations intended for general purpose applications.~~

~~8.9.1.2 Conformance and test requirement~~

~~The conformance and test requirement for CPCH for access preamble (AP) and collision detection preamble (CD) detection in static propagation conditions is the same as that defined for RACH preamble in section 8.8.1 of this specification. No additional conformance test is needed.~~

~~8.9.2 CPCH access preamble and collision detection preamble detection in multipath fading case 3~~

~~8.9.2.1 Definition and applicability~~

~~The CPCH access preamble and collision detection preamble are identical to the RACH preamble. The performance requirement of CPCH for access preamble (AP) and collision detection preamble (CD) detection in multipath fading case 3 conditions is the same as that defined for RACH preamble and is determined by the two parameters probability of false detection of the preamble (Pfa) and the probability of detection of preamble (Pd).~~

~~The requirement in this subclause shall apply to base stations intended for general purpose applications.~~

8.9.2.2 Conformance and test requirement

The conformance and test requirement for CPCH for access preamble (AP) and collision detection preamble (CD) detection in multipath fading case 3 conditions is the same as that defined for RACH preamble in section 8.8.2 of this specification. No additional conformance test is needed.

8.9.3 Demodulation of CPCH message in static propagation conditions

8.9.3.1 Definition and applicability

The performance requirement of CPCH in static propagation conditions is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified E_b/N_0 limit. The BLER is calculated for each of the measurement channels supported by the base station.

The power on the access preamble and collision detection preamble is set to meet or exceed the requirements on Pfa and Pd in subclauses 8.9.1 and 8.9.2. Only one signature is used and it is known by the receiver.

The requirement in this subclause shall apply to base stations intended for general purpose applications.

8.9.3.2 Minimum requirement

The BLER shall not exceed the limit for the E_b/N_0 specified in table 8.24.

Table 8.24: Performance requirements in AWGN channel

Transport Block size TB and TTI in frames	E_b/N_0 for required BLER < 10^{-1}	E_b/N_0 for required BLER < 10^{-2}
168 bits, TTI = 20 ms	4.1 dB	5.0 dB
360 bits, TTI = 20 ms	3.9 dB	4.8 dB

The reference for this requirement is TS 25.104 subclause 8.8.2.

8.9.3.3 Test purpose

The test shall verify the receiver's ability to receive the test signal under static propagation conditions with a BLER not exceeding a specified limit.

8.9.3.4 Method of test

Annex B functional setups for DCH shall also be used for CPCH tests.

8.9.3.4.1 Initial conditions

Test environment: normal; see subclause 4.4.1.

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

Preamble threshold factor: chosen to fulfil the requirements on Pfa and Pd in subclauses 8.9.1 and 8.9.2

1) Connect the BS tester generating the wanted signal and AWGN generators to both BS antenna connectors for diversity reception via a combining network as shown in annex B for DCH.

8.9.3.4.2 Procedure

1) Adjust the AWGN generator to -84 dBm/3.84 MHz at the BS input.

2) The characteristics of the wanted signal shall be configured according to the corresponding UL CPCH reference measurement channel defined in annex A.

3) Adjust the equipment so that required E_b/N_0 specified in table 8.25 is achieved. To achieve the specified E_b/N_0, the ratio of the wanted signal level (of the message part) relative to the AWGN signal at the BS input should be adjusted to:

$10*Log10(TB/(TTI*3.84*10^6))+E_b/N_0$ [dBm].

4) The test signal generator sends an access preamble followed by a collision detection preamble then followed by the actual CPCH message. This pattern is repeated (see figure 8.6). The receiver tries to detect the AP and CD preambles and the CPCH message. The block error rate is calculated for the messages that have been decoded. Messages following undetected preambles shall not be taken into account in the BLER measurement.

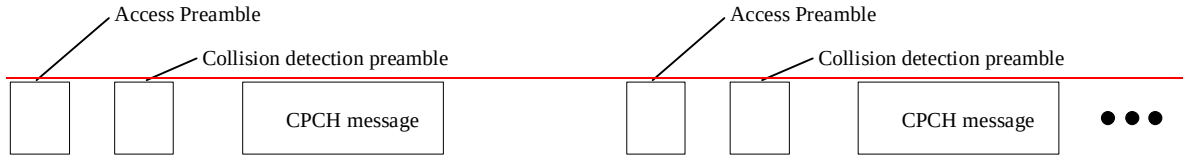

Figure 8.6: CPCH test signal pattern

8.9.3.5 Test requirements

The BLER measured according the subclause 8.9.3.4.2 shall not exceed the limits specified in table 8.25.

Table 8.25: Test requirements in AWGN channel

Transport Block size TB and TTI in frames	E_b/N_0 for required BLER < 10^{-1}	E_b/N_0 for required BLER < 10^{-2}
168 bits, TTI = 20 ms	4.5 dB	5.4 dB
360 bits, TTI = 20 ms	4.3 dB	5.2 dB

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

8.9.4 Demodulation of CPCH message in multipath fading case 3

8.9.4.1 Definition and applicability

The performance requirement of CPCH in multipath fading case 3 is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified E_b/N_0 limit. The BLER is calculated for each of the measurement channels supported by the base station.

The power on the access preamble and collision detection preamble is set to meet or exceed the requirements on Pfa and Pd in subclauses 8.9.1 and 8.9.2. Only one signature is used and it is known by the receiver.

The requirement in this subclause shall apply to base stations intended for general purpose applications.

8.9.4.2 Minimum requirement

The BLER shall not exceed the limit for the E_b/N_0 specified in table 8.26.

Table 8.26: Performance requirements in fading case 3 channel

Transport Block size TB and TTI in frames	E_b/N_0 for required BLER < 10^{-1}	E_b/N_0 for required BLER < 10^{-2}
168 bits, TTI = 20 ms	7.5 dB	8.5 dB
360 bits, TTI = 20 ms	7.3 dB	8.1 dB

The reference for this requirement is TS 25.104 subclause 8.8.2.

8.9.4.3 Test purpose

The test shall verify the receiver's ability to receive the test signal under multipath fading case 3 propagation conditions with a BLER not exceeding a specified limit.

8.9.4.4 Method of test

Annex B functional setups for DCH shall also be used for CPCH tests.

8.9.4.4.1 Initial conditions

Test environment: normal; see subclause 4.4.1.

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

Preamble threshold factor: chosen to fulfil the requirements on Pfa and Pd in subclauses 8.9.1 and 8.9.2

1) Connect the BS tester generating the wanted signal and AWGN generators to both BS antenna connectors for diversity reception via a combining network as shown in annex B for DCH.

8.9.4.4.2 Procedure

1) Adjust the AWGN generator to -84 dBm/3.84 MHz at the BS input.

2) The characteristics of the wanted signal shall be configured according to the corresponding UL CPCH reference measurement channel defined in annex A.

3) Adjust the equipment so that required E_b/N_0 specified in table 8.27 is achieved. To achieve the specified E_b/N_0, the ratio of the wanted signal level (of the message part) relative to the AWGN signal at the BS input should be adjusted to:

$10*Log10(TB/(TTI*3.84*10^6))+E_b/N_0$ [dBm].

4) The test signal generator sends an access preamble followed by a collision detection preamble then followed by the actual CPCH message. This pattern is repeated (see figure 8.7). The receiver tries to detect the preamble and the message. The block error rate is calculated for the messages that have been decoded. Messages following undetected preambles shall not be taken into account in the BLER measurement.

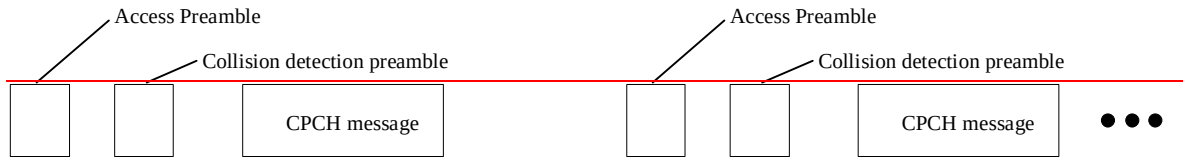

Figure 8.7: CPCH test signal pattern

8.9.4.5 Test requirements

The BLER measured according to subclause 8.9.4.4.2 shall not exceed the limits specified in table 8.27

Table 8.27: Test requirements in fading case 3 channel

Transport Block size TB and TTI in frames	E_b/N_0 for required BLER < 10^{-1}	E_b/N_0 for required BLER < 10^{-2}
168 bits, TTI = 20 ms	8.1 dB	9.1 dB
360 bits, TTI = 20 ms	7.9 dB	8.7 dB

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

--- next changed section ---

A.8 ~~Reference measurement channels for UL CPCH~~Void

~~The parameters for the UL CPCH reference measurement channels are specified in Table A.8.~~

~~Table A.8: Reference measurement channels for UL CPCH~~

~~Parameter~~			~~Unit~~
~~CPCH~~	~~CRC~~	~~16~~	~~bits~~
	~~Channel Coding~~	~~Rate ½ conv. coding~~	
	~~TTI~~	~~20~~	~~ms~~
	~~TB size~~	~~168, 360~~	~~bits~~
	~~Rate Matching~~	~~Repetition~~	
	~~Number of diversity antennas~~	~~2~~	
	~~Preamble detection window size~~	~~256~~	~~chips~~
	~~Power control preamble length~~	~~0~~	~~slots~~
~~Power ratio of CPCH Control/Data TB = 168~~		~~-2.69~~	~~dB~~
~~Power ratio of CPCH Control/Data TB = 360~~		~~-3.52~~	~~dB~~

--- next changed section ---

B.3 Performance requirement

B.3.1 Demodulation of DCH~~,~~ and RACH ~~and CPCH~~ in static conditions

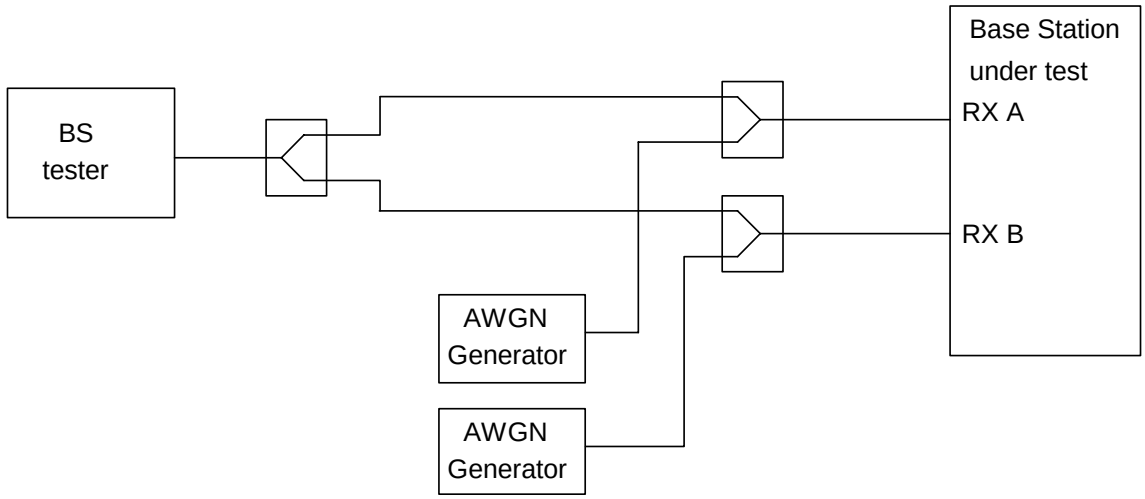

Figure B.13: Functional Set-up for Demodulation of DCH~~,~~ and RACH ~~and CPCH~~ in static conditions

B.3.2 Demodulation of DCH~~,~~ and RACH ~~and CPCH~~ in multipath fading conditions

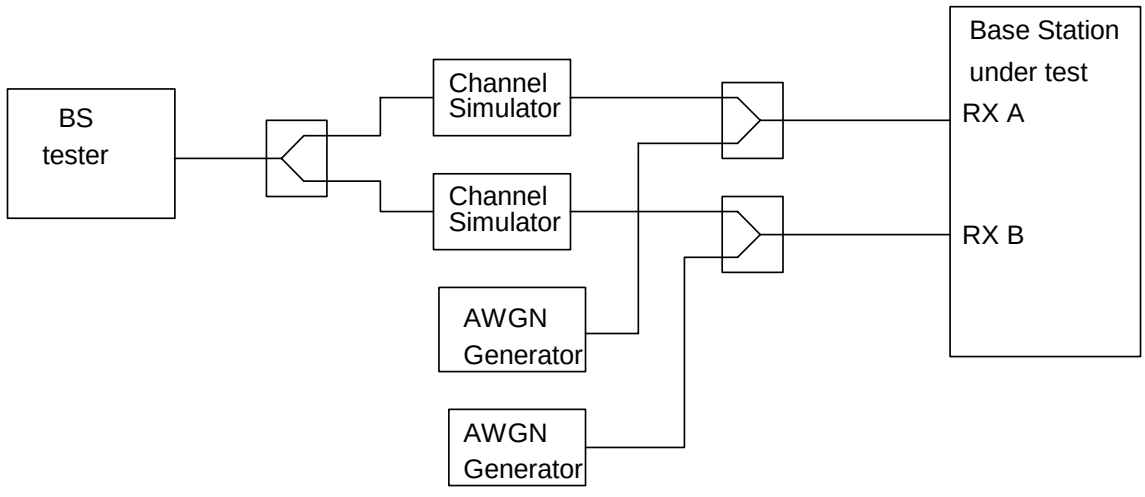

Figure B.14: Functional Set-up for Demodulation of DCH~~,~~ and RACH ~~and CPCH~~ in multipath fading conditions

--- next changed section ---

C.1.6 Good balance between test time and statistical significance

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

Table C.1: independent and dependent test parameters

Independent test parameters			Dependent test parameters		
Test Parameter	**Value**	**Reference**	**Test parameter**	**Value**	**Reference**
Bad DUT factor M	1.5	Tables C.3 to C.~~7~~6	Early pass/fail condition	Curves	Subclause C.1.5 Figure C.1.9
Final probability of wrong pass/fail decision F	0.2%, (0.02%, note 2)	Subclause C.1.5	Target number of error events	345	Tables C.3 to C.~~7~~6
			Probability of wrong pass/fail decision per test step D	0.0085%, (0.0008% and 0.008%, note 2)	
			Test limit factor TL	1.234	Tables C.3 to C.~~7~~6
Minimum test time		Table C.2			

The minimum test time is derived from the following justification:

1) For no propagation conditions and static propagation condition

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

2) For multipath fading condition

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

3) For birth death propagation conditions

   No stop of the test until 200 birth death transitions occur

4) For moving propagation conditions: 628 sec

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

Table C.2: minimum Test time

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

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

--- next changed section ---

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

Table C.3: Test conditions for BER tests

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

Table C.4: Test conditions for BLER tests

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

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

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

Table C.6: Test conditions for BLER tests

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

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

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

Table C.8: ~~Test conditions for BLER tests~~Void

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

--- next changed section ---

Annex F (informative): Derivation of Test Requirements

The Test Requirements in this specification have been calculated by relaxing the Minimum Requirements of the core specification using the Test Tolerances defined in subclause 4.2. When the Test Tolerance is zero, the Test Requirement will be the same as the Minimum Requirement. When the Test Tolerance is non-zero, the Test Requirements will differ from the Minimum Requirements, and the formula used for this relaxation is given in tables F.1, F.2 and F.3

Note that a formula for applying Test Tolerances is provided for all tests, even those with a test tolerance of zero. This is necessary in the case that the Test System uncertainty is greater than that allowed in subclause 4.1. In this event, the excess error shall be subtracted from the defined test tolerance in order to generate the correct tightened Test Requirements as defined in subclause 4.3.

For example, a Test System having 0.9 dB accuracy for test 6.2.1 Base Station maximum output power (which is 0.2 dB above the limit specified in subclause 4.) would subtract 0.2 dB from the Test Tolerance of 0.7 dB defined in subclause 4.2. This new test tolerance of 0.5 dB would then be applied to the Minimum Requirement using the formula defined in Table F.1 to give a new range of ±2.5 dB of the manufacturer's rated output power.

Using this same approach for the case where a test had a test tolerance of 0 dB, an excess error of 0.2 dB would result in a modified test tolerance of –0.2 dB.

Table F.1: Derivation of Test Requirements (Transmitter tests)

Test	Minimum Requirement in TS 25.104	Test Tolerance (TT)	Test Requirement in TS 25.141
6.2.1 Base station maximum output power	In normal conditions … within +2 dB and -2 dB of the manufacturer's rated output power In extreme conditions… within +2.5 dB and –2.5 dB of the manufacturer's rated output power	0.7 dB	Formula: Upper limit + TT Lower limit – TT In normal conditions … within +2.7 dB and –2.7 dB of the manufacturer's rated output power In extreme conditions… within +3.2 dB and –3.2 dB of the manufacturer's rated output power
6.2.2 CPICH Power accuracy	CPICH power shall be within ±2.1dB	0.8 dB	Formula: Upper limit + TT Lower limit – TT CPICH power shall be within ±2.9dB
6.3 Frequency error	Frequency error limit = 0.05 ppm	12 Hz	Formula: Frequency Error limit + TT Frequency Error limit = 0.05 ppm + 12 Hz
6.4.2 Power control steps	Lower and upper limits as specified in tables 6.9 and 6.10a	0.1 dB	Formula: Upper limits + TT Lower limits – TT 0.1 dB applied as above to tables 6.9 and 6.10a
6.4.3 Power control dynamic range	maximum power limit = BS maximum output power -3 dB minimum power limit = BS maximum output power –28 dB	1.1 dB	Formula: maximum power limit – TT minimum power limit + TT maximum power limit = BS maximum output power –4.1 dB minimum power limit = BS maximum output power –26.9 dB
6.4.4 Total power dynamic range	total power dynamic range limit = 18 dB	0.3 dB	Formula: total power dynamic range limit – TT total power dynamic range limit = 17.7 dB
6.4.5. IPDL time mask	maximum power limit = BS maximum output power –35 dB	0.7 dB	Formula: maximum power limit + TT maximum power limit = BS maximum output power – 34.3 dB
6.5.1 Occupied Bandwidth	occupied bandwidth limit = 5 MHz	0 kHz	Formula: Occupied bandwidth limit + TT Occupied bandwidth limit = 5 MHz
6.5.2.1 Spectrum emission mask	Maximum level defined in tables 6.11, 6.12, 6.13 and 6.14:	1.5 dB(0 dB for the additional Band II requirements)	Formula: Maximum level + TT Add 1.5 to Maximum level entries in tables 6.11, 6.12, 6.13 and 6.14.
6.5.2.2 Adjacent Channel Leakage power Ratio (ACLR)	ACLR limit = 45 dB at 5 MHz ACLR limit = 50 dB at 10 MHz	0.8 dB	Formula: ACLR limit – TT ACLR limit = 44.2 dB at 5 MHz ACLR limit = 49.2 dB at 10 MHz
6.5.3 Spurious emissions	Maximum level defined in tables 6.16 to 6.26	0 dB	Formula: Maximum limit + TT Add 0 to Maximum level in tables 6.16 to 6.26
6.6 Transmit intermodulation (interferer requirements) This tolerance applies to the stimulus and not the measurements defined in 6.5.2.1, 6.5.2.2 and 6.5.3.	Wanted signal level – interferer level = 30 dB	0 dB	Formula: Ratio + TT Wanted signal level – interferer level = 30 + 0 dB
6.7.1 EVM	EVM limit =17.5 % for a composite signal modulated only by QPSK EVM limit = 12.5 % for a composite signal modulated by QPSK and 16QAM	0 %	Formula: EVM limit + TT EVM limit = 17.5% for a composite signal modulated only by QPSK EVM limit = 12.5 % for a composite signal modulated by QPSK and 16QAM

6.7.2 Peak code Domain error	Peak code domain error limit = -33 dB	1.0 dB	Formula: Peak code domain error limit + TT Peak code domain error limit = -32 dB
6.7.3 Time alignment error in TX diversity	Max time alignment error = 0.25 T_c Min time alignment error = -0.25 T_c	0.1 T_c	Formula: Max time alignment error + TT Min time alignment error – TT Max time alignment error = 0.35 T_c Min time alignment error = -0.35 T_c
Annex H.3 Transmitted code power (absolute)	Absolute accuracy limit = Pout,code – 3 dB Pout,code + 3 dB	0.9 dB	Formula: Absolute accuracy limit –TT Absolute accuracy limit +TT Absolute accuracy limit: minimum power limit = -3.9 dB maximum power limit = +3.9 dB
Annex H.3 Transmitted code power (relative)	Relative accuracy limit = $\lvert P_{out,code1} - P_{out,code2} \rvert \leq$ 2 dB	0.2 dB	Formula: Relative accuracy limit + TT Relative accuracy limit = 2.2 dB
Annex H.4 Transmitted carrier power	total power dynamic range limit = 18 dB	0.3 dB	Formula: total power dynamic range limit – TT total power dynamic range limit = 17.7 dB

Table F.2: Derivation of Test Requirements (Receiver tests)

Test	Minimum Requirement in TS 25.104	Test Tolerance (TT)	Test Requirement in TS 25.141
7.2 Reference sensitivity	Reference sensitivity level = -121 dBm FER/BER limit = 0.001	0.7 dB	Formula: Reference sensitivity level + TT Reference sensitivity level = -120.3 dBm FER/BER limit is not changed
7.3 Dynamic range	Wanted signal level = -91 dBm AWGN level = -73 dBm/3.84 MHz	1.2 dB	Formula: Wanted signal level + TT AWGN level unchanged Wanted signal level = -89.8 dBm
7.4 Adjacent channel selectivity	Wanted signal level = -115 dBm W-CDMA interferer level = -52 dBm	0 dB	Formula: Wanted signal level + TT W-CDMA interferer level unchanged Wanted signal level = -115 dBm
7.5 Blocking characteristics	Wanted signal level = -115 dBm Interferer level See table 7.4a / 7.4b	0 dB	Formula: Wanted signal level + TT Interferer level unchanged Wanted signal level = -115 dBm
7.6 Intermod Characteristics	Wanted signal level = -115 dBm Interferer1 level (10 MHz offset CW) = -48 dBm Interferer2 level (20 MHz offset W-CDMA Modulated) = -48 dBm	0 dB	Formula: Wanted signal level + TT Interferer1 level unchanged Interferer2 level unchanged Wanted signal level = -115 dBm
7.7 Spurious Emissions	Maximum level defined in Table 7.7	0 dB	Formula: Maximum level + TT Add TT to Maximum level in table 7.7

Table F.3: Derivation of Test Requirements (Performance tests)

Test	Minimum Requirement in TS 25.104	Test Tolerance (TT)	Test Requirement in TS 25.141
8.2, Demodulation in static propagation condtion	Received E_b/N_0 values	0.4 dB	Minimum requirement + TT
8.3, Demodulation of DCH in multiplath fading conditons	Received E_b/N_0 values	0.6 dB	Minimum requirement + TT
8.4 Demodulation of DCH in moving propagation conditions	Received E_b/N_0 values	0.6 dB	Minimum requirement + TT
8.5 Demodulation of DCH in birth/death propagation conditions	Received E_b/N_0 values	0.6 dB	Minimum requirement + TT
8.8.1 RACH preamble detection in static propagation conditions	Received E_c/N_0 values	0.4dB	Minimum requirement + TT
8.8.2 RACH preamble detection in multipath fading case 3	Received E_c/N_0 values	0.6dB	Minimum requirement + TT
8.8.3 Demodulation of RACH message in static propagation conditions	Received E_b/N_0 values	0.4dB	Minimum requirement + TT
8.8.4 Demodulation of RACH message in multipath fading case 3	Received E_b/N_0 values	0.6dB	Minimum requirement + TT
~~8.9.3 Demodulation of CPCH message in static propagation conditions~~	~~Received E_b/N_0 values~~	~~0.4 dB~~	~~Minimum requirement + TT~~
~~8.9.4 Demodulation of CPCH message in multipath fading case 3~~	~~Received E_b/N_0 values~~	~~0.6 dB~~	~~Minimum requirement + TT~~
8.10 Site Selection Diversity Transmission (SSDT) Mode	$SIR_{target} + Q_{th} +7.5$ $SIR_{target} + Q_{th} -7.5$	0.4 dB	$Q_{th} + 7.5 +TT$ $Q_{th} +7.5 -TT$

3GPP TSG RAN WG4 (Radio) Meeting #35 **R4-050382**

Athens, Greece 9 - 13 May 2005

CR-Form-v7

CHANGE REQUEST

⌘ **25.141** **CR** **367** ⌘ **rev** ⌘ Current version: **6.9.0** ⌘

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

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

Title:	⌘	Feature Clean Up: Removal of CPCH
Source:	⌘	3GPP TSG RAN WG4 (Radio)
Work item code:	⌘	TEI6
Date:	⌘	16/05/2005
Category:	⌘	**C**
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:	⌘	In RAN#27 removal of some UTRAN features was agreed in order to simplify the specifications.
Summary of change:	⌘	CPCH is removed from the specification. **Isolated Impact Analysis** Functionality removed: CPCH Isolated impact statement: Since functionality is removed, UE implementations are not affected. Would affect UTRAN implementations supporting the removed functionality.
Consequences if not approved:	⌘	

Clauses affected:	⌘	4.1.4; 4.2.3; 8.9; A.8; B.3.1; B.3.2; C.1.6; C.1.8; Annex F				
		Y	**N**			
Other specs affected:	⌘	**X**		Other core specifications	⌘	25.201, 25.211, 25.212, 25.213, 25.214, 25.215, 25.301, 25.302, 25.303, 25.306, 25.321, 25.331, 25.401, 25.420, 25.423, 25.424, 25.425, 25.430, 25.433, 25.434, 25.435, 25.922
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

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

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

4.1.4 Measurement of performance requirement

Table 4.1B: Maximum Test System Uncertainty for Performance Requirements

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

--- next changed section ---

4.2.3 Performance requirement

Table 4.1E: Test Tolerances for Performance Requirements.

Subclause	Test Tolerance[1]
8.2, Demodulation in static propagation condtion	0.4dB
8.3, Demodulation of DCH in multiplath fading conditons	0.6dB
8.4 Demodulation of DCH in moving propagation conditions	0.6dB
8.5 Demodulation of DCH in birth/death propagation conditions	0.6dB
8.8.1 RACH preamble detection in static propagation conditions	0.4dB
8.8.2 RACH preamble detection in multipath fading case 3	0.6dB
8.8.3 Demodulation of RACH message in static propagation conditions	0.4dB
8.8.4 Demodulation of RACH message in multipath fading case 3	0.6dB
~~8.9.3 Demodulation of CPCH message in static propagation conditions~~	~~0.4dB~~
~~8.9.4 Demodulation of CPCH message in multipath fading case 3~~	~~0.6dB~~
8.10 Site Selection Diversity Transmission (SSDT) Mode	0.4dB
8.11.1 ACK false alarm in static propagation conditions	0.4dB
8.11.2 ACK false alarm in multipath fading conditions	0.6dB
8.11.3 ACK mis-detection in static propagation conditions	0.4dB
8.11.4 ACK mis-detection in multipath fading conditions	0.6dB
Note 1: Unless otherwise stated, the Test Tolerances are applied to the stimulus signal(s). See Annex F.	

--- next changed section ---

8.9 ~~CPCH Performance~~Void

~~8.9.1 CPCH access preamble and collision detection preamble detection in static propagation conditions~~

~~8.9.1.1 Definition and applicability~~

~~The CPCH access preamble and collision detection preamble are identical to the RACH preamble. The performance requirement of CPCH for access preamble (AP) and collision detection preamble (CD) detection in static propagation conditions is the same as that defined for RACH preamble and is determined by the two parameters probability of false detection of the preamble (Pfa) and the probability of detection of preamble (Pd).~~

~~8.9.1.2 Conformance and test requirement~~

~~The conformance and test requirement for CPCH for access preamble (AP) and collision detection preamble (CD) detection in static propagation conditions is the same as that defined for RACH preamble in section 8.8.1 of this specification. No additional conformance test is needed.~~

~~8.9.2 CPCH access preamble and collision detection preamble detection in multipath fading case 3~~

~~8.9.2.1 Definition and applicability~~

~~The CPCH access preamble and collision detection preamble are identical to the RACH preamble. The performance requirement of CPCH for access preamble (AP) and collision detection preamble (CD) detection in multipath fading~~

case 3 conditions is the same as that defined for RACH preamble and is determined by the two parameters probability of false detection of the preamble (Pfa) and the probability of detection of preamble (Pd).

8.9.2.2 Conformance and test requirement

The conformance and test requirement for CPCH for access preamble (AP) and collision detection preamble (CD) detection in multipath fading case 3 conditions is the same as that defined for RACH preamble in section 8.8.2 of this specification. No additional conformance test is needed.

8.9.3 Demodulation of CPCH message in static propagation conditions

8.9.3.1 Definition and applicability

The performance requirement of CPCH in static propagation conditions is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified E_b/N_0 limit. The BLER is calculated for each of the measurement channels supported by the base station.

The power on the access preamble and collision detection preamble is set to meet or exceed the requirements on Pfa and Pd in subclauses 8.9.1 and 8.9.2. Only one signature is used and it is known by the receiver.

8.9.3.2 Minimum requirement

The BLER shall not exceed the limit for the E_b/N_0 specified in table 8.24.

Table 8.24: Performance requirements in AWGN channel

Transport Block size TB and TTI in frames	**168 bits, TTI = 20 ms**		**360 bits, TTI = 20 ms**	
	E_b/N_0 for required BLER < 10^{-1}	**E_b/N_0 for required BLER < 10^{-2}**	**E_b/N_0 for required BLER < 10^{-1}**	**E_b/N_0 for required BLER < 10^{-2}**
BS with Rx Diversity	4.1 dB	5.0 dB	3.9 dB	4.8 dB
BS without Rx Diversity	7.1 dB	8.0 dB	6.9 dB	7.8 dB

The reference for this requirement is TS 25.104 subclause 8.8.2.

8.9.3.3 Test purpose

The test shall verify the receiver's ability to receive the test signal under static propagation conditions with a BLER not exceeding a specified limit.

8.9.3.4 Method of test

Annex B functional setups for DCH shall also be used for CPCH tests.

8.9.3.4.1 Initial conditions

Test environment: normal; see subclause 4.4.1.

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

Preamble threshold factor: chosen to fulfil the requirements on Pfa and Pd in subclauses 8.9.1 and 8.9.2

1) For BS with Rx diversity, connect the BS tester generating the wanted signal and AWGN generators to both BS antenna connectors for diversity reception via a combining network as shown in annex B for DCH.

2) For BS without Rx diversity, connect the BS tester generating the wanted signal and AWGN generator to the BS antenna connector via a combining network as shown in annex B.

8.9.3.4.2 Procedure

1) Adjust the AWGN generator depending on the BS class under test at the BS input as follows:.

   Wide Area: -84 dBm/3.84 MHz

   Medium Range: -74 dBm/3.84 MHz

   Local Area: -70 dBm/3.84 MHz

2) The characteristics of the wanted signal shall be configured according to the corresponding UL CPCH reference measurement channel defined in annex A.

3) Adjust the equipment so that required E_b/N_0 specified in table 8.25 is achieved. To achieve the specified E_b/N_0, the ratio of the wanted signal level (of the message part) relative to the AWGN signal at the BS input should be adjusted to:

$10*Log10(TB/(TTI*3.84*10^6))+E_b/N_0$ [dBm].

4) The test signal generator sends an access preamble followed by a collision detection preamble then followed by the actual CPCH message. This pattern is repeated (see figure 8.6). The receiver tries to detect the AP and CD preambles and the CPCH message. The block error rate is calculated for the messages that have been decoded. Messages following undetected preambles shall not be taken into account in the BLER measurement.

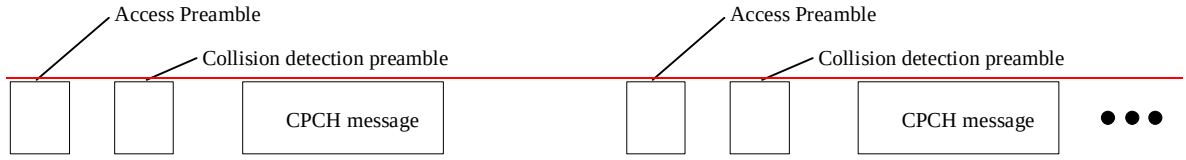

Figure 8.6: CPCH test signal pattern

8.9.3.5 Test requirements

The BLER measured according the subclause 8.9.3.4.2 shall not exceed the limits specified in table 8.25.

Table 8.25: Test requirements in AWGN channel

Transport Block size TB and TTI in frames	168 bits, TTI = 20 ms		360 bits, TTI = 20 ms	
	E_b/N_0 for required BLER < 10^{-1}	E_b/N_0 for required BLER < 10^{-2}	E_b/N_0 for required BLER < 10^{-1}	E_b/N_0 for required BLER < 10^{-2}
BS with Rx Diversity	4.5 dB	5.4 dB	4.3 dB	5.2 dB
BS without Rx Diversity	7.5 dB	8.4 dB	7.3 dB	8.2 dB

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

8.9.4 Demodulation of CPCH message in multipath fading case 3

8.9.4.1 Definition and applicability

The performance requirement of CPCH in multipath fading case 3 is determined by the maximum Block Error Ratio (BLER) allowed when the receiver input signal is at a specified E_b/N_0 limit. The BLER is calculated for each of the measurement channels supported by the base station.

The power on the access preamble and collision detection preamble is set to meet or exceed the requirements on Pfa and Pd in subclauses 8.9.1 and 8.9.2. Only one signature is used and it is known by the receiver.

8.9.4.2 Minimum requirement

The BLER shall not exceed the limit for the E_b/N_0 specified in table 8.26.

Table 8.26: Performance requirements in fading case 3 channel

Transport Block size TB and TTI in frames	168 bits, TTI = 20 ms		360 bits, TTI = 20 ms	
	E_b/N_0 for required BLER < 10^{-1}	E_b/N_0 for required BLER < 10^{-2}	E_b/N_0 for required BLER < 10^{-1}	E_b/N_0 for required BLER < 10^{-2}
BS with Rx Diversity	7.5 dB	8.5 dB	7.3 dB	8.1 dB
BS without Rx Diversity	10.8 dB	12.0 dB	10.7 dB	11.7 dB

The reference for this requirement is TS 25.104 subclause 8.8.2.

8.9.4.3 Test purpose

The test shall verify the receiver's ability to receive the test signal under multipath fading case 3 propagation conditions with a BLER not exceeding a specified limit.

8.9.4.4 Method of test

Annex B functional setups for DCH shall also be used for CPCH tests.

8.9.4.4.1 Initial conditions

Test environment: normal; see subclause 4.4.1.

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

Preamble threshold factor: chosen to fulfil the requirements on Pfa and Pd in subclauses 8.9.1 and 8.9.2

1) For BS with Rx diversity, connect the BS tester generating the wanted signal, multipath fading simulators and AWGN generators to both BS antenna connectors for diversity reception via a combining network as shown in annex B.

2) For BS without Rx diversity, connect the BS tester generating the wanted signal, multipath fading simulator and AWGN generator to the BS antenna connector via a combining network as shown in annex B.

8.9.4.4.2 Procedure

1) Adjust the AWGN generator depending on the BS class under test at the BS input as follows:.

   Wide Area: -84 dBm/3.84 MHz

   Medium Range: -74 dBm/3.84 MHz

   Local Area: -70 dBm/3.84 MHz

2) The characteristics of the wanted signal shall be configured according to the corresponding UL CPCH reference measurement channel defined in annex A.

3) Adjust the equipment so that required E_b/N_0 specified in table 8.27 is achieved. To achieve the specified E_b/N_0, the ratio of the wanted signal level (of the message part) relative to the AWGN signal at the BS input should be adjusted to:

$$10*\text{Log10}(TB/(TTI*3.84*10^6))+E_b/N_0 \text{ [dBm]}.$$

4) The test signal generator sends an access preamble followed by a collision detection preamble then followed by the actual CPCH message. This pattern is repeated (see figure 8.7). The receiver tries to detect the preamble and the message. The block error rate is calculated for the messages that have been decoded. Messages following undetected preambles shall not be taken into account in the BLER measurement.

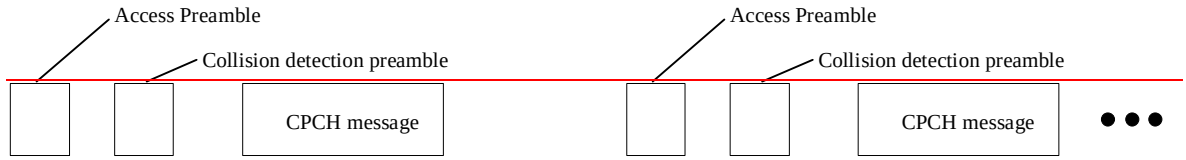

Figure 8.7: CPCH test signal pattern

8.9.4.5 Test requirements

The BLER measured according to subclause 8.9.4.4.2 shall not exceed the limits specified in table 8.27

Table 8.27: Test requirements in fading case 3 channel

Transport Block size TB and TTI in frames	168 bits, TTI = 20 ms		360 bits, TTI = 20 ms	
	E_b/N_0 for required BLER < 10^{-1}	E_b/N_0 for required BLER < 10^{-2}	E_b/N_0 for required BLER < 10^{-1}	E_b/N_0 for required BLER < 10^{-2}
BS with Rx Diversity	8.1 dB	9.1 dB	7.9 dB	8.7 dB
BS without Rx Diversity	11.4 dB	12.6 dB	11.3 dB	12.3 dB

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

--- next changed section ---

A.8 Reference measurement channels for UL CPCHVoid

The parameters for the UL CPCH reference measurement channels are specified in Table A.8.

Table A.8: Reference measurement channels for UL CPCH

Parameter			Unit
CPCH	CRC	16	bits
	Channel Coding	Rate ½ conv. coding	
	TTI	20	ms
	TB size	168, 360	bits
	Rate Matching	Repetition	
	Number of diversity antennas	2	
	Preamble detection window size	256	chips
	Power control preamble length	0	slots
Power ratio of CPCH Control/Data TB = 168		-2.69	dB
Power ratio of CPCH Control/Data TB = 360		-3.52	dB

--- next changed section ---

B.3 Performance requirement

B.3.1 Demodulation of DCH, RACH~~, CPCH~~ and HS-DPCCH signaling in static conditions

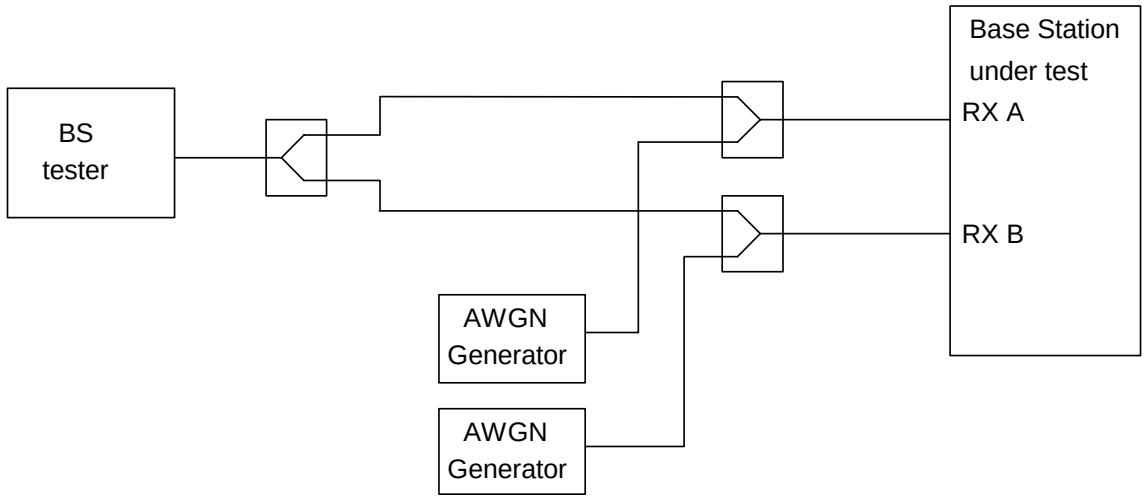

Figure B.13: Functional Set-up for Demodulation of DCH, RACH and ~~CPCH~~ HS-DPCCH in static conditions for BS with Rx diversity

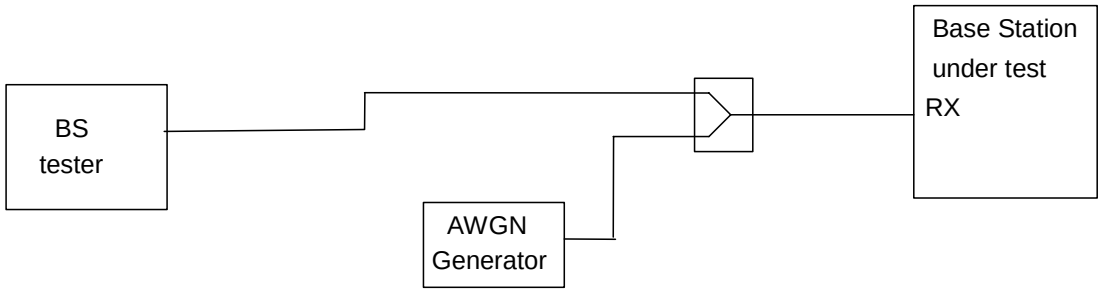

Figure B.13A: Functional Set-up for Demodulation of DCH, RACH and ~~CPCH~~ HS-DPCCH in static conditions for BS without Rx diversity

B.3.2 Demodulation of DCH, RACH~~, CPCH~~ and HS-DPCCH signaling in multipath fading conditions

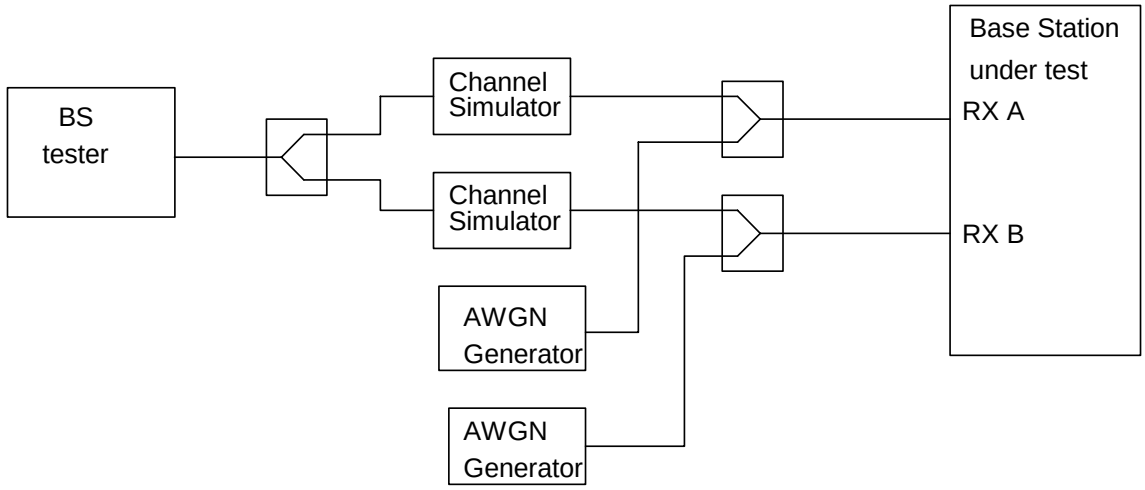

Figure B.14: Functional Set-up for Demodulation of DCH, RACH and ~~CPCH~~ HS-DPCCH in multipath fading conditions for BS with Rx diversity

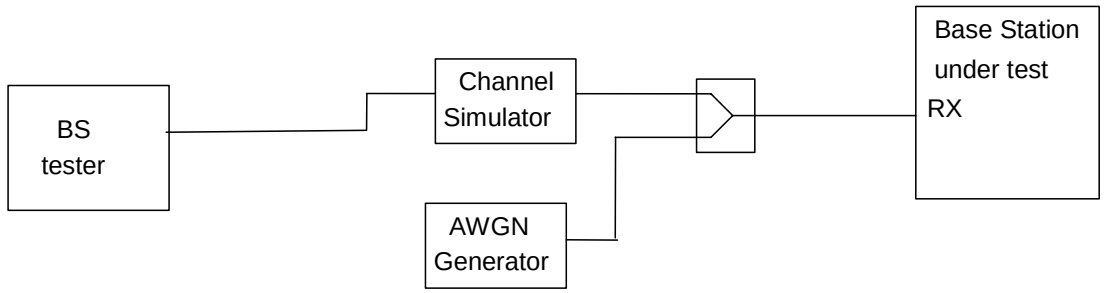

Figure B.14A: Functional Set-up for Demodulation of DCH, RACH and ~~CPCH~~ HS-DPCCH in multipath fading conditions for BS without Rx diversity

--- next changed section ---

C.1.6 Good balance between test time and statistical significance

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

Table C.1: independent and dependent test parameters

Independent test parameters			Dependent test parameters		
Test Parameter	**Value**	**Reference**	**Test parameter**	**Value**	**Reference**
Bad DUT factor M	1.5	Tables C.3 to C.~~7~~6	Early pass/fail condition	Curves	Subclause C.1.5 Figure C.1.9
Final probability of wrong pass/fail decision F	0.2%, (0.02%, note 2)	Subclause C.1.5	Target number of error events	345	Tables C.3 to C.~~7~~6
			Probability of wrong pass/fail decision per test step D	0.0085%, (0.0008% and 0.008%, note 2)	
			Test limit factor TL	1.234	Tables C.3 to C.~~7~~6
Minimum test time		Table C.2			

The minimum test time is derived from the following justification:

1) For no propagation conditions and static propagation condition

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

2) For multipath fading condition

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

3) For birth death propagation conditions

   No stop of the test until 200 birth death transitions occur

4) For moving propagation conditions: 628 sec

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

Table C.2: minimum Test time

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

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

--- next changed section ---

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

Table C.3: Test conditions for BER tests

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

Table C.4: Test conditions for BLER tests

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

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

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

Table C.6: Test conditions for BLER tests

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

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

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

Table C.8: ~~Test conditions for BLER tests~~Void

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

--- next changed section ---

Annex F (informative): Derivation of Test Requirements

The Test Requirements in this specification have been calculated by relaxing the Minimum Requirements of the core specification using the Test Tolerances defined in subclause 4.2. When the Test Tolerance is zero, the Test Requirement will be the same as the Minimum Requirement. When the Test Tolerance is non-zero, the Test Requirements will differ from the Minimum Requirements, and the formula used for this relaxation is given in tables F.1, F.2 and F.3

Note that a formula for applying Test Tolerances is provided for all tests, even those with a test tolerance of zero. This is necessary in the case that the Test System uncertainty is greater than that allowed in subclause 4.1. In this event, the excess error shall be subtracted from the defined test tolerance in order to generate the correct tightened Test Requirements as defined in subclause 4.3.

For example, a Test System having 0.9 dB accuracy for test 6.2.1 Base Station maximum output power (which is 0.2 dB above the limit specified in subclause 4.) would subtract 0.2 dB from the Test Tolerance of 0.7 dB defined in subclause 4.2. This new test tolerance of 0.5 dB would then be applied to the Minimum Requirement using the formula defined in Table F.1 to give a new range of ±2.5 dB of the manufacturer's rated output power.

Using this same approach for the case where a test had a test tolerance of 0 dB, an excess error of 0.2 dB would result in a modified test tolerance of –0.2 dB.

Table F.1: Derivation of Test Requirements (Transmitter tests)

Test	Minimum Requirement in TS 25.104	Test Tolerance (TT)	Test Requirement in TS 25.141
6.2.1 Base station maximum output power	In normal conditions … within +2 dB and -2 dB of the manufacturer's rated output power In extreme conditions… within +2.5 dB and –2.5 dB of the manufacturer's rated output power	0.7 dB	Formula: Upper limit + TT Lower limit – TT In normal conditions … within +2.7 dB and –2.7 dB of the manufacturer's rated output power In extreme conditions… within +3.2 dB and –3.2 dB of the manufacturer's rated output power
6.2.2 CPICH Power accuracy	CPICH power shall be within ±2.1dB	0.8 dB	Formula: Upper limit + TT Lower limit – TT CPICH power shall be within ±2.9dB
6.3 Frequency error	Frequency error limit = 0.05 ppm	12 Hz	Formula: Frequency Error limit + TT Frequency Error limit = 0.05 ppm + 12 Hz
6.4.2 Power control steps	Lower and upper limits as specified in tables 6.9 and 6.10a	0.1 dB	Formula: Upper limits + TT Lower limits – TT 0.1 dB applied as above to tables 6.9 and 6.10a
6.4.3 Power control dynamic range	maximum power limit = BS maximum output power -3 dB minimum power limit = BS maximum output power –28 dB	1.1 dB	Formula: maximum power limit – TT minimum power limit + TT maximum power limit = BS maximum output power –4.1 dB minimum power limit = BS maximum output power –26.9 dB
6.4.4 Total power dynamic range	total power dynamic range limit = 18 dB	0.3 dB	Formula: total power dynamic range limit – TT total power dynamic range limit = 17.7 dB
6.4.5. IPDL time mask	maximum power limit = BS maximum output power –35 dB	0.7 dB	Formula: maximum power limit + TT maximum power limit = BS maximum output power – 34.3 dB
6.5.1 Occupied Bandwidth	occupied bandwidth limit = 5 MHz	0 kHz	Formula: Occupied bandwidth limit + TT Occupied bandwidth limit = 5 MHz
6.5.2.1 Spectrum emission mask	Maximum level defined in tables 6.11, 6.12, 6.13 and 6.14:	1.5 dB(0 dB for the additional Band II requirements)	Formula: Maximum level + TT Add 1.5 to Maximum level entries in tables 6.11, 6.12, 6.13 and 6.14.
6.5.2.2 Adjacent Channel Leakage power Ratio (ACLR)	ACLR limit = 45 dB at 5 MHz ACLR limit = 50 dB at 10 MHz	0.8 dB	Formula: ACLR limit – TT ACLR limit = 44.2 dB at 5 MHz ACLR limit = 49.2 dB at 10 MHz
6.5.3 Spurious emissions	Maximum level defined in tables 6.16 to 6.26	0 dB	Formula: Maximum limit + TT Add 0 to Maximum level in tables 6.16 to 6.26
6.6 Transmit intermodulation (interferer requirements) This tolerance applies to the stimulus and not the measurements defined in 6.5.2.1, 6.5.2.2 and 6.5.3.	Wanted signal level – interferer level = 30 dB	0 dB	Formula: Ratio + TT Wanted signal level – interferer level = 30 + 0 dB
6.7.1 EVM	EVM limit =17.5 % for a composite signal modulated only by QPSK EVM limit = 12.5 % for a composite signal modulated by QPSK and 16QAM	0 %	Formula: EVM limit + TT EVM limit = 17.5% for a composite signal modulated only by QPSK EVM limit = 12.5 % for a composite signal modulated by QPSK and 16QAM

6.7.2 Peak code Domain error	Peak code domain error limit = -33 dB	1.0 dB	Formula: Peak code domain error limit + TT Peak code domain error limit = -32 dB
6.7.3 Time alignment error in TX diversity	Max time alignment error = 0.25 T_c Min time alignment error = -0.25 T_c	0.1 T_c	Formula: Max time alignment error + TT Min time alignment error – TT Max time alignment error = 0.35 T_c Min time alignment error = -0.35 T_c
Annex H.3 Transmitted code power (absolute)	Absolute accuracy limit = Pout,code – 3 dB Pout,code + 3 dB	0.9 dB	Formula: Absolute accuracy limit –TT Absolute accuracy limit +TT Absolute accuracy limit: minimum power limit = -3.9 dB maximum power limit = +3.9 dB
Annex H.3 Transmitted code power (relative)	Relative accuracy limit = $\lvert P_{out,code1} - P_{out,code2} \rvert \leq 2$ dB	0.2 dB	Formula: Relative accuracy limit + TT Relative accuracy limit = 2.2 dB
Annex H.4 Transmitted carrier power	total power dynamic range limit = 18 dB	0.3 dB	Formula: total power dynamic range limit – TT total power dynamic range limit = 17.7 dB

Table F.2: Derivation of Test Requirements (Receiver tests)

Test	Minimum Requirement in TS 25.104	Test Tolerance (TT)	Test Requirement in TS 25.141
7.2 Reference sensitivity	Reference sensitivity level = -121 dBm FER/BER limit = 0.001	0.7 dB	Formula: Reference sensitivity level + TT Reference sensitivity level = -120.3 dBm FER/BER limit is not changed
7.3 Dynamic range	Wanted signal level = -91 dBm AWGN level = -73 dBm/3.84 MHz	1.2 dB	Formula: Wanted signal level + TT AWGN level unchanged Wanted signal level = -89.8 dBm
7.4 Adjacent channel selectivity	Wanted signal level = -115 dBm W-CDMA interferer level = -52 dBm	0 dB	Formula: Wanted signal level + TT W-CDMA interferer level unchanged Wanted signal level = -115 dBm
7.5 Blocking characteristics	Wanted signal level = -115 dBm Interferer level See table 7.4a / 7.4b	0 dB	Formula: Wanted signal level + TT Interferer level unchanged Wanted signal level = -115 dBm
7.6 Intermod Characteristics	Wanted signal level = -115 dBm Interferer1 level (10 MHz offset CW) = -48 dBm Interferer2 level (20 MHz offset W-CDMA Modulated) = -48 dBm	0 dB	Formula: Wanted signal level + TT Interferer1 level unchanged Interferer2 level unchanged Wanted signal level = -115 dBm
7.7 Spurious Emissions	Maximum level defined in Table 7.7	0 dB	Formula: Maximum level + TT Add TT to Maximum level in table 7.7

Table F.3: Derivation of Test Requirements (Performance tests)

Test	Minimum Requirement in TS 25.104	Test Tolerance (TT)	Test Requirement in TS 25.141
8.2, Demodulation in static propagation condtion	Received E_b/N_0 values	0.4 dB	Minimum requirement + TT
8.3, Demodulation of DCH in multiplath fading conditons	Received E_b/N_0 values	0.6 dB	Minimum requirement + TT
8.4 Demodulation of DCH in moving propagation conditions	Received E_b/N_0 values	0.6 dB	Minimum requirement + TT
8.5 Demodulation of DCH in birth/death propagation conditions	Received E_b/N_0 values	0.6 dB	Minimum requirement + TT
8.8.1 RACH preamble detection in static propagation conditions	Received E_c/N_0 values	0.4dB	Minimum requirement + TT
8.8.2 RACH preamble detection in multipath fading case 3	Received E_c/N_0 values	0.6dB	Minimum requirement + TT
8.8.3 Demodulation of RACH message in static propagation conditions	Received E_b/N_0 values	0.4dB	Minimum requirement + TT
8.8.4 Demodulation of RACH message in multipath fading case 3	Received E_b/N_0 values	0.6dB	Minimum requirement + TT
~~8.9.3 Demodulation of CPCH message in static propagation conditions~~	~~Received E_b/N_0 values~~	~~0.4 dB~~	~~Minimum requirement + TT~~
~~8.9.4 Demodulation of CPCH message in multipath fading case 3~~	~~Received E_b/N_0 values~~	~~0.6 dB~~	~~Minimum requirement + TT~~
8.10 Site Selection Diversity Transmission (SSDT) Mode	$SIR_{target} + Q_{th} +7.5$ $SIR_{target} + Q_{th} -7.5$	0.4 dB	$Q_{th} + 7.5 +TT$ $Q_{th} +7.5 -TT$
8.11.1 ACK false alarm in static propagation conditions	Received E_c/N_0 values	0.4 dB	Minimum requirement + TT
8.11.2 ACK false alarm in multipath fading conditions	Received E_c/N_0 values	0.6 dB	Minimum requirement + TT
8.11.3 ACK mis-detection in static propagation conditions	Received E_c/N_0 values	0.4 dB	Minimum requirement + TT
8.11.4 ACK mis-detection in multipath fading conditions	Received E_c/N_0 values	0.6 dB	Minimum requirement + TT