TSG RAN Meeting #15   **RP-020039**

Cheju, Korea, 5 - 8 March 2002

Title: **CRs (Rel-5) for WI "Technical Enhancements and Improvements"**

Source: **TSG RAN WG4**

Agenda Item: **9.9**

RAN4 Tdoc	Spec	CR	Rev	Phase	Title	Cat	Curr Ver	New Ver
R4-020365	25.101	145	1	Rel-5	Correction of Change of TFC	F	5.1.0	5.2.0
R4-020420	25.104	105	2	Rel-5	Correction of reference measurement channel for 2048 kbps	F	5.1.0	5.2.0
R4-020377	25.104	113	1	Rel-5	Correction to units in spectrum emission mask	F	5.1.0	5.2.0
R4-020378	25.105	107		Rel-5	Correction to units in spectrum emission mask	F	4.4.0	5.0.0
R4-020402	25.123	181		Rel-5	Corrections to Event-Triggering and Reporting Criteria in CELL_DCH	F	4.4.0	5.0.0
R4-020419	25.133	246	1	Rel-5	Test description addition to chapter 9.2	F	5.1.0	5.2.0
R4-020421	25.141	158	1	Rel-5	Correction of reference measurement channel for 2048 kbps	F	5.1.0	5.2.0
R4-020379	25.141	167	1	Rel-5	Correction to units in spectrum emission mask	F	5.1.0	5.2.0
R4-020380	25.142	110		Rel-5	Correction to units in spectrum emission mask	F	4.4.0	5.0.0

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CHANGE REQUEST

| ⌘ | **25.101** CR **145** | ⌘ **rev** **1** | ⌘ | Current version: | **5.1.0** | ⌘ |

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Proposed change affects: ⌘   (U)SIM ☐   ME/UE **X**   Radio Access Network ☐   Core Network ☐

Title: ⌘	Correction of Change of TFC	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI5	***Date:*** ⌘ 1/2/2002
Category: ⌘ **F**		***Release:*** ⌘ Rel-5

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

Reason for change: ⌘	Current description is not correct. When voice, user or control information is not present, only the "DPDCH" is turned off, not "DPCH", and the "DPCCH" which consists of TPC, TFCI, FBI and PILOT bits is always turned on.
Summary of change: ⌘	Editorial corrections to section 6.5.3. The word of "DPCH" changes to "DPDCH".
Consequences if not approved: ⌘	It might cause misunderstanding to specification.

Clauses affected: ⌘	6.5.3
Other specs affected: ⌘	☐ Other core specifications ⌘ **X** Test specifications 34.121 ☐ O&M Specifications
Other comments: ⌘	

How to create CRs using this form:

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

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.

6.5.3 Change of TFC

A change of TFC (Transport Format Combination) in uplink means that the power in the uplink varies according to the change in data rate. DTX, where the DP<u>D</u>CH is turned off, is a special case of variable data, which is used to minimise the interference between UE(s) by reducing the UE transmit power when voice, user or control information is not present.

6.5.3.1 Minimum requirement

A change of output power is required when the TFC, and thereby the data rate, is changed. The ratio of the amplitude between the DPDCH codes and the DPCCH code will vary. The power step due to a change in TFC shall be calculated in the UE so that the power transmitted on the DPCCH shall follow the inner loop power control. The step in total transmitted power (DPCCH + DPDCH) shall then 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. The accuracy of the power step, given the step size, is specified in Table 6.8. The power change due to a change in TFC is defined as the relative power difference between the average power of the original (reference) timeslot and the average power of the target timeslot, not including the transient duration. The transient duration is from 25µs before the slot boundary to 25µs after the slot boundary. The power is measured with a filter that has a Root-Raised Cosine (RRC) filter response with a roll off $\alpha = 0.22$ and a bandwidth equal to the chip rate.

Table 6.8: Transmitter power step tolerance

Power step size (Up or down) ΔP [dB]	Transmitter power step tolerance [dB]
0	+/- 0.5 dB
1	+/- 0.5 dB
2	+/- 1.0 dB
3	+/- 1.5 dB
$4 \leq \Delta P \leq 10$	+/- 2.0 dB
$11 \leq \Delta P \leq 15$	+/- 3.0 dB
$16 \leq \Delta P \leq 20$	+/- 4.0 dB
$21 \leq \Delta P$	+/- 6.0 dB

The transmit power levels versus time shall meet the mask specified in Figure 6.4.
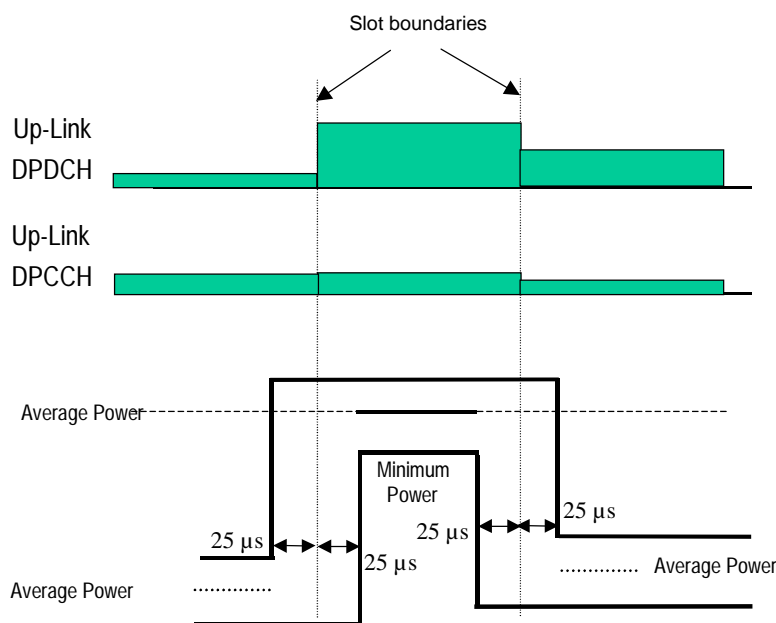
Figure 6.4: Transmit template during TFC change

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CHANGE REQUEST

| ⌘ | **25.142** CR **110** | ⌘ | ev | **-** | ⌘ | Current version: | **4.3.0** | ⌘ |

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Proposed change affects: ⌘　(U)SIM ☐　ME/UE ☐　Radio Access Network **X**　Core Network ☐

Title: ⌘	Correction to units in Spectrum emission mask	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI5	***Date:*** ⌘　1/2/2002
Category: ⌘　**F**		***Release:*** ⌘　Rel-5

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

Use <u>one</u> of the following releases:
2　*(GSM Phase 2)*
R96　*(Release 1996)*
R97　*(Release 1997)*
R98　*(Release 1998)*
R99　*(Release 1999)*
REL-4　*(Release 4)*
REL-5　*(Release 5)*

Reason for change: ⌘	The formula for calculating the spectrum emission mask minimum requirement results in a negative answer. The tested power wording is in contradiction with the core specification.
Summary of change: ⌘	The correct units and power definitions are used
Consequences if not approved: ⌘	The requirement is incorrectly specified leading to potential problems with Spectrum Emission Mask interpretation

Clauses affected: ⌘	6.6.2.1.2.1, 6.6.2.1.5.1

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

| ***Other comments:*** ⌘ | |

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6.6.2 Out of band emission

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

6.6.2.1 Spectrum emission mask

6.6.2.1.1 Definition and applicability

6.6.2.1.1.1 3,84 Mcps TDD option

The spectrum emission mask specifies the limit of the transmitter out of band emissions at frequency offsets from the assigned channel frequency of the wanted signal between 2,5 MHz and 12,5 MHz.

The mask defined in subclause 6.6.2.1.2.1 below may be mandatory in certain regions. In other regions this mask may not be applied.

6.6.2.1.1.2 1,28 Mcps TDD option

The spectrum emission mask specifies the limit of the transmitter out of band emissions at frequency offsets from the assigned channel frequency of the wanted signal between 0,8 MHz and 4 MHz.

The mask defined in subclause 6.6.2.1.2.2 below may be mandatory in certain regions. In other regions this mask may not be applied.

6.6.2.1.2 Minimum Requirements

6.6.2.1.2.1 3,84 Mcps TDD option

For regions where this subclause applies, the requirement shall be met by a base station transmitting on a single RF carrier configured in accordance with the manufacturer's specification. Emissions shall not exceed the maximum level specified in tables 6.13 to 6.16 in the frequency range of f_offset from 2,515 MHz to f_offset$_{max}$ from the carrier frequency, where:

f_offset is the separation between the carrier frequency and the centre of the measurement filter

f_offset$_{max}$ is either 12,5 MHz or the offset to the UMTS Tx band edge as defined in subclause 4.2, whichever is the greater.

Table 6.13: Spectrum emission mask values, BS ~~rated~~ maximum output power P~~RAT~~ $\geq$ 43 dBm

Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2,515 MHz $\leq$ f_offset < 2,715 MHz	-14 dBm	30 kHz
2,715 MHz $\leq$ f_offset < 3,515 MHz	~~-14 - 15 (f_offset - 2,715) dBm~~ $-14dBm - 15 \cdot \left(\dfrac{f\_offset}{MHz} - 2,715 \right) dB$	30 kHz
3,515 MHz $\leq$ f_offset < 4,0 MHz	-26 dBm	30 kHz
4,0 MHz $\leq$ f_offset < 8,0 MHz	-13 dBm	1 MHz
8,0 MHz $\leq$ f_offset < f_offset$_{max}$	-13 dBm	1 MHz

Table 6.14: Spectrum emission mask values, BS ~~rated~~ maximum output power 39 ≤ PRAT < 43 dBm

Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2,515 MHz ≤ f_offset < 2,715 MHz	-14 dBm	30 kHz
2,715 MHz ≤ f_offset < 3,515 MHz	~~-14 - 15 (f_offset – 2,715) dBm~~ $$-14dBm-15\cdot\left(\frac{f\_offset}{MHz}-2,715\right)dB$$	30 kHz
3,515 MHz ≤ f_offset < 4,0 MHz	-26 dBm	30 kHz
4,0 MHz ≤ f_offset < 8,0 MHz	-13 dBm	1 MHz
8,0 MHz ≤ f_offset < f_offset$_{max}$	P – 56 dB~~m~~	1 MHz

Table 6.15: Spectrum emission mask values, BS ~~rated~~ maximum output power 31 ≤ PRAT < 39 dBm

Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2,515 MHz ≤ f_offset < 2,715 MHz	P – 53 dB~~m~~	30 kHz
2,715 MHz ≤ f_offset < 3,515 MHz	~~P – 53 - 15 (f_offset – 2,715) dBm~~ $$P-53dB-15\cdot\left(\frac{f\_offset}{MHz}-2,715\right)dB$$	30 kHz
3,515 MHz ≤ f_offset < 4,0 MHz	P – 65 dB~~m~~	30 kHz
4,0 MHz ≤ f_offset < 8,0 MHz	P – 52 dB~~m~~	1 MHz
8,0 MHz ≤ f_offset < f_offset$_{max}$	P – 56 dB~~m~~	1 MHz

Table 6.16: Spectrum emission mask values, BS ~~rated~~ maximum output power PRAT < 31 dBm

Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2,515 MHz ≤ f_offset < 2,715 MHz	-22 dBm	30 kHz
2,715 MHz ≤ f_offset < 3,515 MHz	~~-22 – 15 (f_offset – 2,715) dBm~~ $$-22dBm-15\cdot\left(\frac{f\_offset}{MHz}-2,715\right)dB$$	30 kHz
3,515 MHz ≤ f_offset < 4,0 MHz	-34 dBm	30 kHz
4,0 MHz ≤ f_offset < 8,0 MHz	-21 dBm	1 MHz
8,0 MHz ≤ f_offset < f_offset$_{max}$	-25 dBm	1 MHz

The normative reference for this requirement is TS 25.105 [1] subclause 6.6.2.1.1

6.6.2.1.2.2   1,28 Mcps TDD option

For regions where this subclause applies, the requirement shall be met by a base station transmitting on a single RF carrier configured in accordance with the manufacturer's specification. Emissions shall not exceed the maximum level specified in tables 6.13A to 16A in the frequency range of f_offset from 0.815 MHz to f_offset$_{max}$ from the carrier frequency, where:

-    f_offset is the separation between the carrier frequency and the centre of the measurement filter

-    f_offset$_{max}$ is either 4 MHz or the offset to the UMTS Tx band edge as defined in subclause 4.2, whichever is the greater.

Table 6.13A: Spectrum emission mask values, BS maximum output power P ≥ 43 dBm for 1,28 Mcps TDD

Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
0.815MHz ≤ f_offset < 1.015MHz	-14 dBm	30 kHz
1.015MHz ≤ f_offset < 1.815MHz	- 14 - 15·(f_offset – 1.015) dBm	30 kHz
1.815MHz ≤ f_offset < 2.3MHz	-28 dBm	30 kHz
2.3MHz ≤ f_offset < f_offset$_{max}$	-13 dBm	1 MHz

Table 6.14A: Spectrum emission mask values, BS maximum output power 39 ≤ P < 43 dBm for 1,28 Mcps TDD

Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
0.815MHz ≤ f_offset < 1.015MHz	-14 dBm	30 kHz
1.015MHz ≤ f_offset < 1.815MHz	-14 - 15·(f_offset – 1.015) dBm	30 kHz
1.815MHz ≤ f_offset < 2.415MHz	-28 dBm	30 kHz
2.415MHz ≤ f_offset < 2.9MHz	P-71 dBm	30 kHz
2.9MHz ≤ f_offset < f_offset$_{max}$	P - 56 dBm	1 MHz

Table 6.15A: Spectrum emission mask values, BS maximum output power 31 ≤ P < 39 dBm for 1,28 Mcps TDD

Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
0.815MHz ≤ f_offset < 1.015MHz	P - 53 dBm	30 kHz
1.015MHz ≤ f_offset < 1.815MHz	P - 53 - 15·(f_offset – 1.015) dBm	30 kHz
1.815MHz ≤ f_offset < 2.415MHz	P - 67 dBm	30 kHz
2.415MHz ≤ f_offset < 2.9MHz	P - 71 dBm	30 kHz
2.9MHz ≤ f_offset < f_offset$_{max}$	P - 56 dBm	1 MHz

Table 6.16A: Spectrum emission mask values, BS maximum output power P < 31 dBm for 1,28 Mcps TDD

Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
0.815MHz ≤ f_offset < 1.015MHz	-22 dBm	30 kHz
1.015MHz ≤ f_offset < 1.815MHz	-22 - 15·(f_offset – 1.015) dBm	30 kHz
1.815MHz ≤ f_offset < 2.415MHz	-36 dBm	30 kHz
2.415MHz ≤ f_offset < 2.9MHz	-40 dBm	30 kHz
2.9MHz ≤ f_offset < f_offset$_{max}$	-25 dBm	1 MHz

The normative reference for this requirement is TS 25.105 [1] subclause 6.6.2.1.2.

6.6.2.1.3   Test purpose

The test purpose is to verify that the BS out of band emissions do not result in undue interference to any other system (wideband, narrowband) operating at frequencies close to the assigned channel bandwidth of the wanted signal.

This test is independent of the characteristics of possible victim systems and, therefore, complements the tests on occupied bandwidth in 6.6.1 (verifying the spectral concentration of the BS Tx emissions) and on ACLR in 6.6.2.2 (simulating the perception of other UTRA receivers).

6.6.2.1.4   Method of test

6.6.2.1.4.1   Initial conditions

6.6.2.1.4.1.0   General test conditions

Test environment: normal; see subclause 5.9.1.

RF channels to be tested: B, M and T; see subclause 5.3.

6.6.2.1.4.1.1   3,84 Mcps TDD option

(1) Connect the measuring equipment to the antenna connector of the BS under test.

(2) Set the parameters of the BS transmitted signal according to table 6.17.

Table 6.17: Parameters of the BS transmitted signal for spectrum emission mask testing

Parameter	Value/description

TDD Duty Cycle	TS i; i = 0, 1, 2, ..., 14:
	    Transmit, if i is even;
	    Receive, if i is odd.

BS output power setting	PRAT
Number of DPCH in each active TS	9
Power of each DPCH	1/9 of Base Station output power
Data content of DPCH	real life (sufficient irregular)

6.6.2.1.4.1.2   1,28 Mcps TDD option

(1) Connect the measuring equipment to the antenna connector of the BS under test.

(2) Set the parameters of the BS transmitted signal according to table 6.17A.

Table 6.17A: Parameters of the BS transmitted signal for spectrum emission mask testing for 1,28 Mcps TDD

Parameter	Value/description

TDD Duty Cycle	TS i; i = 0, 1, 2, 3, 4, 5, 6:
	    Transmit, if i is 0,4,5,6;
	    Receive, if i is 1,2,3.

BS output power setting	PRAT
Number of DPCH in each active TS	8
Power of each DPCH	1/8 of Base Station output power
Data content of DPCH	real life (sufficient irregular)

6.6.2.1.4.2   Procedure

6.6.2.1.4.2.1   3,84 Mcps TDD option

Measure the power of the BS spectrum emissions by applying measurement filters with bandwidths as specified in the relevant table in subclause 6.6.2.1.2.1. The characteristic of the filters shall be approximately Gaussian (typical spectrum analyzer filters). The centre frequency of the filter shall be stepped in contiguous steps over the ranges of frequency offsets f_offset as given in the tables. The step width shall be equal to the respective measurement bandwidth. The time duration of each step shall be sufficiently long to capture one active time slot.

For frequency offsets of the measurement filter centre frequency in the range 4,0 MHz $\leq$ f_offset < f_offset$_{max}$, the measurement shall be performed by applying filters with measurement bandwidth of 50 kHz or less and integrating the measured results over the nominal measurement bandwidth 1 MHz specified in the tables in subclause 6.6.2.1.2.1.

6.6.2.1.4.2.2   1,28 Mcps TDD option

Measure the power of the BS spectrum emissions by applying measurement filters with bandwidths as specified in the relevant table in subclause 6.6.2.1.2.2. The characteristic of the filters shall be approximately Gaussian (typical spectrum analyzer filters). The centre frequency of the filter shall be stepped in contiguous steps over the ranges of frequency offsets f_offset as given in the tables. The step width shall be equal to the respective measurement bandwidth. The time duration of each step shall be sufficiently long to capture one active time slot.

The measurement shall be performed by applying filters with measurement bandwidth of 50 kHz or less and integrating the measured results over the nominal measurement bandwidth 1 MHz specified in the tables in subclause 6.6.2.1.2.2 when the measurement bandwidth is 1MHz.

6.6.2.1.5   Test Requirements

NOTE: If the Test Requirements below differ from the Minimum Requirements, then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in subclause 5.11 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in Annex D.

6.6.2.1.5.1   3,84 Mcps TDD option

The spectrum emissions measured according to subclause 6.6.2.1.4.2.1 shall not exceed the maximum level specified in tables 6.18 to 6.21 for the appropriate BS ~~rated~~ maximum output power

**Table 6.18: Test Requirements for spectrum emission mask values,
BS ~~rated~~ maximum output power $P_{RAT} \geq 43$ dBm**

Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2,515 MHz $\leq$ f_offset < 2,715 MHz	-12,5 dBm	30 kHz
2,715 MHz $\leq$ f_offset < 3,515 MHz	~~- 12,5 – 15 (f_offset – 2,715) dBm~~ $$-12,5dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2,715 \right) dB$$	30 kHz
3,515 MHz $\leq$ f_offset < 4,0 MHz	-24,5 dBm	30 kHz
4,0 MHz $\leq$ f_offset < 8,0 MHz	-11,5 dBm	1 MHz
8,0 MHz $\leq$ f_offset < f_offset$_{max}$	-11,5 dBm	1 MHz

**Table 6.19: Test Requirements for spectrum emission mask values,
BS ~~rated~~ maximum output power $39 \leq P_{RAT} < 43$ dBm**

Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2,515 MHz $\leq$ f_offset < 2,715 MHz	-12,5 dBm	30 kHz
2,715 MHz $\leq$ f_offset < 3,515 MHz	~~- 12,5 – 15 (f_offset – 2,715) dBm~~ $$-12,5dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2,715 \right) dB$$	30 kHz
3,515 MHz $\leq$ f_offset < 4,0 MHz	-24,5 dBm	30 kHz
4,0 MHz $\leq$ f_offset < 8,0 MHz	-11,5 dBm	1 MHz
8,0 MHz $\leq$ f_offset < f_offset$_{max}$	P – 54,5 dB~~m~~	1 MHz

**Table 6.20: Test Requirements for spectrum emission mask values,
BS rated maximum output power 31 ≤ P$_{RAT}$ < 39 dBm**

Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2,515 MHz ≤ f_offset < 2,715 MHz	P – 51,5 dBm	30 kHz
2,715 MHz ≤ f_offset < 3,515 MHz	~~P – 51,5 - 15·(f_offset – 2,715) dBm~~ $P - 51,5 dB - 15 \cdot \left(\dfrac{f\_offset}{MHz} - 2,715 \right) dB$	30 kHz
3,515 MHz ≤ f_offset < 4,0 MHz	P – 63,5 dBm	30 kHz
4,0 MHz ≤ f_offset < 8,0 MHz	P – 50,5 dBm	1 MHz
8,0 MHz ≤ f_offset < f_offset$_{max}$	P – 54,5 dBm	1 MHz

**Table 6.21: Test Requirements for spectrum emission mask values,
BS rated maximum output power P$_{RAT}$ < 31 dBm**

Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2,515 MHz ≤ f_offset < 2,715 MHz	-20,5 dBm	30 kHz
2,715 MHz ≤ f_offset < 3,515 MHz	~~-20,5 – 15·(f_offset – 2,715) dBm~~ $-20,5 dBm - 15 \cdot \left(\dfrac{f\_offset}{MHz} - 2,715 \right) dB$	30 kHz
3,515 MHz ≤ f_offset < 4,0 MHz	-32,5 dBm	30 kHz
4,0 MHz ≤ f_offset < 8,0 MHz	-19,5 dBm	1 MHz
8,0 MHz ≤ f_offset < f_offset$_{max}$	-23,5 dBm	1 MHz

6.6.2.1.5.2   1,28 Mcps TDD option

The spectrum emissions measured according to subclause 6.6.2.1.4.2.2 shall be within the mask defined in the table 6.18A to 6.21A.

Table 6.18A: Test requirements for spectrum emission mask values, BS maximum output power P ≥ 43 dBm for 1,28 Mcps TDD

Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
0.815MHz ≤ f_offset < 1.015MHz	-12.5 dBm	30 kHz
1.015MHz ≤ f_offset < 1.815MHz	- 12.5 - 15·(f_offset – 1.015) dBm	30 kHz
1.815MHz ≤ f_offset < 2.3MHz	-26.5 dBm	30 kHz
2.3MHz ≤ f_offset < f_offset$_{max}$	-11.5 dBm	1 MHz

Table 6.19A: Test requirements for spectrum emission mask values, BS maximum output power 39 ≤ P < 43 dBm for 1,28 Mcps TDD

Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
0.815MHz ≤ f_offset < 1.015MHz	-12.5 dBm	30 kHz
1.015MHz ≤ f_offset < 1.815MHz	-12.5 - 15·(f_offset – 1.015) dBm	30 kHz
1.815MHz ≤ f_offset < 2.415MHz	-26.5 dBm	30 kHz
2.415MHz ≤ f_offset < 2.9MHz	P-69.5 dBm	30 kHz
2.9MHz ≤ f_offset < f_offset$_{max}$	P – 54.5 dBm	1 MHz

Table 6.20A: Test requirements for spectrum emission mask values, BS maximum output power 31 ≤ P < 39 dBm for 1,28 Mcps TDD

Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
0.815MHz ≤ f_offset < 1.015MHz	P – 51.5 dBm	30 kHz
1.015MHz ≤ f_offset < 1.815MHz	P – 51.5 - 15·(f_offset – 1.015) dBm	30 kHz
1.815MHz ≤ f_offset < 2.415MHz	P – 65.5 dBm	30 kHz
2.415MHz ≤ f_offset < 2.9MHz	P – 69.5 dBm	30 kHz
2.9MHz ≤ f_offset < f_offset$_{max}$	P – 54.5 dBm	1 MHz

Table 6.21A: Test requirements for spectrum emission mask values, BS maximum output power P < 31 dBm for 1,28 Mcps TDD

Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
0.815MHz ≤ f_offset < 1.015MHz	-20.5 dBm	30 kHz
1.015MHz ≤ f_offset < 1.815MHz	-20.5 - 15·(f_offset – 1.015) dBm	30 kHz
1.815MHz ≤ f_offset < 2.415MHz	-34.5 dBm	30 kHz
2.415MHz ≤ f_offset < 2.9MHz	-38.5 dBm	30 kHz
2.9MHz ≤ f_offset < f_offset$_{max}$	-23.5 dBm	1 MHz

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CHANGE REQUEST

⌘   **25.141** CR **167**   ⌘ ev **1** ⌘   Current version: **5.1.0** ⌘

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Proposed change affects: ⌘   (U)SIM ☐   ME/UE ☐   Radio Access Network **X**   Core Network ☐

Title: ⌘	Correction to units in Spectrum emission mask	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI5	***Date:*** ⌘ 1/2/2002
Category: ⌘	**F**	***Release:*** ⌘ Rel-5

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

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

Reason for change: ⌘	The formula for calculating the spectrum emission mask minimum requirement makes incorrect use of units, some units defining the range of Δf are missing and the upper limit for Δf is missing.
Summary of change: ⌘	The usage of units is corrected. The upper limit for Δf is added (Δf_{max}).
Consequences if not approved: ⌘	The requirement is incorrectly specified leading to potential problems with Spectrum Emission Mask interpretation.

Clauses affected: ⌘	6.5.2.1.2, 6.5.2.1.5
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	

How to create CRs using this form:

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

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.

6.5.2.1   Spectrum emission mask

6.5.2.1.1   Definitions and applicability

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

6.5.2.1.2   Minimum Requirements

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

-    Δf is the separation between the carrier frequency and the nominal -3dB point of the measuring filter closest to the carrier frequency.

-    f_offset is the separation between the carrier frequency and the centre of the measurement filter;

-    f_offset$_{max}$ is either 12.5 MHz or the offset to the UMTS Tx band edge as defined in subclause 3.4.1, whichever is the greater.

-    Δf_{max} is equal to f_offset$_{max}$ minus half of the bandwidth of the measuring filter.

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

Frequency offset of measurement filter – 3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	~~-14 dBm – 15 (f_offset- 2.715) dB~~ $$-14dBm-15\cdot\left(\frac{f\_offset}{MHz}-2.715\right)dB$$	30 kHz
	3.515MHz ≤ f_offset < 4.0MHz	-26 dBm	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0 MHz ≤ f_offset < 8.0MHz	-13 dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf$_{max}$ ~~MHz~~	8.0 MHz ≤ f_offset < f_offset$_{max}$	-13 dBm	1 MHz

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

Frequency offset of measurement filter – 3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	~~-14dBm − 15 (f_offset - 2.715) dB~~ $-14dBm - 15 \cdot \left(\dfrac{f\_offset}{MHz} - 2.715 \right) dB$	30 kHz
	3.515MHz ≤ f_offset < 4.0MHz	-26 dBm	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0 MHz ≤ f_offset < 8.0MHz	-13 dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf_max ~~MHz~~	8.0MHz ≤ f_offset < f_offset_max	P – 56 dB	1 MHz

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

Frequency offset of measurement filter – 3dB point,Δf	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	P – 53 dB	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	~~P – 53 dB – 15 (f_offset – 2.715) dB~~ $P - 53dB - 15 \cdot \left(\dfrac{f\_offset}{MHz} - 2.715 \right) dB$	30 kHz
	3.515MHz ≤ f_offset < 4.0MHz	P – 65 dB	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0 MHz ≤ f_offset < 8.0MHz	P – 52 dB	1 MHz
7.5 MHz ≤ Δf ≤ Δf_max ~~MHz~~	8.0MHz ≤ f_offset < f_offset_max	P – 56 dB	1 MHz

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

Frequency offset of measurement filter – 3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-22 dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	~~-22 dBm - 15 (f_offset - 2.715) dB~~ $$-22 dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$$	30 kHz
	3.515MHz ≤ f_offset < 4.0MHz	-34 dBm	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0 MHz ≤ f_offset < 8.0MHz	-21 dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf_max ~~MHz~~	8.0MHz ≤ f_offset < f_offset_max	-25 dBm	1 MHz

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

6.5.2.1.3   Test purpose

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

6.5.2.1.4   Method of test

6.5.2.1.4.1   Initial conditions

Test environment: normal; see subclause 4.4.1.

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

1) Set-up the equipment as shown in annex B.

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

3) Measurements with an offset from the carrier centre frequency between 4.0 MHz and (f_offset$_{max}$ – 500 kHz).shall use a 1 MHz measurement bandwidth. The 1MHz measurement bandwidth may be calculated by integrating multiple 50 kHz or narrower filter measurements

4) Detection mode: True RMS.

6.5.2.1.4.2   Procedures

1) Set the BS to transmit a signal in accordance to test model 1, subclause 6.2.1.1.1 at the manufacturer's specified maximum output power.

2) Measure the emission at the specified frequencies with specified measurement bandwidth and note that the measured value does not exceed the specified value.

6.5.2.1.5   Test requirements

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

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

Frequency offset of measurement filter −3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-12.5 dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	~~-12.5 dBm – 15 (f_offset- 2.715) dB~~ $$-12.5 dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$$	30 kHz
	3.515MHz ≤ f_offset < 4.0MHz	-24.5 dBm	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0 MHz ≤ f_offset < 8.0MHz	-11.5 dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf$_{max}$ ~~MHz~~	8.0 MHz ≤ f_offset < f_offset$_{max}$	-11.5 dBm	1 MHz

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

Frequency offset of measurement filter −3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-12.5 dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	~~-12.5 dBm – 15 (f_offset - 2.715) dB~~ $$-12.5 dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$$	30 kHz
	3.515MHz ≤ f_offset < 4.0MHz	-24.5 dBm	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0 MHz ≤ f_offset < 8.0MHz	-11.5 dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf$_{max}$ ~~MHz~~	8.0MHz ≤ f_offset < f_offset$_{max}$	P – 54.5 dB	1 MHz

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

Frequency offset of measurement filter −3dB point,Δf	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	P − 51.5 dB	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	~~P − 51.5 dB − 15 (f_offset − 2.715) dB~~ $$P - 51.5dB - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$$	30 kHz
	3.515MHz ≤ f_offset < 4.0MHz	P − 63.5 dB	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0 MHz ≤ f_offset < 8.0MHz	P − 50.5 dB	1 MHz
7.5 MHz ≤ Δf ≤ Δf_max ~~MHz~~	8.0MHz ≤ f_offset < f_offset_max	P − 54.5 dB	1 MHz

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

Frequency offset of measurement filter −3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-20.5 dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	~~-20.5 dBm − 15 (f_offset − 2.715) dB~~ $$-20.5dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$$	30 kHz
	3.515MHz ≤ f_offset < 4.0MHz	-32.5 dBm	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0 MHz ≤ f_offset < 8.0MHz	-19.5 dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf_max ~~MHz~~	8.0MHz ≤ f_offset < f_offset_max	-23.5 dBm	1 MHz

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

CR-Form-v5

CHANGE REQUEST

⌘   **25.141** CR **158**   ⌘**rev** **1** ⌘   Current version: **5.1.0** ⌘

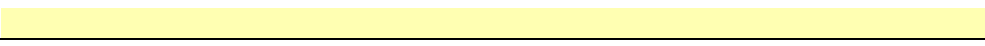*For* **HELP** *on using this form, see bottom of this page or look at the pop-up text over the* ⌘ *symbols.*

Proposed change affects: ⌘   (U)SIM ☐   ME/UE ☐   Radio Access Network **X**   Core Network ☐

Title: ⌘	Correction of reference measurement channel for 2048 kbps	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI5	***Date:*** ⌘ 1/2/2002
Category: ⌘	**F**	***Release:*** ⌘ Rel-5

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

Use <u>one</u> of the following releases:
2   *(GSM Phase 2)*
R96   *(Release 1996)*
R97   *(Release 1997)*
R98   *(Release 1998)*
R99   *(Release 1999)*
REL-4   *(Release 4)*
REL-5   *(Release 5)*

Reason for change: ⌘	The Code block size of 494703 is incorrect, it should be 493911.
	
	 Transport Block size = 4096
	 Transport Block set size = 4096*40 = 163840
	 CRC size = 16
	 Number of bits after transport block concatenation = (4096 + 16) * 40 = 164480
	 Maximum code block size = 5114
	 Number of code blocks = ceil(164480 / 5114) = ceil(32.163) = 33
	  => Code block size = ceil(164480 / 33) = ceil(4984.2) = 4985
	 Each Code block will consist of (R=1/3 and 12 tailbits)
	  3 * 4985 + 12 = 14967 bits
	 All code blocks together are 33 * 14967 = **493911** bits
	 Each radio frame is ceil(493911/8) = **61739** bits.
	
	 The amount of puncturing is 7% for the scheme. This is also corrected in Table A.1 for the 384 kbps channel, where the DCCH was stated to have 18% puncturing while it should be 17%.

Summary of change: ⌘	Size of encoded data blocks and radio frame changed for DTCH, plus puncturing rate.
Consequences if ***not approved:*** ⌘	The reference measurement channel for 2048 will be inconsistent with physical layer specifications in TS 25.212.

Clauses affected: ⌘	A.1, A.6
Other specs ***affected:*** ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications

Other comments: ⌘

Annex A (normative): Measurement channels

A.1 Summary of UL reference measurement channels

The parameters for the UL reference measurement channels are specified in Table A.1 and the channel coding is detailed in figure A.2 through A.6 respectively.

NOTE: For all cases, one DPCCH shall be attached to DPDCH(s).

Table A.1: Reference measuremet channels for UL DCH

Parameter		DCH for DTCH / DCH for DCCH					Unit
DPDCH	Information bit rate	12,2/2,4	64/2,4	144/2,4	384/2,4	2048/2,4	kbps
	Physical channel	60/15	240/15	480/15	960/15	960/15	kbps
	Spreading factor	64	16	8	4	4	
	Repetition rate	22/22	19/19	8/9	-18/-17~~18~~	~~-1/-1~~-7/-7	%
	Interleaving	20	40	40	40	80	ms
	Number of DPDCHs	1	1	1	1	6	
DPCCH	Dedicated pilot	6					bit/slot
	Power control	2					bit/slot
	TFCI	2					bit/slot
	Spreading factor	256					
Power ratio of DPCCH/DPDCH		-2,69	-5,46	-9,54	-9,54	-9,54	dB
Amplitude ratio of DPCCH/DPDCH		0,7333	0,5333	0,3333	0,3333	03333	

A.6 UL reference measurement channel for 2048 kbps

The parameters for the UL reference measurement channel for 2 048 kbps are specified in table A.6 and the channel coding is detailed in figure A.6.

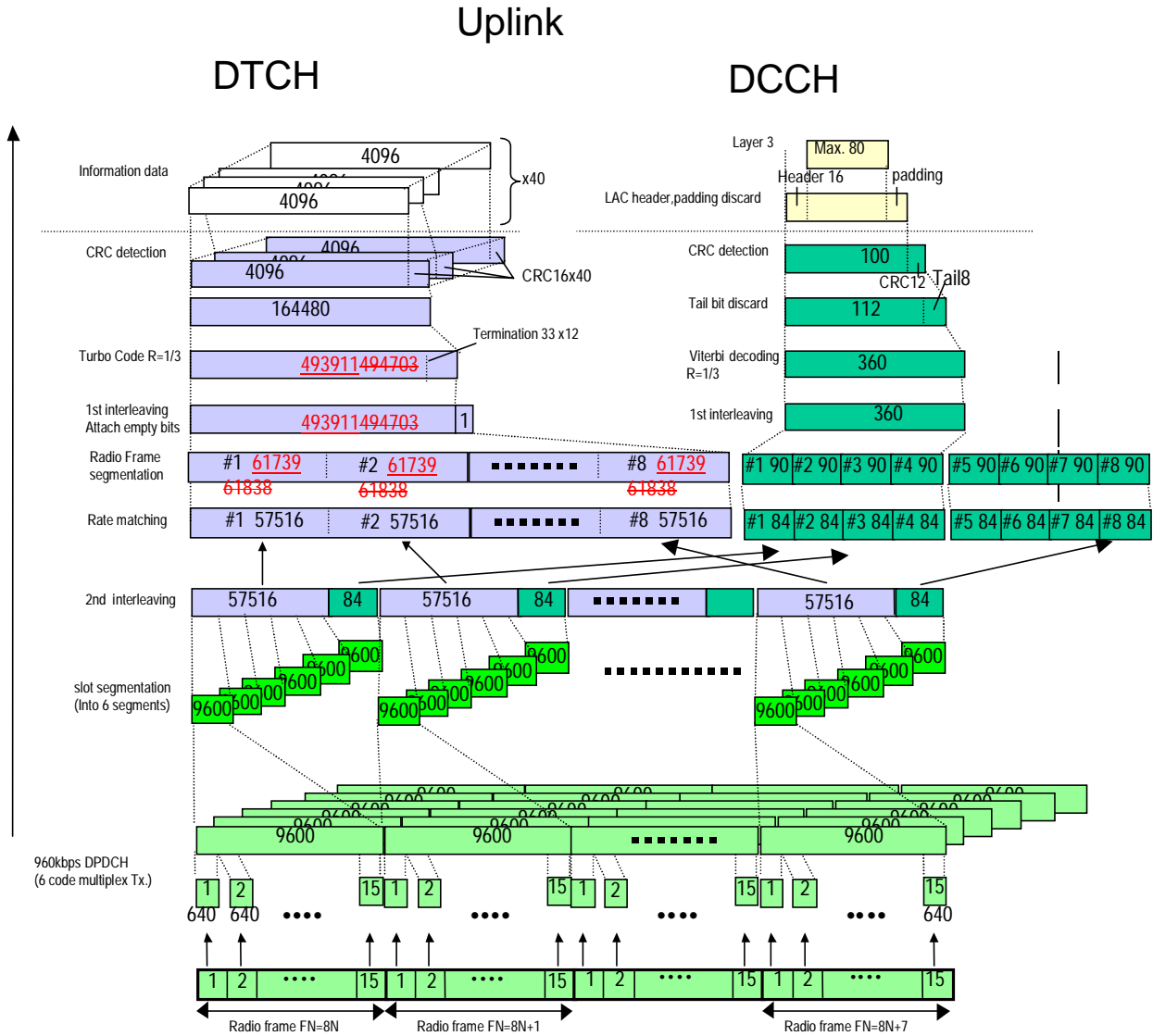**Figure A.6**

Table A.6: UL reference measurement channel (2048kbps)

Parameter	Level	Unit
Information bit rate	2 048	kbps
DPCH	960	kbps
Power control	Off	
TFCI	On	
Puncturing	~~1~~7	%

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.133** CR **246** | ⌘ | ev | **1** | ⌘ | Current version: | **5.1.0** | ⌘ |

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

Proposed change affects: ⌘   (U)SIM ☐   ME/UE ☐   Radio Access Network **X**   Core Network ☐

Title: ⌘	Test description addition to chapter 9.2	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI5	***Date:*** ⌘ 1/2/2002
Category: ⌘	**F**	***Release:*** ⌘ Rel-5

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

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

Reason for change: ⌘	In current specification there is no test descriptions for UTRAN mesurements. The definition of measurement may be therefore interpreted differently. It has been decided to have test like test descriptions located in TS 25.141 as an informative Annex H. Reference to that need to be defined.
Summary of change: ⌘	Addition of reference to chapter 9.2. It defines that test like test descriptions are located in TS 25.141 as an informative Annex H.
Consequences if not approved: ⌘	Reference to test like test descriptions will be missing. Manufacturers may interpret requirements differently.

Clauses affected: ⌘	

Other specs affected: ⌘	☐ Other core specifications ⌘	
	X Test specifications	TS 25.141
	☐ O&M Specifications	

Other comments: ⌘	

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

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

Table 9.34

Reported value	Measured quantity value	Unit
GPS_TIME_00000000000000	UE GPS timing of Cell Frames for UE positioning < 0.0625	chip
GPS_TIME_00000000000001	0.0625 ≤ UE GPS timing of Cell Frames for UE positioning < 0.1250	chip
GPS_TIME_00000000000002	0.1250 ≤ UE GPS timing of Cell Frames for UE positioning < 0.1875	chip
...	...	...
GPS_TIME_3715891199997	2322431999999.8125 ≤ UE GPS timing of Cell Frames for UE positioning < 2322431999999.8750	chip
GPS_TIME_37158911999998	2322431999999.8750 ≤ UE GPS timing of Cell Frames for UE positioning < 2322431999999.9375	chip
GPS_TIME_37158911999999	2322431999999.9375 ≤ UE GPS timing of Cell Frames for UE positioning < 2322432000000.0000	chip

9.2 Measurements Performance for UTRAN

The reported measurement result after layer 1 filtering shall be an estimate of the average value of the measured quantity over the measurement period. The reference point for the measurement result after layer 1 filtering is referred to as point B in the measurement model described in TS 25.302.

The accuracy requirements in this clause are valid for the reported measurement result after layer 1 filtering. The accuracy requirements are verified from the measurement report at point D in the measurement model having the layer 3 filtering disabled.

Test like descriptions of these measurements are located in the TS 25.141 as an informative Annex H. The Annex H specifies test specific parameters for some of the UTRAN requirements in this chapter. The tests provide additional information to how the requirements should be interpreted. Some requirements may lack a test.

CR-Form-v6.1

CHANGE REQUEST

⌘ **25.123** CR **181** ⌘**rev** **-** ⌘ Current version: **4.4.0** ⌘

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

Proposed change affects: ⌘   (U)SIM ☐   ME/UE **X**   Radio Access Network ☐   Core Network ☐

Title: ⌘	Clarifications on requirements for reporting criteria per measurement category (3.84 Mcps TDD option)
Source: ⌘	RAN WG4

Work item code: ⌘	TEI5	***Date:*** ⌘	1/2/2002

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

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

Use <u>one</u> of the following releases:
2   (GSM Phase 2)
R96   (Release 1996)
R97   (Release 1997)
R98   (Release 1998)
R99   (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘	The number of allowed parallel events might be interpreted wrongly.
Summary of change: ⌘	It is clarified that the same type of events are counted separately if either any of their paramenters related to the event or their neighbour cell lists or both differ from each other.
	<u>Isolated Impact Analysis:</u>
	Clarification to a function where the specification was not sufficiently explicit. The clarification would not affect implementations behaving like indicated in the CR but it would affect implementations supporting the corrected functionality.
	The corrected functionality is the support of the number of event triggering and reporting criteria in the UE. If the UE implements this change, but not the network, the UE will not be able to track all events requested by the network. If the UE doesn't implement this change, but the network does, the UE will always be able to track all required events.
Consequences if not approved: ⌘	UTRAN might request too many parallel events to be tracked by UE, which would cause interoperation problems between the UE and the network.

Clauses affected: ⌘	8.3.2

Other specs affected:	⌘	**-** Other core specifications ⌘	
		- Test specifications	
		- O&M Specifications	

Other comments: ⌘	-

8.3 Capabilities for Support of Event Triggering and Reporting Criteria (3.84 Mcps option)

8.3.1 Introduction

This section contains requirements on UE capabilities for support of event triggering and reporting criteria.

The UE can be requested to make measurements under different measurement identity numbers. With each identity number there may be associated multiple number of events. The purpose of this section is to set some limits on the number of different reporting criteria the UE may be requested to track in parallel.

8.3.2 Requirements

In this section reporting criteria can be either event triggered reporting criteria or periodic reporting criteria.

The UE shall be able to support in parallel per category up to E_{cat} reporting criteria according to Table 8.6. The same type of events (e.g. events 1G) are counted as different events if either any of the parameters related to the events or their neighbour cell lists or both differ from each other.

For the measurement categories: Intra-frequency, Inter frequency and Inter-RAT the UE need not support more than 14 reporting criteria in total. For the measurement categories Traffic volume and Quality measurements the UE need not support more than 16 reporting criteria in total.

Table 8.6: Requirements for reporting criteria per measurement category

Measurement category	E_{cat}	Note
Intra-frequency	4	Applicable for periodic reporting or TDD events (1G-1I).
Inter-frequency	6	Applicable for periodic reporting or Event 2A-2F
Inter-RAT	4	Only applicable for UE with this capability
UE internal measurements	8	
Traffic volume measurements	2 + (2 per Transport Channel)	
Quality measurements	2 per Transport Channel	
UP measurements	2	Only applicable for UE with this capability.

CR-Form-v4

CHANGE REQUEST

✼   **25.105** CR **107**   ✼ ev **-** ✼ Current version: **4.3.0** ✼

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

Proposed change affects: ✼ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title: ✼	Correction to units in Spectrum emission mask	
Source: ✼	RAN WG4	
Work item code: ✼	TEI5	***Date:*** ✼ 1/2/2002

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

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

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

Reason for change: ✼	The formula for calculating the spectrum emission mask minimum requirement results in a negative answer, some units defining the range of Δf are missing and the upper limit for Δf is missing.
Summary of change: ✼	The correct units are used. The upper limit for Δf is added (Δf_{max}).
Consequences if not approved: ✼	The requirement is incorrectly specified leading to potential problems with Spectrum Emission Mask interpretation.

Clauses affected: ✼	6.6.2.1

Other specs affected: ✼	☐	Other core specifications ✼	
	X	Test specifications	25.142
	☐	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/3G_Specs/CRs.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.

6.6.2 Out of band emission

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

6.6.2.1 Spectrum emission mask

6.6.2.1.1 3,84 Mcps TDD Option

The mask defined in Table 6.3 to 6.6 below may be mandatory in certain regions. In other regions this mask may not be applied.

For regions where this clause applies, the requirement shall be met by a base station transmitting on a single RF carrier configured in accordance with the manufacturer's specification. Emissions shall not exceed the maximum level specified in tables 6.3 to 6.6 for the appropriate BS maximum output power, in the frequency range from Δf = 2.5 MHz to Δf_{max} from the carrier frequency, where:

- Δf is the separation between the carrier frequency and the nominal -3dB point of the measuring filter closest to the carrier frequency.

- f_offset is the separation between the carrier frequency and the center frequency of the measuring filter.- f_offset$_{max}$ is either 12.5 MHz or the offset to the UMTS Tx band edge as defined in section 5.2, whichever is the greater.

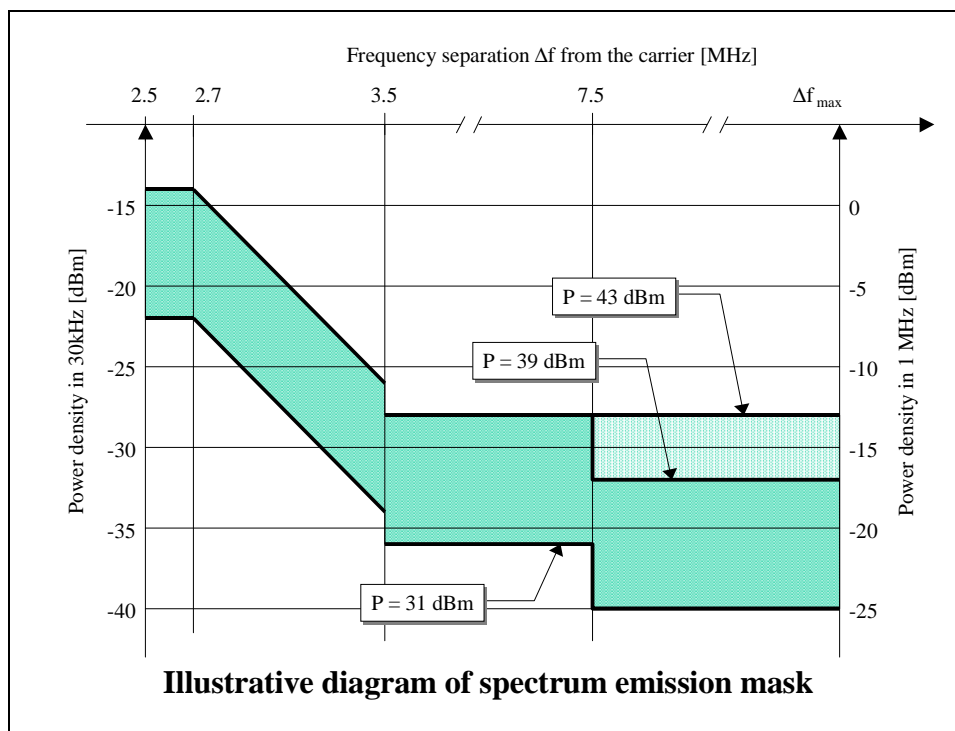- Δf_{max} is equal to f_offset$_{max}$ minus half of the bandwidth of the mesurement filter.

Figure 6.2

Table 6.3: Spectrum emission mask values, BS maximum output power P ≥ 43 dBm

Frequency offset of measurement filter –3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	~~-14 - 15 (f_offset - 2.715) dBm~~ $$-14dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$$	30 kHz
(see note)	3.515MHz ≤ f_offset < 4.0MHz	-26 dBm	30 kHz
3.5 MHz ≤ Δf ≤ Δf_max ~~MHz~~	4.0MHz ≤ f_offset < f_offset_max	-13 dBm	1 MHz

Table 6.4: Spectrum emission mask values, BS maximum output power 39 ≤ P < 43 dBm

Frequency offset of measurement filter –3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	~~-14 - 15 (f_offset - 2.715) dBm~~ $$-14dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$$	30 kHz
(see note)	3.515MHz ≤ f_offset < 4.0MHz	-26 dBm	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0MHz ≤ f_offset < 8.0MHz	-13 dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf_max ~~MHz~~	8.0MHz ≤ f_offset < f_offset_max	P - 56 dB~~m~~	1 MHz

Table 6.5: Spectrum emission mask values, BS maximum output power 31 ≤ P < 39 dBm

Frequency offset of measurement filter –3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	P - 53 dB~~m~~	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	~~P - 53 - 15 (f_offset - 2.715) dBm~~ $$P - 53dB - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$$	30 kHz
(see note)	3.515MHz ≤ f_offset < 4.0MHz	P - 65 dB~~m~~	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0MHz ≤ f_offset < 8.0MHz	P - 52 dB~~m~~	1 MHz
7.5 MHz ≤ Δf ≤ Δf_max ~~MHz~~	8.0MHz ≤ f_offset < f_offset_max	P - 56 dB~~m~~	1 MHz

Table 6.6: Spectrum emission mask values, BS maximum output power P < 31 dBm

Frequency offset of measurement filter –3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-22 dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	~~-22 - 15·(f_offset - 2.715) dBm~~ $$-22dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$$	30 kHz
(see note)	3.515MHz ≤ f_offset < 4.0MHz	-34 dBm	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0MHz ≤ f_offset < 8.0MHz	-21 dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf$_{max}$ ~~MHz~~	8.0MHz ≤ f_offset < f_offset$_{max}$	-25 dBm	1 MHz

NOTE: This frequency range ensures that the range of values of f_offset is continuous.

6.6.2.1.2   1,28 Mcps TDD Option

The mask defined in Table 6.3A to 6.6A may be mandatory in certain regions. In other regions this mask may not be applied.

For regions where this clause applies, the requirement shall be met by a base station transmitting on a single RF carrier configured in accordance with the manufacturer's specification. Emissions shall not exceed the maximum level specified in table 6.3A to 6.6A for the appropriate BS maximum output power, in the frequency range from Δf = 0.8 MHz to Δf $_{max}$ from the carrier frequency, where:

- Δf is the separation between the carrier frequency and the nominal -3dB point of the measuring filter closest to the carrier frequency.

- f_offset is the separation between the carrier frequency and the center frequency of the measuring filter.- f_offset$_{max}$ is either 4 MHz or the offset to the UMTS Tx band edge as defined in section 5.2, whichever is the greater.

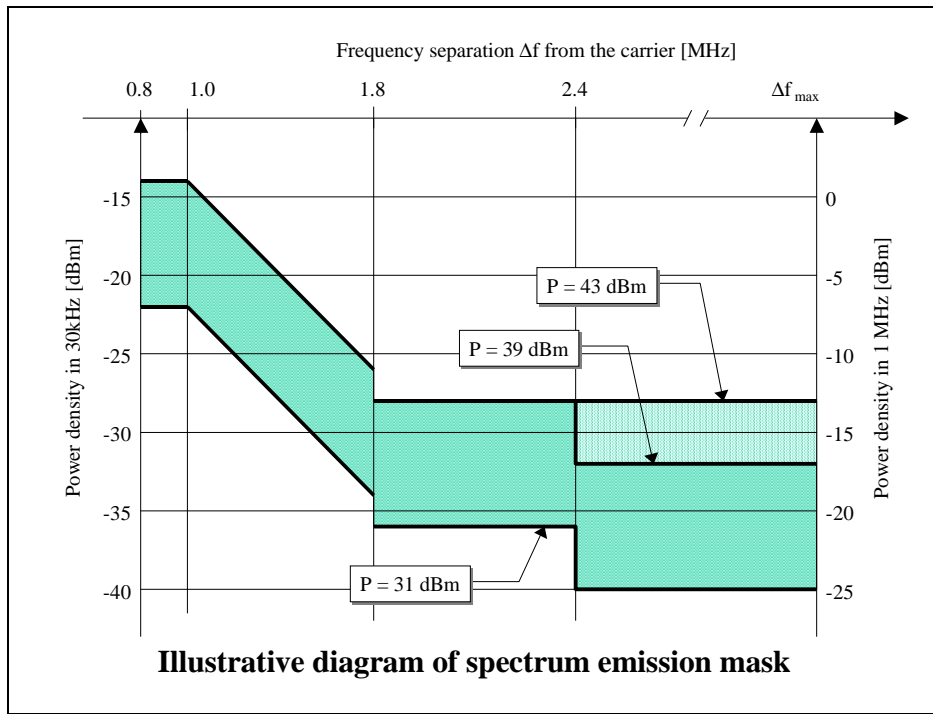- Δf $_{max}$ is equal to f_offset$_{max}$ minus half of the bandwidth of the mesurement filter.

Figure 6.2A

Table 6.3A: Spectrum emission mask values, BS maximum output power P $\geq$ 43 dBm

Frequency offset of measurement filter – 3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
0.8 $\leq \Delta f$ < 1.0 MHz	0.815MHz $\leq$ f_offset < 1.015MHz	-14 dBm	30 kHz
1.0 $\leq \Delta f$ < 1.8 MHz	1.015MHz $\leq$ f_offset < 1.815MHz	- 14 - 15·(f_offset – 1.015) dBm	30 kHz
See note	1.815MHz $\leq$ f_offset < 2.3MHz	-28 dBm	30 kHz
1.8 $\leq \Delta f$ MHz	2.3MHz $\leq$ f_offset < f_offset$_{max}$	-13 dBm	1 MHz

Table 6.4A: Spectrum emission mask values, BS maximum output power 39 $\leq$ P < 43 dBm

Frequency offset of measurement filter – 3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
0.8 $\leq \Delta f$ < 1.0 MHz	0.815MHz $\leq$ f_offset < 1.015MHz	-14 dBm	30 kHz
1.0 $\leq \Delta f$ < 1.8 MHz	1.015MHz $\leq$ f_offset < 1.815MHz	-14 - 15·(f_offset – 1.015) dBm	30 kHz
1.8 $\leq \Delta f$ < 2.4 MHz	1.815MHz $\leq$ f_offset < 2.415MHz	-28 dBm	30 kHz
See note	2.415MHz $\leq$ f_offset < 2.9MHz	P-71 dBm	30 kHz
2.4 $\leq \Delta f$ MHz	2.9MHz $\leq$ f_offset < f_offset$_{max}$	P - 56 dBm	1 MHz

Table 6.5A: Spectrum emission mask values, BS maximum output power 31 $\leq$ P < 39 dBm

Frequency offset of measurement filter – 3dB point,Δf	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
0.8 $\leq \Delta f$ < 1.0 MHz	0.815MHz $\leq$ f_offset < 1.015MHz	P - 53 dBm	30 kHz
1.0 $\leq \Delta f$ < 1.8 MHz	1.015MHz $\leq$ f_offset < 1.815MHz	P - 53 - 15·(f_offset – 1.015) dBm	30 kHz
1.8 $\leq \Delta f$ < 2.4 MHz	1.815MHz $\leq$ f_offset < 2.415MHz	P - 67 dBm	30 kHz
See note	2.415MHz $\leq$ f_offset < 2.9MHz	P - 71 dBm	30 kHz
2.4 $\leq \Delta f$ MHz	2.9MHz $\leq$ f_offset < f_offset$_{max}$	P - 56 dBm	1 MHz

Table 6.6A: Spectrum emission mask values, BS maximum output power P < 31 dBm

Frequency offset of measurement filter – 3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
0.8 $\leq \Delta f$ < 1.0 MHz	0.815MHz $\leq$ f_offset < 1.015MHz	-22 dBm	30 kHz
1.0 $\leq \Delta f$ < 1.8 MHz	1.015MHz $\leq$ f_offset < 1.815MHz	-22 - 15·(f_offset – 1.015) dBm	30 kHz
1.8 $\leq \Delta f$ < 2.4 MHz	1.815MHz $\leq$ f_offset < 2.415MHz	-36 dBm	30 kHz
See note	2.415MHz $\leq$ f_offset < 2.9MHz	-40 dBm	30 kHz
2.4 $\leq \Delta f$ MHz	2.9MHz $\leq$ f_offset < f_offset$_{max}$	-25 dBm	1 MHz

NOTE: This frequency range ensures that the range of values of f_offset is continuous.

CR-Form-v5

CHANGE REQUEST

| ⌘ | **25.104** CR **113** | ⌘ | ev **1** | ⌘ | Current version: **5.1.0** | ⌘ |

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

Proposed change affects: ⌘   (U)SIM ☐   ME/UE ☐   Radio Access Network **X**   Core Network ☐

Title: ⌘	Correction to units in Spectrum emission mask	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI5	***Date:*** ⌘ 1/2/2002

Category: ⌘ **F**

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

Release: ⌘ Rel-5

Use <u>one</u> of the following releases:
2   (GSM Phase 2)
R96   (Release 1996)
R97   (Release 1997)
R98   (Release 1998)
R99   (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘	The formula for calculating the spectrum emission mask minimum requirement makes incorrect use of units, some units defining the range of Δf are missing and the upper limit for Δf is missing.
Summary of change: ⌘	The usage of units is corrected. The upper limit for Δf is added (Δf_{max}).
Consequences if not approved: ⌘	The requirement is incorrectly specified leading to potential problems with Spectrum Emission Mask interpretation.

Clauses affected: ⌘	6.6.2.1

Other specs Affected: ⌘	☐ Other core specifications ⌘	
	X Test specifications	25.141
	☐ 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/3G_Specs/CRs.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.
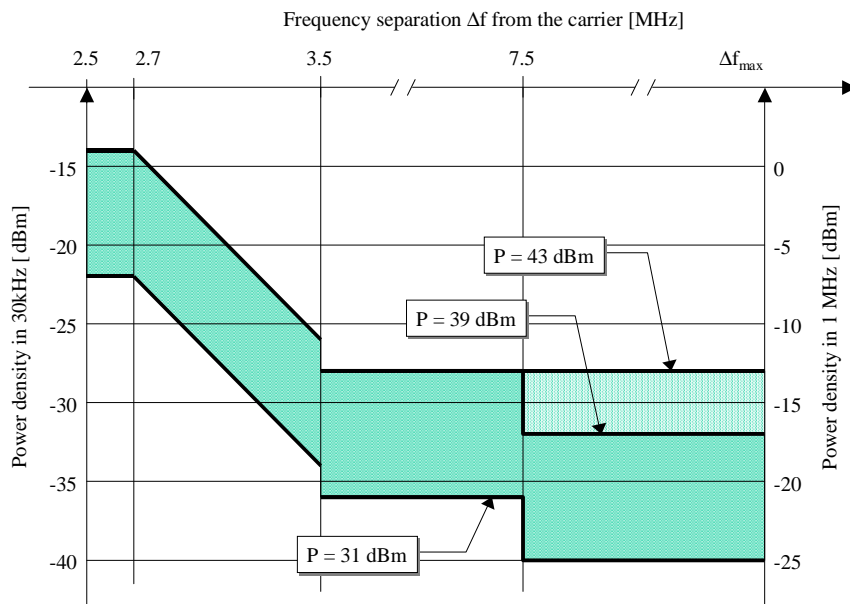
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.6.2.1 Spectrum emission mask

The mask defined in Tables 6.3 to 6.6 below may be mandatory in certain regions. In other regions this mask may not be applied.

For regions where this clause applies, the requirement shall be met by a base station transmitting on a single RF carrier configured in accordance with the manufacturer's specification. Emissions shall not exceed the maximum level specified in tables 6.3 to 6.6 for the appropriate BS maximum output power, in the frequency range from Δf = 2.5 MHz to Δf_{max} from the carrier frequency, where:

- Δf is the separation between the carrier frequency and the nominal -3dB point of the measuring filter closest to the carrier frequency.

- F_offset is the separation between the carrier frequency and the centre of the measuring filter.

- f_offset$_{max}$ is either 12.5 MHz or the offset to the UMTS Tx band edge as defined in section 5.2, whichever is the greater.

- Δf_{max} is equal to f_offset$_{max}$ minus half of the bandwidth of the measuring filter.

Illustrative diagram of spectrum emission mask

Figure 6.2: Spectrum emission mask

Table 6.3: Spectrum emission mask values, BS maximum output power P ≥ 43 dBm

Frequency offset of measurement filter -3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Minimum requirement Band I, II, III	Additional requirements Band II *	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	-15dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	~~-14 dBm - 15 (f_offset - 2.715) dB~~ $$-14dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$$	-15dBm	30 kHz
(see note)	3.515MHz ≤ f_offset < 4.0MHz	-26 dBm	NA	30 kHz
3.5 MHz ≤ Δf ≤ Δf$_{max}$ ~~MHz~~	4.0MHz ≤ f_offset < f_offset$_{max}$	-13 dBm	NA	1 MHz
* Whichever is less power				

Table 6.4: Spectrum emission mask values, BS maximum output power 39 ≤ P < 43 dBm

Frequency offset of measurement filter -3dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Minimum requirement Band I, II, III	Additional requirements Band II *	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	-15dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	~~-14 dBm - 15 (f_offset - 2.715) dB~~ $$-14dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$$	-15dBm	30 kHz
(see note)	3.515MHz ≤ f_offset < 4.0MHz	-26 dBm	NA	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0MHz ≤ f_offset < 8.0MHz	-13 dBm	NA	1 MHz
7.5 MHz ≤ Δf ≤ Δf$_{max}$ ~~MHz~~	8.0MHz ≤ f_offset < f_offset$_{max}$	P - 56 dB	NA	1 MHz
* Whichever is less power				

Table 6.5: Spectrum emission mask values, BS maximum output power 31 ≤ P < 39 dBm

Frequency offset of measurement filter -3dB point,Δf	Frequency offset of measurement filter centre frequency, f_offset	Minimum requirement Band I, II, III	Additional requirements Band II *	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	P - 53 dB	-15dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	~~P - 53 dBm - 15 (f_offset - 2.715) dB~~ $$P - 53dB - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$$	-15dBm	30 kHz
(see note)	3.515MHz ≤ f_offset < 4.0MHz	P - 65 dB	NA	30 kHz
3.5 MHz ≤ Δf ≤ Δf < 7.5 MHz	4.0MHz ≤ f_offset < 8.0MHz	P - 52 dB	NA	1 MHz
7.5 MHz ≤ Δf ≤ Δf$_{max}$ ~~MHz~~	8.0MHz ≤ f_offset < f_offset$_{max}$	P - 56 dB	NA	1 MHz
* Whichever is less power				

Table 6.6: Spectrum emission mask values, BS maximum output power P < 31 dBm

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

NOTE: This frequency range ensures that the range of values of f_offset is continuous.

CR-Form-v5

CHANGE REQUEST

⌘   **25.104** CR **105**   ⌘**rev** **2** ⌘   Current version: **5.1.0** ⌘

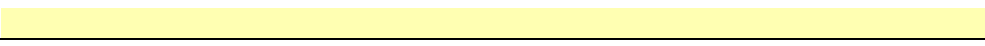*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘   (U)SIM ☐   ME/UE ☐   Radio Access Network **X**   Core Network ☐

Title: ⌘	Correction of reference measurement channel for 2048 kbps	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI5	**Date:** ⌘ 1/2/2002
Category: ⌘	**F**	**Release:** ⌘ Rel-5

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

Use <u>one</u> of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change: ⌘	The Code block size of 494703 is incorrect, it should be 493911.
	Transport Block size = 4096
	Transport Block set size = 4096*40 = 163840
	CRC size = 16
	Number of bits after transport block concatenation = (4096 + 16) * 40 = 164480
	Maximum code block size = 5114
	Number of code blocks = ceil(164480 / 5114) = ceil(32.163) = 33
	=> Code block size = ceil(164480 / 33) = ceil(4984.2) = 4985
	Each Code block will consist of (R=1/3 and 12 tailbits)
	3 * 4985 + 12 = 14967 bits
	All code blocks together are 33 * 14967 = **493911** bits
	Each radio frame is ceil(493911/8) = **61739** bits.
	The amount of puncturing is 7% for the scheme. This is also corrected in Table A.1 for the 384 kbps channel, where the DCCH was stated to have 18% puncturing while it should be 17%.
Summary of change: ⌘	Size of encoded data blocks and radio frame changed for DTCH, plus puncturing rate.
Consequences if not approved: ⌘	The reference measurement channel for 2048 will be inconsistent with physical layer specifications in TS 25.212.

Clauses affected: ⌘	A.1, A.6

Other specs affected: ⌘	☐ Other core specifications ⌘	
	X Test specifications	TS 25.141
	☐ O&M Specifications	

Other comments: ⌘

Annex A (normative): Measurement channels

A.1 Summary of UL reference measurement channels

The parameters for the UL reference measurement channels are specified in Table A.1 and the channel coding is detailed in figure A.2 through A.6 respectively. Note that for all cases, one DPCCH shall be attached to DPDCH(s).

Table A.1: Reference measuremet channels for UL DCH

Parameter		DCH for DTCH / DCH for DCCH					Unit
DPDCH	Information bit rate	12.2/2.4	64/2.4	144/2.4	384/2.4	2048/2.4	kbps
	Physical channel	60/15	240/15	480/15	960/15	960/15	kbps
	Spreading factor	64	16	8	4	4	
	Repetition rate	22/22	19/19	8/9	-18/-17~~18~~	~~-1/-1~~-7/-7	%
	Interleaving	20	40	40	40	80	ms
	Number of DPDCHs	1	1	1	1	6	
DPCCH	Dedicated pilot	6					bit/slot
	Power control	2					bit/slot
	TFCI	2					bit/slot
	Spreading factor	256					
Power ratio of DPCCH/DPDCH		-2.69	-5.46	-9.54	-9.54	-9.54	dB
Amplitude ratio of DPCCH/DPDCH		0.7333	0.5333	0.3333	0.3333	0.3333	

A.6 UL reference measurement channel for 2048 kbps

The parameters for the UL reference measurement channel for 2048 kbps are specified in Table A.6 and the channel coding is detailed in Figure A.6.
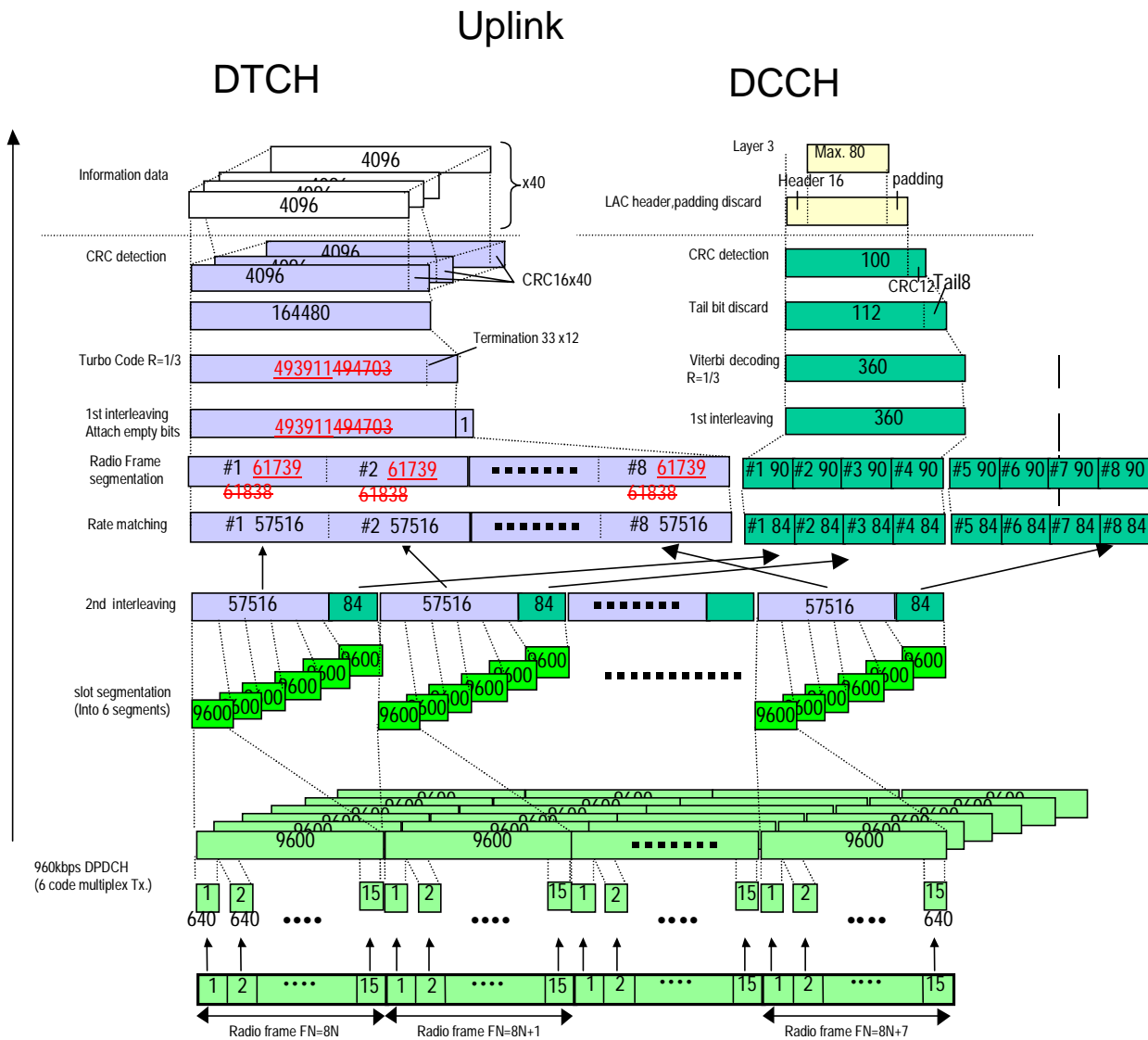

Figure A.6: Channel coding for the UL reference measurement channel (2048 kbps)

Table A.6: UL reference measurement channel (2048kbps)

Parameter	Level	Unit
Information bit rate	2048	Kbps
DPCH	960	Kbps
Power control	Off	
TFCI	On	
Puncturing	17	%