Title:		**CRs (Rel-5) for WI "Low Chip Rate TDD RF Radio Transmission/ Reception , System Performance Requirements and Conformance Testing"**
Source:		**TSG RAN WG4**
Agenda Item:		**9.1.1**

RAN4 Tdoc	Spec	CR	Rev	Phase	Title	Cat	Curr Ver	New Ver
R4-020382	25.142	111		Rel-5	Correction to units in Spectrum emission mask for 1.28 Mcps TDD option	F	4.4.0	5.0.0
R4-020381	25.105	108		Rel-5	Correction to units in Spectrum emission mask for 1.28 Mcps TDD option	F	4.4.0	5.0.0

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.105** CR **108** | ⌘ | ᴿev | **-** | ⌘ | 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 for 1.28 Mcps TDD option	
Source: ⌘	RAN WG4	
Work item code: ⌘	LCRTDD-RF	***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: ⌘	6.6.2.1.2

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.
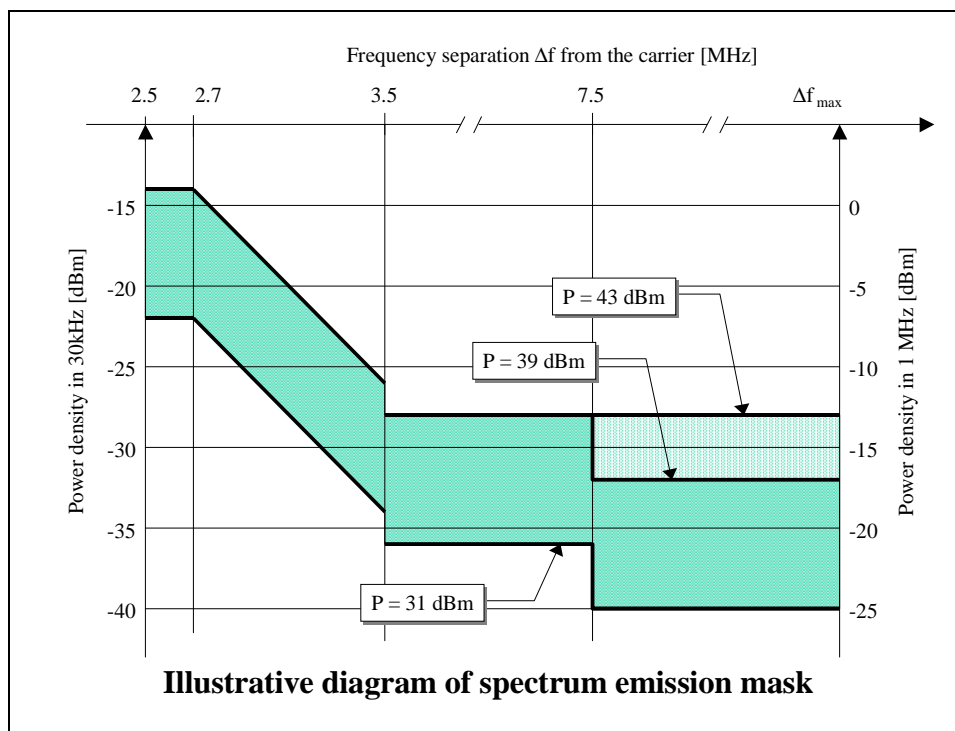

Figure 6.2

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 ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	30 kHz
2.7 ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	- 14 - 15·(f_offset - 2.715) dBm	30 kHz
(see note)	3.515MHz ≤ f_offset < 4.0MHz	-26 dBm	30 kHz
3.5 ≤ Δf 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 ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	30 kHz
2.7 ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	-14 - 15·(f_offset - 2.715) dBm	30 kHz
(see note)	3.515MHz ≤ f_offset < 4.0MHz	-26 dBm	30 kHz
3.5 ≤ Δf < 7.5 MHz	4.0MHz ≤ f_offset < 8.0MHz	-13 dBm	1 MHz
7.5 ≤ Δf MHz	8.0MHz ≤ f_offset < f_offset$_{max}$	P - 56 dBm	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 ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	P - 53 dBm	30 kHz
2.7 ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	P - 53 - 15·(f_offset - 2.715) dBm	30 kHz
(see note)	3.515MHz ≤ f_offset < 4.0MHz	P - 65 dBm	30 kHz
3.5 ≤ Δf < 7.5 MHz	4.0MHz ≤ f_offset < 8.0MHz	P - 52 dBm	1 MHz
7.5 ≤ Δf MHz	8.0MHz ≤ f_offset < f_offset$_{max}$	P - 56 dBm	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 ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-22 dBm	30 kHz
2.7 ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	-22 - 15·(f_offset - 2.715) dBm	30 kHz
(see note)	3.515MHz ≤ f_offset < 4.0MHz	-34 dBm	30 kHz
3.5 ≤ Δf < 7.5 MHz	4.0MHz ≤ f_offset < 8.0MHz	-21 dBm	1 MHz
7.5 ≤ Δf 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.

Illustrative diagram of spectrum emission mask
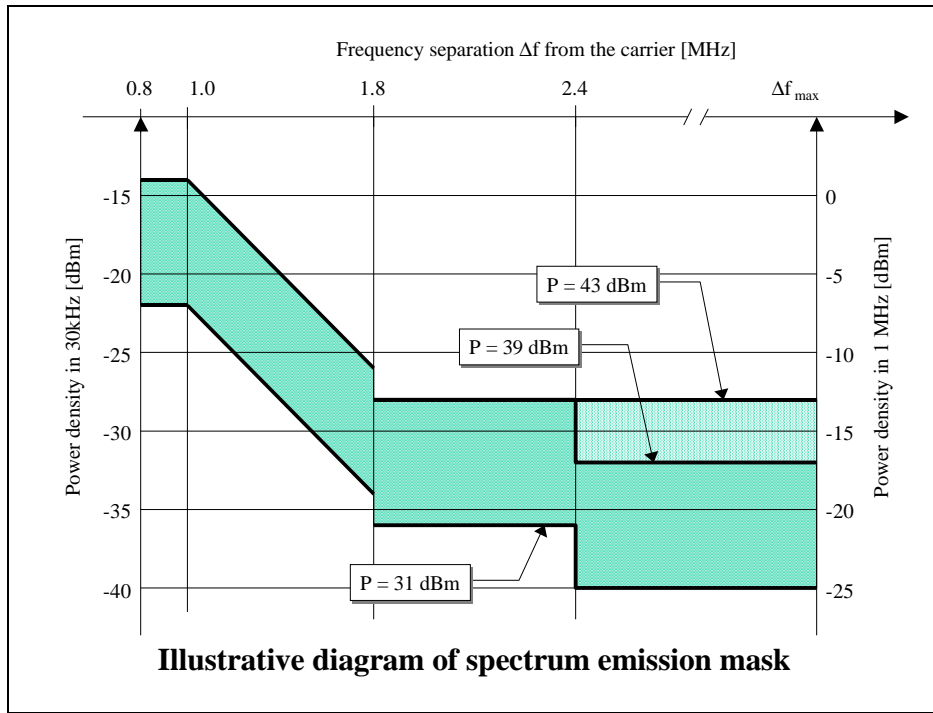
Figure 6.2A

Table 6.3A: 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
0.8 MHz ≤ Δf < 1.0 MHz	0.815MHz ≤ f_offset < 1.015MHz	-14 dBm	30 kHz
1.0 MHz ≤ Δf < 1.8 MHz	1.015MHz ≤ f_offset < 1.815MHz	~~– 14 - 15 (f_offset – 1.015) dBm~~ $$-14dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 1.015 \right) dB$$	30 kHz
See note	1.815MHz ≤ f_offset < 2.3MHz	-28 dBm	30 kHz
1.8 MHz ≤ Δf ≤ Δf_max ~~MHz~~	2.3MHz ≤ f_offset < f_offset_max	-13 dBm	1 MHz

Table 6.4A: 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
0.8 MHz ≤ Δf < 1.0 MHz	0.815MHz ≤ f_offset < 1.015MHz	-14 dBm	30 kHz
1.0 MHz ≤ Δf < 1.8 MHz	1.015MHz ≤ f_offset < 1.815MHz	~~-14 - 15 (f_offset – 1.015) dBm~~ $$-14dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 1.015 \right) dB$$	30 kHz
1.8 MHz ≤ Δf < 2.4 MHz	1.815MHz ≤ f_offset < 2.415MHz	-28 dBm	30 kHz
See note	2.415MHz ≤ f_offset < 2.9MHz	P - 71 dB~~m~~	30 kHz
2.4 MHz ≤ Δf ≤ Δf_max ~~MHz~~	2.9MHz ≤ f_offset < f_offset_max	P - 56 dB~~m~~	1 MHz

Table 6.5A: 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
0.8 MHz ≤ Δf < 1.0 MHz	0.815MHz ≤ f_offset < 1.015MHz	P - 53 dB~~m~~	30 kHz
1.0 MHz ≤ Δf < 1.8 MHz	1.015MHz ≤ f_offset < 1.815MHz	~~P - 53 - 15 (f_offset – 1.015) dBm~~ $$P - 53dB - 15 \cdot \left(\frac{f\_offset}{MHz} - 1.015 \right) dB$$	30 kHz
1.8 MHz ≤ Δf < 2.4 MHz	1.815MHz ≤ f_offset < 2.415MHz	P - 67 dB~~m~~	30 kHz
See note	2.415MHz ≤ f_offset < 2.9MHz	P - 71 dB~~m~~	30 kHz
2.4 MHz ≤ Δf ≤ Δf_max ~~MHz~~	2.9MHz ≤ f_offset < f_offset_max	P - 56 dB~~m~~	1 MHz

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

Frequency offset of measurement filter –3dB point,	Frequency offset of measurement filter centre frequency,	Maximum level	Measurement bandwidth

Δf	f_offset		
0.8 MHz ≤ Δf < 1.0 MHz	0.815MHz ≤ f_offset < 1.015MHz	-22 dBm	30 kHz
1.0 MHz ≤ Δf < 1.8 MHz	1.015MHz ≤ f_offset < 1.815MHz	~~-22 - 15 (f_offset - 1.015) dBm~~ $$-22dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 1.015 \right) dB$$	30 kHz
1.8 MHz ≤ Δf < 2.4 MHz	1.815MHz ≤ f_offset < 2.415MHz	-36 dBm	30 kHz
See note	2.415MHz ≤ f_offset < 2.9MHz	-40 dBm	30 kHz
2.4 MHz ≤ Δf ≤ Δf$_{max}$ ~~MHz~~	2.9MHz ≤ 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-v4

CHANGE REQUEST

⌘   **25.142** CR **111**   ⌘ 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 for 1.28 Mcps TDD option	
Source: ⌘	RAN WG4	
Work item code: ⌘	LCRTDD-RF	***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 power results in a negative answer
Summary of change: ⌘	The correct units are used
Consequences if not approved: ⌘	The requirement is incorrectly specified leading to potential problems with Spectrum Emission Mask interpretation.

Clauses affected: ⌘	6.6.2.1.2.2, 6.6.2.1.5.2

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

Other comments: ⌘	

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/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 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 output power 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	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}	-13 dBm	1 MHz

Table 6.14: Spectrum emission mask values, BS rated 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	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 dBm	1 MHz

Table 6.15: Spectrum emission mask values, BS rated 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 dBm	30 kHz
2,715 MHz ≤ f_offset < 3,515 MHz	P – 53 - 15·(f_offset – 2,715) dBm	30 kHz
3,515 MHz ≤ f_offset < 4,0 MHz	P – 65 dBm	30 kHz
4,0 MHz ≤ f_offset < 8,0 MHz	P – 52 dBm	1 MHz
8,0 MHz ≤ f_offset < f_offset$_{max}$	P – 56 dBm	1 MHz

Table 6.16: Spectrum emission mask values, BS rated 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	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~~ $$-14dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 1.015 \right) dB$$	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~~ $$-14dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 1.015 \right) dB$$	30 kHz
1.815MHz ≤ f_offset < 2.415MHz	-28 dBm	30 kHz
2.415MHz ≤ f_offset < 2.9MHz	P-71 dB~~m~~	30 kHz
2.9MHz ≤ f_offset < f_offset$_{max}$	P - 56 dB~~m~~	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 dB~~m~~	30 kHz
1.015MHz ≤ f_offset < 1.815MHz	~~P - 53 - 15 (f_offset – 1.015) dBm~~ $$P - 53dB - 15 \cdot \left(\frac{f\_offset}{MHz} - 1.015 \right) dB$$	30 kHz
1.815MHz ≤ f_offset < 2.415MHz	P - 67 dB~~m~~	30 kHz
2.415MHz ≤ f_offset < 2.9MHz	P - 71 dB~~m~~	30 kHz
2.9MHz ≤ f_offset < f_offset$_{max}$	P - 56 dB~~m~~	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~~ $$-22dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 1.015 \right) dB$$	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 output power

**Table 6.18: Test Requirements for spectrum emission mask values,
BS rated output power PRAT $\geq$ 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	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 output power 39 $\leq$ PRAT < 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	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 dBm	1 MHz

Table 6.20: Test Requirements for spectrum emission mask values,
BS rated 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 – 51,5 dBm	30 kHz
2,715 MHz ≤ f_offset < 3,515 MHz	P – 51,5 - 15·(f_offset – 2,715) dBm	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 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	-20,5 dBm	30 kHz
2,715 MHz ≤ f_offset < 3,515 MHz	-20,5 – 15·(f_offset – 2,715) dBm	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~~ $$-12.5 dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 1.015 \right) dB$$	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~~ $$-12.5 dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 1.015 \right) dB$$	30 kHz
1.815MHz ≤ f_offset < 2.415MHz	-26.5 dBm	30 kHz
2.415MHz ≤ f_offset < 2.9MHz	P – 69.5 dB~~m~~	30 kHz
2.9MHz ≤ f_offset < f_offset$_{max}$	P – 54.5 dB~~m~~	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 dB~~m~~	30 kHz
1.015MHz ≤ f_offset < 1.815MHz	~~P – 51.5 - 15 (f_offset – 1.015) dBm~~ $$P - 51.5 dB - 15 \cdot \left(\frac{f\_offset}{MHz} - 1.015 \right) dB$$	30 kHz
1.815MHz ≤ f_offset < 2.415MHz	P – 65.5 dB~~m~~	30 kHz
2.415MHz ≤ f_offset < 2.9MHz	P – 69.5 dB~~m~~	30 kHz
2.9MHz ≤ f_offset < f_offset$_{max}$	P – 54.5 dB~~m~~	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~~ $$-20.5 dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 1.015 \right) dB$$	30 kHz
1.815MHz ≤ f_offset < 2.415MHz	-34.5 dB~~m~~	30 kHz
2.415MHz ≤ f_offset < 2.9MHz	-38.5 dB~~m~~	30 kHz

2.9MHz $\leq$ f_offset < f_offset$_{max}$	-23.5 dBm	1 MHz