

**TSG-RAN Meeting #6  
Nice, France, 13 – 15 December 1999**

***TSGRP#6(99)825***

**Title:** Revised CR 019 r2 to TS 25.104

**Source:** TSG-RAN WG4

**Agenda item:** 5.4.3

<b>TSG_DOC</b>	<b>SPEC</b>	<b>CR</b>	<b>REV</b>	<b>3G_PH</b>	<b>SUBJECT</b>	<b>CAT</b>	<b>VERS_CURR</b>	<b>VERS_NEW</b>
R4-99997	25.104	019	2	R99	Update of ITU Region 2 Specific Specifications and proposed universal channel numbering.	C	3.0.0	3.1.0



## 5.2 Frequency bands

UTRA/FDD is designed to operate in either of the following paired bands;

- (a) 1920 – 1980MHz: Up-link (Mobile transmit, base receive)  
2110 – 2170MHz: Down-link (Base transmit, mobile receive)
- (b)\* 1850 – 1910MHz: Up-link (Mobile transmit, base receive)  
1930 – 1990MHz: Down-link (Base transmit, mobile receive)

~~Note: Appropriate adjustment is required for the parameters in the specified band~~

\* Used in Region 2

Additional allocations in ITU region 2 are FFS.

Deployment in other frequency bands is not precluded.

## 5.3 Tx–Rx frequency separation

- (a) The minimum transmit to receive frequency separation is 134.8 MHz and the maximum value is 245.2 MHz ~~when operating in the paired band defined in sub-clause 5.2 (a). All~~ and all UE(s) shall support a TX –RX frequency separation of 190 MHz ~~when operating in the paired band defined in sub-clause 5.2(a).~~
- (b) UTRA/FDD can support both fixed and variable transmit to receive frequency separation.
- (c) ~~When operating in the paired band defined in sub-clause 5.2(b), all UE(s) shall support a TX – RX frequency separation of 80 MHz.~~
- ~~(e)~~(d) The use of other transmit to receive frequency separations in existing or other frequency bands shall not be precluded.

## 5.4 Channel arrangement

### 5.4.1 Channel spacing

The nominal channel spacing is 5 MHz, but this can be adjusted to optimize performance in a particular deployment scenario.

### 5.4.2 Channel raster

The channel raster is 200 kHz, which means that the center frequency must be an integer multiple of 200 kHz.

### 5.4.3 Channel number

The carrier frequency is designated by the UTRA Absolute Radio Frequency Channel Number (UARFCN). The value of the UARFCN in the IMT2000 band is defined as follows;

**Table 1: UTRA Absolute Radio Frequency Channel Number**

Uplink	$N_u = 5 * (F_{\text{uplink}} - 1885.2 \text{ MHz})$	$0.0 \text{ 1885.2 MHz} \leq F_{\text{uplink}} \leq 3276.6 \text{ MHz 2024.8 MHz}$ where $F_{\text{uplink}}$ is the uplink frequency in MHz
Downlink	$N_d = 5 * (F_{\text{downlink}} - 2075.2 \text{ MHz})$	$0.0 \text{ 2110.2 MHz} \leq F_{\text{uplinkdownlink}} \leq 3276.6 \text{ MHz 2199.8 MHz}$ where $F_{\text{downlink}}$ is the downlink frequency in MHz

### 6.6.3.2. Protection of the BS receiver

This requirement may be applied in order to prevent the receiver of the BS being desensitised by emissions from the BS transmitter which are coupled between the antennas of the BS. This is measured at the transmit antenna port.

#### 6.6.3.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

**Table 6.10: BS Spurious emissions limits for protection of the BS receiver**

Band	Maximum Level	Measurement Bandwidth	Note
1920 – 1980MHz <u>For operation in Frequency Bands defined in sub-clause 5.2(a)</u>	<del>-94</del> <u>-96</u> dBm	100 kHz	
<u>1850-1910 MHz</u> <u>For operation in Frequency Bands defined in sub-clause 5.2(b)</u>	<u>-96 dBm</u>	<u>100kHz</u>	

### 6.6.3.6 Co-existence with services in adjacent frequency bands

This requirement may be applied for the protection in bands adjacent to 2110-2170 MHz, [as defined in sub-clause 5.2\(a\)](#) and 1930-1990 MHz, [as defined in sub-clause 5.2\(b\)](#) in geographic areas in which both an adjacent band service and UTRA are deployed.

#### 6.6.3.6.1 Minimum requirement

The power of any spurious emission shall not exceed:

**Table 6.16: BS spurious emissions limits for protection of adjacent band services**

Band (f)	Maximum Level	Measurement Bandwidth	Note
2100-2105 MHz <a href="#">For operation in frequency bands as defined in sub-clause 5.2(a)</a>	$-30 + 3.4 \cdot (f - 2100 \text{ MHz}) \text{ dBm}$	1 MHz	
2175-2180 MHz <a href="#">For operation in frequency bands as defined in sub-clause 5.2(a)</a>	$-30 + 3.4 \cdot (2180 \text{ MHz} - f) \text{ dBm}$	1 MHz	
<a href="#">1920-1925 MHz</a> <a href="#">For operation in frequency bands as defined in sub-clause 5.2(b)</a>	<a href="#">-30 + 3.4 · (f – 1930 MHz) dBm</a>	<a href="#">1 MHz</a>	
<a href="#">1995-2000 MHz</a> <a href="#">For operation in frequency bands as defined in sub-clause 5.2(b)</a>	<a href="#">-30 + 3.4 · (2000 MHz – f) dBm</a>	<a href="#">1 MHz</a>	

## 7.5 Blocking characteristics

The blocking characteristics is a measure of the receiver ability to receive a wanted signal at its assigned channel frequency in the presence of an unwanted interferer on frequencies other than those of the spurious response or the adjacent channels; without this unwanted input signal causing a degradation of the performance of the receiver beyond a specified limit.

### 7.5.1 Minimum requirement

The static reference performance as specified in clause 7.2.1 should be met with a wanted and an interfering signal coupled to BS antenna input using the following parameters.

**Table 7.3(a) : Blocking performance requirement for operation in frequency bands in sub-clause 5.2(a)**

Center Frequency of Interfering Signal	Interfering Signal Level	Wanted Signal Level	Minimum Offset of Interfering Signal	Type of Interfering Signal
1920 – 1980 MHz	-40 dBm	<REFSENS> + 6 dB	10 MHz	WCDMA signal with one code
1900 – 1920 MHz 1980 – 2000 MHz	-40 dBm	<REFSENS> + 6 dB	10 MHz	WCDMA signal with one code
<1900, > 2000 MHz	-15 dBm	<REFSENS> + 6 dB	—	CW carrier

**Table 7.3(b) : Blocking performance requirement for operation in frequency bands in sub-clause 5.2(b)**

<u>Center Frequency of Interfering Signal</u>	<u>Interfering Signal Level</u>	<u>Wanted Signal Level</u>	<u>Minimum Offset of Interfering Signal</u>	<u>Type of Interfering Signal</u>
<u>1850 – 1910 MHz</u>	<u>- 40 dBm</u>	<u>&lt;REFSENS&gt; + 6dB</u>	<u>10 MHz</u>	<u>WCDMA signal with one code</u>
<u>1830 – 1850 MHz</u> <u>1910 – 1930 MHz</u>	<u>-40 dBm</u>	<u>&lt;REFSENS&gt; + 6dB</u>	<u>10 MHz</u>	<u>WCDMA signal with one code</u>
<u>1 MHz – 1830 MHz</u> <u>1930 MHz – 12750 MHz</u>	<u>-15 dBm</u>	<u>&lt;REFSENS&gt; + 6dB</u>	<u>—</u>	<u>CW carrier</u>