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Technical Report

3rd Generation Partnership Project; Technical Specification Group TSG RAN; UMTS 2.6 GHz TDD Work Item Technical Report (Release 7)



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Postal address

3GPP support office address

650 Route des Lucioles - Sophia Antipolis
Valbonne - FRANCE
Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Internet

<http://www.3gpp.org>

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Foreword

This Technical Report has been produced by the 3rd Generation Partnership Project (3GPP).

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1 Scope

This document is the technical report of the UMTS 2.6 GHz TDD WI which was approved in the TSG RAN meeting #26, Athens, Greece [1]. The purpose of this TR is to summarise the radio requirements of UTRA TDD Base Station and UE for transmission and reception. Co-existence with IMT2000 technologies within the 2500 – 2690 MHz band is included in this document.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] RP-040453, "WI proposal for UMTS 2600 MHz TDD Option".
- [2] RP-040394, "CEPT bandplan for IMT-2000 in the 2500-2690 MHz band."
- [3] 3GPP TR25.942, "Radio Frequency (RF) System Scenarios."
- [4] 3GPP TR25.889, "Feasibility Study considering the viable deployment of UTRA in additional and diverse spectrum arrangements."
- [5] TR25.810, "UMTS 2.6 GHz (FDD) Work Item Technical Report."
- [6] ECC REPORT 45, "Sharing and Adjacent Band Compatibility between UMTS/IMT-2000 in the band 2500-2690 MHz and Other Services"

3 Definitions, symbols and abbreviations

3.1 Definitions

Void

3.2 Symbols

Void

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

WCDMA	Wideband Code Division Multiple Access, a type of cellular system meeting ITU-2000 requirement
UMTS	Universal Mobile Telecommunications System, often used synonymously with WCDMA
GSM	Mobile cellular system (throughout this document, this acronym is generally to also mean the services GPRS and EDGE, both enhancements to GSM, unless not applicable to the discussion.)
UE	User Equipment, also cellular terminal

BS

Cellular system base station

4 CEPT Band Plan for IMT-2000 in the 2500-2690 MHz

This Work Item [1] is based on the 15th meeting (September 2004) ECC PT1 draft decision on the harmonized use of the spectrum band 2500 – 2690MHz for IMT2000/UMTS was completed [2]. This decision defined paired bands for FDD (internal) operation and a central gap for use with either TDD or FDD (external) downlink as shown in Figure 4.1.

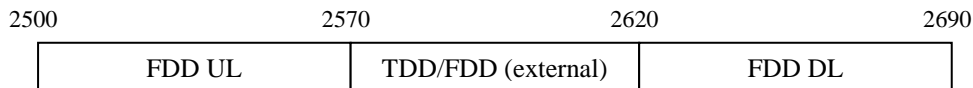


Figure 4.1: IMT-2000/UMTS 2500-2690 MHz band operations.

The key features of the draft ECC Decision is summarised as follows:

- 1) The frequency band 2500-2570 MHz is paired with 2620-2690 MHz, with the mobile transmit within the lower band and base transmit within the upper band for FDD.
- 2) The frequency band 2570-2620 MHz is designated for either TDD or FDD downlink (external). There will be no mixed TDD and FDD downlink (external) deployment within the same geographical area.
- 3) Assigned blocks will be in multiples of 5 MHz, with the boundaries on integer multiples of 5 MHz
- 4) The frequencies of the boundaries of the central gap TDD blocks is not defined, because this will depend on the size of guard band needed between FDD and TDD and they will be decided by national regulatory bodies and shall be taken within the band 2570-2620 MHz.
- 5) It is highly desired these guard bands are minimised taking into account effective utilisation of spectrum and equipment cost and complexity.

This WI is applicable for operations in Region 1.

5 RF Requirements

5.1 Simulation Results and RF Requirements

The requirements for operations in 1.9 GHz TDD have been determined by system simulations performed at 2 GHz models in TR25.942 [3]. As described in [4], the differences in 2.6 GHz and 2 GHz are expected to scale as a continuous function of frequency and the basic modelling assumptions concerning radio propagation developed for 2 GHz band can be re-used. The use of 2.6 GHz TDD operations will experience an increased path loss compared to the UMTS core band of about 3.1 dB (operation in 2025 MHz) to 4 dB (operation in 1900 MHz). Therefore, the simulations performed and the resultant RF requirements (e.g. ACLR/ACS) in TR25.942 [3] are applicable and can be re-used for operations in 2.6 GHz band.

For the propagation conditions in 2.6 GHz TDD operation, it is proposed to employ velocity scaling technique on the multipath fading channels described in Annex B of TS25.102 and TS25.105.

5.1A RF requirement for 1.28Mcps TDD

As described in [4], the differences in 2.6 GHz and 2 GHz are expected to scale as a continuous function of frequency and the basic modelling assumptions concerning radio propagation developed for 2 GHz band can be re-used. The use of 2.6 GHz TDD operations will experience an increased path loss compared to the UMTS core band of about 3.1 dB

(operation in 2025 MHz) to 4 dB (operation in 1900 MHz). Therefore, the requirements of core band are applicable and can be re-used for 1.28Mcps TDD operating in 2.6 GHz band.

For the propagation conditions in 2.6 GHz 1.28Mcps TDD operation, it is proposed to employ velocity scaling technique on the multipath fading channels described in Annex B of TS25.102 and TS25.105.

5.2 Channel Raster

The frequency boundaries of the TDD band are dependent upon the guardbands needed between FDD and TDD and hence are up to national regulatory bodies [2]. However, there will be 10 potential additional channels (and UARFCNs) for 3.84 Mcps system, with carrier frequency of $(n \times 200 + 100)$ kHz [2], in addition to the fundamental 200 kHz channel raster for 2.6 GHz band.

5.3 Coexistence with IMT-2000 systems within 2.6 GHz band

5.3.1 Coexistence with IMT-2000 FDD in VII

Transmission of TDD BS is expected to operate close (at least 5 MHz) to FDD Uplink operations in 2.6 GHz band. In the core band (1900 MHz), the TDD BS is designed to operate adjacent to the FDD Uplink operations. Since there is likely to be a frequency separation between FDD Uplink and TDD operations in 2.6 GHz, the stringent requirements for TDD BS in the core band is more than sufficient to protect the FDD BS receivers.

The requirements are described in Section 5.5 and 5.6.

5.3.2 Coexistence with Unsynchronized TDD operating in 2.6 GHz band

The RF requirements for coexistence with Unsynchronized TDD are studied in TR25.942 [2] for the core band. Hence, the same requirements shall be used in the 2.6 GHz band.

The requirements are described in Section 5.5 and 5.6.

5.3.3 Coexistence with CDMA2000

As described in TR25.810 [5], co-existence between UMTS (FDD) and CDMA2000 is feasible in 2.6 GHz band. Since the CDMA2000 RF requirements are a subset of UMTS (FDD) Band I requirements, the existing UMTS TDD core band should enable co-existence with CDMA2000. Hence, the RF requirements in the UMTS TDD core band can be re-used in 2.6 GHz here and no additional changes are required in the specifications (TS25.105).

5.4 Coexistence with adjacent services

It is proposed to use the same spurious emission and blocking requirements developed in TS25.102 and TS25.105 for coexistence with adjacent services namely, IMT-2000 FDD in Band I and III, IMT-2000 TDD in 1.9 and 2 GHz bands and GSM900/1800.

5.4.1 Coexistence with IMT-2000 FDD in Band I and III

The requirements are described in Section 5.5 and 5.6.

5.4.2 Coexistence with IMT-2000 TDD in 1.9 and 2 GHz bands

The requirements are described in Section 5.5 and 5.6.

5.4.3 Coexistence with GSM900 and GSM1800

The requirements are described in Section 5.5 and 5.6.

5.4.4 Coexistence with Other Services

ECC REPORT 45 [6] has studied compatibility of IMT-2000 FDD with adjacent services:

- a) MSS in 2500 – 2520 / 2670 – 2690 MHz
- b) Radio Astronomy Services in 2690-2700 MHz
- c) MMDS within the 2.6 GHz band

Case a) is no longer relevant, as the whole frequency band 2500 – 2690 MHz is designated for terrestrial IMT-2000/UMTS systems.

As to case b), [2] noted that co-ordination might be required on a national basis to protect the Radio astronomy Service. The number of radio astronomy stations in Europe, operating in this frequency band, is about 10. This may result in exclusion zones around the RA sites, where any IMT-2000 emissions are forbidden.

Case c) is specific to a few European countries, which use MMDS. Co-ordination to control co- and adjacent channel interference with IMT-2000 may be required in some geographical areas; this will be done on a national basis.

Based on this, no general additional requirements to protect adjacent services are foreseen for UMTS2600

5.5 Specific Node B requirements for UMTS2600

5.5.1 Node B Transmitter Characteristics

It is proposed to use the same simulation results evaluated for 1.9 GHz TDD in Section 5.1. Since these results directly determine the RF requirements, it is proposed that the same minimum RF requirements in the core band are reused as the minimum RF requirements for operations in 2.6 GHz band.

The additional RF requirements to support co-existence with Unsynchronised TDD and FDD are described in the following sub-sections.

5.5.1.1 Requirements to support co-existence with Unsynchronised TDD

As described in Section 5.3.2, it is proposed to use the same RF requirements for coexistence with Unsynchronised TDD.

5.5.1.1.1 Adjacent Channel Leakage Power Ratio (ACLR)

The ACLR power limits for operation with the same geographical area with unsynchronized TDD on adjacent channels are defined in Table 6.8 and Table 6.9 of TS25.105 respectively. These requirements are reused in 2.6 GHz TDD operations. Since these ACLR requirements are applicable to all TDD bands operations, no changes are required in TS25.105.

5.5.1.1.2 Spurious Emission

The RF requirements for co-existence with unsynchronised TDD in same geographical area and co-location BS are described in the form of a text changes to TS25.105 in Section 5.5.1.1.2.1 and 5.5.1.1.2.2 respectively. These changes are highlighted in yellow in the following sub-sections:

5.5.1.1.2.1 Proposed Changes to TS25.105 for Co-existence with Unsynchronised TDD in same geographical area

6.6.3.5.2.1.1 3,84 Mcps TDD option

The RRC filtered mean power of any spurious emission shall not exceed the limits specified in table 6.18.

Table 6.18: BS Spurious emissions limits for operation in same geographic area with unsynchronised TDD

BS Class	Band	Maximum Level	Measurement Bandwidth
Wide Area BS	1900 – 1920 MHz	–39 dBm	3,84 MHz
Wide Area BS	2010 – 2025 MHz	–39 dBm	3,84 MHz
Wide Area BS	2570 – 2620 MHz	–39 dBm	3,84 MHz
Local Area BS	1900 – 1920 MHz	–36 dBm	3,84 MHz
Local Area BS	2010 – 2025 MHz	–36 dBm	3,84 MHz
Local Area BS	2570 – 2620 MHz	–36 dBm	3,84 MHz

5.5.1.1.2.2 Proposed Changes to TS25.105 for Co-location with Unsynchronised TDD

The RRC filtered mean power of any spurious emission in case of co-location shall not exceed the limits specified in table 6.21.

Table 6.21: BS Spurious emissions limits for co-location with unsynchronised TDD

BS Class	Band	Maximum Level	Measurement Bandwidth
Wide Area BS	1900 – 1920 MHz	–76 dBm	3,84 MHz
Wide Area BS	2010 – 2025 MHz	–76 dBm	3,84 MHz
Wide Area BS	2570 – 2620 MHz	–76 dBm	3,84 MHz
Local Area BS	1900 – 1920 MHz	–36 dBm	3,84 MHz
Local Area BS	2010 – 2025 MHz	–36 dBm	3,84 MHz
Local Area BS	2570 – 2620 MHz	–36 dBm	3,84 MHz

NOTE: The requirements in Table 6.21 for the Wide Area BS are based on a minimum coupling loss of 30 dB between unsynchronised TDD base stations. The requirements in Table 6.21 for the Local Area BS are based on a minimum coupling loss of 45 dB between unsynchronised Local Area base stations. The co-location of different base station classes is not considered.

5.5.1.2 Requirements to support co-existence with IMT-2000 FDD

As described in Section 5.3.1, it is proposed to reuse the RF requirements in the core band for operations in 2.6 GHz band. The ACLR and Spurious Emission are described in the Sections 5.5.1.2.1 and 5.5.1.2.2 respectively.

5.5.1.2.1 Adjacent Channel Leakage Power Ratio (ACLR)

For co-existence with UTRA FDD in the same geographical area, the 1st and 2nd ACLR shall not exceed -36 dBm/3.84 MHz for Wide Area BS and -22 dBm/3.84 MHz and -33 dBm/3.84 MHz for 1st and 2nd ACLR respectively for Local Area BS. These requirements are already described in TS25.105 (Table 6.8AA) for all bands and hence no change is required for ACLR in TS25.105.

5.5.1.2.2 Spurious Emission

The RF requirements for co-existence with UTRA-FDD in the same geographical area and for co-location BS are proposed in the form of text changes to TS25.105 in the Sections 5.5.1.2.2.1 and 5.5.1.2.2.2 respectively. The changes are highlighted in yellow.

5.5.1.2.2.1 Proposed Changes to TS25.105 for Co-existence with UTRA FDD in same geographical area

6.6.3.4.1 Operation in the same geographic area

This requirement may be applied to geographic areas in which both UTRA-TDD and UTRA-FDD are deployed.

6.6.3.4.1.1 Minimum Requirement

For TDD base stations which use carrier frequencies within the band 2010 – 2025 MHz the requirements applies at all frequencies within the specified frequency bands in table 6.16. For 3.84 Mcps TDD option base stations which use a

carrier frequency within the band 1900-1920 MHz, the requirement applies at frequencies within the specified frequency range which are more than 12,5 MHz above the last carrier used in the frequency band 1900-1920 MHz. For 1.28 Mcps TDD option base stations which use carrier frequencies within the band 1900-1920 MHz, the requirement applies at frequencies within the specified frequency range which are more than 4 MHz above the last carrier used in the frequency band 1900-1920 MHz.

The power of any spurious emission shall not exceed:

Table 6.16: BS Spurious emissions limits for BS in geographic coverage area of UTRA-FDD

BS Class	Band	Maximum Level	Measurement Bandwidth
Wide Area BS	1920 – 1980 MHz	-43 dBm (*)	3,84 MHz
Wide Area BS	2110 – 2170 MHz	-52 dBm	1 MHz
Wide Area BS	2500 – 2570 MHz	-43 dBm(**)	3,84 MHz
Wide Area BS	2620 – 2690 MHz	-52 dBm	1 MHz
Local Area BS	1920 – 1980 MHz	-40 dBm (*)	3,84 MHz
Local Area BS	2110 – 2170 MHz	-52 dBm	1 MHz
Local Area BS	2500 – 2570 MHz	-40 dBm(**)	3,84 MHz
Local Area BS	2620 – 2690 MHz	-52 dBm	1 MHz
NOTE*	For 3.84 Mcps TDD option base stations which use carrier frequencies within the band 1900 – 1920 MHz, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922.6 MHz or 15 MHz above the last TDD carrier used, whichever is higher. For 1.28 Mcps TDD option base stations which use carrier frequencies within the band 1900 – 1920 MHz, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922.6 MHz or 6.6 MHz above the last TDD carrier used, whichever is higher.		
NOTE**	For 3.84 Mcps TDD option base stations which use carrier frequencies within the band 2570 – 2620 MHz, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 2567.5 MHz or 15 MHz below the last TDD carrier used, whichever is lower.		

NOTE: The requirements for Wide Area BS in Table 6.16 are based on a coupling loss of 67dB between the TDD and FDD base stations. The requirements for Local Area BS in Table 6.16 are based on a coupling loss of 70 dB between TDD and FDD Wide Area base stations. The scenarios leading to these requirements are addressed in TR 25.942 [4].

5.5.1.2.2.2 Proposed Changes to TS25.105 for Co-location with UTRA-FDD

6.6.3.4.2 Co-located base stations

This requirement may be applied for the protection of UTRA-FDD BS receivers when UTRA-TDD BS and UTRA FDD BS are co-located.

6.6.3.4.2.1 Minimum Requirement

For TDD base stations which use carrier frequencies within the band 2010 – 2025 MHz the requirements applies at all frequencies within the specified frequency bands in table 6.17. For 3.84 Mcps TDD option base stations which use a carrier frequency within the band 1900-1920 MHz, the requirement applies at frequencies within the specified frequency range which are more than 12,5 MHz above the last carrier used in the frequency band 1900-1920 MHz. For 1.28 Mcps TDD option base stations which use carrier frequencies within the band 1900-1920 MHz, the requirement applies at frequencies within the specified frequency range which are more than 4 MHz above the last carrier used in the frequency band 1900-1920 MHz.

The power of any spurious emission shall not exceed:

Table 6.17: BS Spurious emissions limits for BS co-located with UTRA-FDD

BS Class	Band	Maximum Level	Measurement Bandwidth
Wide Area BS	1920 – 1980 MHz	-80 dBm (*)	3,84 MHz
Wide Area BS	2110 – 2170 MHz	-52 dBm	1 MHz
Wide Area BS	2500 – 2570 MHz	-80 dBm(**)	3.84 MHz
Wide Area BS	2620 – 2690 MHz	-52 dBm	1 MHz
NOTE *	For 3.84 Mcps TDD option base stations which use carrier frequencies within the band 1900 – 1920 MHz, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922.6 MHz or 15 MHz above the last TDD carrier used, whichever is higher. For 1.28 Mcps TDD option base stations which use carrier frequencies within the band 1900 – 1920 MHz, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922.6 MHz or 6.6 MHz above the last TDD carrier used, whichever is higher.		
NOTE **	For 3.84 Mcps TDD option base stations which use carrier frequencies within the band 2570 – 2620 MHz, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 2567.5 MHz or 15 MHz below the last TDD carrier used, whichever is lower.		

NOTE: The requirements in Table 6.17 are based on a minimum coupling loss of 30 dB between base stations. The co-location of different base station classes is not considered. A co-location requirement for the Local Area TDD BS is intended to be part of a later release.

5.5.2 Node B Receiver Characteristics

Given that the simulation results established in TR25.942 [3] will be reused in Section 5.1, the minimum Node B Receivers RF requirements are proposed to be common with those in the core band.

Additional requirements to support co-existence are described in Section 5.5.2.3 and 5.5.2.4.

5.5.2.1 Minimum Blocking Requirements

The minimum blocking requirements for operation in the 2.6 GHz band is described in Section 5.5.2.1.1 in the form of a text change to TS25.105. The changes are highlighted in yellow.

5.5.2.1.1 Proposed Text Changes to TS25.105 for Minimum Blocking Requirements

7.5.0 Minimum requirement

The static reference performance as specified in clause 7.2.1 shall be met with a wanted and an interfering signal coupled to BS antenna input using the parameters as specified in table 7.4-1 for the Wide Area BS and as specified in table 7.4-2 for the Local Area BS.

7.5.0.1 3,84 Mcps TDD Option

Table 7.4-1 (a): Blocking requirements for Wide Area BS for operating bands defined in 5.2(a)

Centre Frequency of Interfering Signal	Interfering Signal Mean Power	Wanted Signal Mean Power	Minimum Offset of Interfering Signal	Type of Interfering Signal
1900 – 1920 MHz, 2010 – 2025 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1880 – 1900 MHz, 1990 – 2010 MHz, 2025 – 2045 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1920 – 1980 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1 – 1880 MHz, 1980 – 1990 MHz, 2045 – 12750 MHz	-15 dBm	-103 dBm	—	CW carrier

Table 7.4-1(b): Blocking requirements for Wide Area BS for operating bands defined in 5.2(b)

Centre Frequency of Interfering Signal	Interfering Signal Mean Power	Wanted Signal Mean Power	Minimum Offset of Interfering Signal	Type of Interfering Signal
1850 – 1990 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1830 – 1850 MHz, 1990 – 2010 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1 – 1830 MHz, 2010 – 12750 MHz	-15 dBm	-103 dBm	—	CW carrier

Table 7.4-1(c): Blocking requirements for Wide Area BS for operating bands defined in 5.2(c)

Centre Frequency of Interfering Signal	Interfering Signal Mean Power	Wanted Signal Mean Power	Minimum Offset of Interfering Signal	Type of Interfering Signal
1910 – 1930 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1890 – 1910 MHz, 1930 – 1950 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1 – 1890 MHz, 1950 – 12750 MHz	-15 dBm	-103 dBm	—	CW carrier

Table 7.4-1 (d): Blocking requirements for Wide Area BS for operating bands defined in 5.2(d)

Centre Frequency of Interfering Signal	Interfering Signal Mean Power	Wanted Signal Mean Power	Minimum Offset of Interfering Signal	Type of Interfering Signal
2570 – 2620 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
2550 – 2570 MHz, 2620 – 2640 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
2500 – 2570 MHz, 2620 – 2690 MHz	-40 dBm	-103 dBm	10 MHz	WCDMA signal with one code
1 – 2550 MHz, 2690 – 12750 MHz	-15 dBm	-103 dBm	—	CW carrier

Table 7.4-2 (a): Blocking requirements for Local Area BS for operating bands defined in 5.2(a)

Centre Frequency of Interfering Signal	Interfering Signal mean power	Wanted Signal mean power	Minimum Offset of Interfering Signal	Type of Interfering Signal
1900 – 1920 MHz, 2010 – 2025 MHz	-30 dBm	-89 dBm	10 MHz	WCDMA signal with one code
1880 – 1900 MHz, 1990 – 2010 MHz, 2025 – 2045 MHz	-30 dBm	-89 dBm	10 MHz	WCDMA signal with one code
1920 – 1980 MHz	-30 dBm	-89 dBm	10 MHz	WCDMA signal with one code
1 – 1880 MHz, 1980 – 1990 MHz, 2045 – 12750 MHz	-15 dBm	-89 dBm	—	CW carrier

Table 7.4-2 (b) : Blocking requirements for Local Area BS for operating bands defined in 5.2(b)

Centre Frequency of Interfering Signal	Interfering Signal mean power	Wanted Signal mean power	Minimum Offset of Interfering Signal	Type of Interfering Signal
1850 – 1990 MHz	-30 dBm	-89 dBm	10 MHz	WCDMA signal with one code
1830 – 1850 MHz, 1990 – 2010 MHz	-30 dBm	-89 dBm	10 MHz	WCDMA signal with one code
1 – 1830 MHz, 2010 – 12750 MHz	-15 dBm	-89 dBm	—	CW carrier

Table 7.4-2 (c): Blocking requirements for Local BS for operating bands defined in 5.2(c)

Centre Frequency of Interfering Signal	Interfering Signal mean power	Wanted Signal mean power	Minimum Offset of Interfering Signal	Type of Interfering Signal
1910 – 1930 MHz	-30 dBm	-89 dBm	10 MHz	WCDMA signal with one code
1890 – 1910 MHz, 1930 – 1950 MHz	-30 dBm	-89 dBm	10 MHz	WCDMA signal with one code
1 – 1890 MHz, 1950 – 12750 MHz	-15 dBm	-89 dBm	—	CW carrier

Table 7.4-2 (d): Blocking requirements for Local Area BS for operating bands defined in 5.2(d)

Centre Frequency of Interfering Signal	Interfering Signal mean power	Wanted Signal mean power	Minimum Offset of Interfering Signal	Type of Interfering Signal
2570 – 2620 MHz	-30 dBm	-89 dBm	10 MHz	WCDMA signal with one code
2550 – 2570 MHz 2620 – 2640 MHz	-30 dBm	-89 dBm	10 MHz	WCDMA signal with one code
2500 – 2570 MHz 2620 – 2690 MHz	-30 dBm	-89 dBm	10 MHz	WCDMA signal with one code
1 – 2550 MHz, 2690 – 12750 MHz	-15 dBm	-89 dBm	—	CW carrier

5.5.2.2 Minimum Spurious Emissions Requirements

The spurious emissions are common with core band operations. This is described as a text changes to TS25.105 in Section 5.5.2.2.1 where the changes are highlighted in yellow.

5.5.2.2.1 Proposed Text Changes to TS25.105 for Node B Receiver Spurious Emissions

7.7.1 Minimum Requirement

7.7.1.1 3,84 Mcps TDD Option

The power of any spurious emission shall not exceed:

Table 7.6: Receiver spurious emission requirements

Band	Maximum level	Measurement Bandwidth	Note
30 MHz – 1 GHz	-57 dBm	100 kHz	
1 GHz – 1.9 GHz, and 1.98 GHz – 2.01 GHz, 2.025 GHz – 2.5 GHz	-47 dBm	1 MHz	With the exception of frequencies between 12.5MHz below the first carrier frequency and 12.5MHz above the last carrier frequency used by the BS.
1.9 GHz – 1.98 GHz, and 2.01 GHz – 2.025 GHz, 2.5 GHz – 2.62 GHz	-78 dBm	3.84 MHz	With the exception of frequencies between 12.5MHz below the first carrier frequency and 12.5MHz above the last carrier frequency used by the BS.
2.025-2.62 GHz – 12.75 GHz	-47 dBm	1 MHz	With the exception of frequencies between 12.5MHz below the first carrier frequency and 12.5MHz above the last carrier frequency used by the BS.

In addition to the requirements in table 7.6, the co-existence requirements for co-located base stations specified in sub-clauses 6.6.3.2.2, 6.6.3.3.2 and 6.6.3.4.2 may also be applied.

5.5.2.3 Additional Requirements for Co-location with GSM900 and/or DCS 1800

The requirements are proposed to be common with those in the core band. These requirements are described in the form of a text changes to TS25.105 in Section 5.5.2.3.1. The changes are highlighted in yellow.

5.5.2.3.1 Proposed Text Changes to TS25.105 for Co-location with GSM900 and/or DCS 1800

7.5.1.1 3,84 Mcps TDD Option

Table 7.4 (d): Additional blocking requirements for operating bands defined in 5.2(a) and 5.2(d) when co-located with GSM900

Centre Frequency of Interfering Signal	Interfering Signal Mean Power	Wanted Signal Mean Power	Minimum Offset of Interfering Signal	Type of Interfering Signal
921 – 960 MHz	+16 dBm	-103 dBm	—	CW carrier

Table 7.4 (e): Additional blocking requirements for operating bands defined in 5.2(a) and 5.2(d) when co-located with DCS1800

Center Frequency of Interfering Signal	Interfering Signal Mean Power	Wanted Signal Mean Power	Minimum Offset of Interfering Signal	Type of Interfering Signal
1805 - 1880 MHz	+16 dBm	-103 dBm	—	CW carrier

5.5.2.4 Additional Requirements for Co-location with UTRA-FDD

Potential interference from UTRA-FDD Base Station transmitting in (FDD) Band VII is expected.

A transmit power of 43 dBm is assumed in Section 5.5.1.3.3 of TR25.810 [5] for WA FDD BS operating on the lowest carrier at 2622.5 MHz. The corresponding interfering power is -2 dBm and -7 dBm at 2617.5 MHz and 2612.5 MHz respectively and -46 dBm for TDD WA BS operations below 2607.5 MHz. Using a MCL of 30 dB for co-location, the interfering signal power of the FDD BS is 13dBm with a corresponding interfering power of -32 dBm and -37 dBm at 2617.5 MHz and 2612.5 MHz. Given that -40 dBm is the maximum interfering signal power (in minimum requirement), additional isolation of 8 dB and 3 dB are required for operations at 2617.5 MHz and 2612.5 MHz respectively, which is assumed to be achieved using site-engineering solutions.

A transmit power of 24 dBm is assumed for FDD LA BS. This will give an interfering power of -6 dBm with a MCL of 30. The corresponding power at 2617.5 MHz and 2612.5 MHz are -51 dBm and -56 dBm respectively, which are below the minimum requirement of -40 dBm and -30 dBm for TDD WA and TDD LA base-stations respectively. Hence, no additional isolations are required for co-location with a FDD LA BS.

The blocking requirements for co-location with UTRA-FDD are described in Section 5.5.2.4.1 in the form of a text proposal for TS25.105. The changes are highlighted in yellow.

5.5.2.4.1 Text Proposal for TS25.105 for co-location with UTRA-FDD

7.5.2 Co-location with UTRA-FDD

This additional blocking requirement may be applied for the protection of TDD BS receivers when UTRA-FDD are co-located with UTRA TDD Wide Area BS.

The blocking performance requirement applies to interfering signals with center frequency within the ranges specified in the tables below, using a 1MHz step size.

In case this additional blocking requirement is applied, the static reference performance as specified in clause 7.2.1 shall be met with a wanted and an interfering signal coupled to BS antenna input using the following parameters.

7.5.2.1 3,84 Mcps TDD Option

Table 7.4 (f): Additional blocking requirements for operating bands defined in 5.2(d) when co-located with UTRA-FDD WA BS

Centre Frequency of Interfering Signal	Interfering Signal Mean Power	Wanted Signal Mean Power	Minimum Offset of Interfering Signal	Type of Interfering Signal
2620 – 2690 MHz	+13 dBm	-103 dBm	—	CW carrier

Table 7.4 (g): Additional blocking requirements for operating bands defined in 5.2(d) when co-located with UTRA-FDD LA BS

Center Frequency of Interfering Signal	Interfering Signal Mean Power	Wanted Signal Mean Power	Minimum Offset of Interfering Signal	Type of Interfering Signal
2620 – 2690 MHz	-6 dBm	-103 dBm	—	CW carrier

5.6 Specific UE requirements for UMTS2600

5.6.1 UE Transmitter Characteristics

It is desirable to avoid any unnecessary increase in UE complexity and hence it is proposed to reuse the existing specifications in the core band. This is also aligned with the assumption in 5.6 of TR25.810 [5].

5.6.1.1 UE Maximum and Minimum Transmit Power

No additional power class will be introduced for UE operating in 2.6 GHz band. Hence, the maximum and minimum output power of the UE for the 2.6 GHz band will be common with those in the core band.

5.6.1.2 Spectrum Emission Mask

The Spectrum Emission Mask is proposed to be common with that in the core band.

5.6.1.3 Adjacent Channel Leakage power Ratio (ACLR)

The ACLR is proposed to be common with that in the core band that is:

- ACLR at +/- 5 MHz = 33 dB
- ACLR at +/- 10 MHz = 43 dB

5.6.1.4 General Spurious Emission

Minimum requirement is common with core band.

Additional requirements for coexistence with UTRA-FDD in 2.6 GHz will be described in Section 5.6.1.4.1.

5.6.1.4.1 Additional Spurious Emission for co-existence with UTRA-FDD in 2.6 GHz

The 2.6 GHz band arrangement allows the operation of FDD downlink to be adjacent to that of TDD uplink. This may introduce the possibility of interference from TDD UE transmission to FDD UE reception. Additional spurious emission requirement may be needed and needs to be specified with the following criteria:

- 1) The complexity, size and cost of the UE are minimized.
- 2) A balanced solution with FDD UE Receiver Blocking specification (since the total interference is a function of blocking and spurious emission and it is dominated by the weaker of the two characteristics)

In defining the 2.6 GHz FDD UE blocking specifications, it is assumed that the 2.6 GHz TDD UE reuses the ACLR and Tx Spurious Emissions in the core band [5]. This corresponds to a blocking of -44 dBm for 2.6 GHz FDD UE. Using a Noise Figure of 9 dB for the UE [3] giving a thermal noise of -99 dBm and a 3dB sensitivity degradation, the corresponding blocking of 55 dB (or the ACS at 3rd adjacent channel).

The total interference (ACIR at 3rd adjacent channel) is a function of blocking and spurious emissions. Allowing a 1 dB tolerance for the total interference gives an ACLR at 3rd adjacent channel of 61 dB. This corresponds to a transmit spurious emission of -37 dBm/3.84 MHz for a maximum TDD UE transmit power of 24 dBm.

The proposed changes to TS25.102 are described in Section 5.6.1.4.1.1 and they are highlighted in yellow.

5.6.1.4.1.1 Proposed Changes to TS25.102 for Co-existence with UTRA-FDD in 2.6 GHz

6.6.3 Spurious emissions

Spurious emissions are emissions which are caused by unwanted transmitter effects such as harmonics emission, parasitic emission, intermodulation products and frequency conversion products, but exclude out of band emissions.

The frequency boundary and the detailed transitions of the limits between the requirement for out band emissions and spectrum emissions are based on ITU-R Recommendations SM.329 [3].

6.6.3.1 Minimum Requirement

6.6.3.1.1 3.84 Mcps TDD Option

These requirements are only applicable for frequencies which are greater than 12.5 MHz away from the UE center carrier frequency.

Table 6.7A: General Spurious emissions requirements (3.84 Mcps TDD Option)

Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
$9 \text{ kHz} \leq f < 150 \text{ kHz}$	1 kHz	-36 dBm
$150 \text{ kHz} \leq f < 30 \text{ MHz}$	10 kHz	-36 dBm
$30 \text{ MHz} \leq f < 1000 \text{ MHz}$	100 kHz	-36 dBm
$1 \text{ GHz} \leq f < 12.75 \text{ GHz}$	1 MHz	-30 dBm

Table 6.7B: Additional Spurious emissions requirements (3.84 Mcps TDD Option)

Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
921 MHz ≤ f < 925 MHz	100 kHz	-60 dBm *
925 MHz ≤ f ≤ 935 MHz	100 kHz	-67 dBm*
935 MHz < f ≤ 960 MHz	100 kHz	-79 dBm*
1805 MHz ≤ f ≤ 1880 MHz	100 kHz	-71 dBm*
2620 MHz ≤ f ≤ 2690 MHz	3.84 MHz	-37 dBm*
* The measurements are made on frequencies which are integer multiples of 200 kHz. As exceptions, up to five measurements with a level up to the applicable requirements defined in Table 6.7A are permitted for each UARFCN used in the measurement.		

5.6.2 UE Receiver Characteristics

As proposed in Section 5.1, the same simulation results evaluated for 1.9 GHz TDD shall be reused. Since these results directly determine the RF requirements, it is proposed that the same minimum RF requirements in the core band are reused as the minimum RF requirements for operations in 2.6 GHz band.

The Blocking characteristics and Rx Spurious Emissions are described in Section 5.6.2.1 and 5.6.2.2 respectively.

5.6.2.1 UE Blocking Characteristics

The UE blocking requirements are described in the form of a text change to TS25.105 in Section 5.6.2.1.1. These changes are highlighted in yellow.

5.6.2.1.1 Proposed Changes to TS25.105 on UE Blocking Characteristics

7.6 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. The blocking performance shall apply at all frequencies except those at which a spurious response occur.

7.6.1 Minimum Requirement

7.6.1.1 3.84 Mcps TDD Option

The BER shall not exceed 0.001 for the parameters specified in table 7.6 and table 7.7. For table 7.7 up to 24 exceptions are allowed for spurious response frequencies in each assigned frequency channel when measured using a 1MHz step size.

Table 7.6: In-band blocking (3.84 Mcps TDD Option)

Parameter	Level		Unit
$\frac{\Sigma DPCH_Ec}{I_{or}}$	0		dB
\hat{I}_{or}	-102		dBm/3.84 MHz
I_{ouw} mean power (modulated)	-56 (for F_{uw} offset ±10 MHz)	-44 (for F_{uw} offset ±15 MHz)	dBm

Table 7.7: Out of band blocking (3.84 Mcps TDD Option)

Parameter	Band 1	Band 2	Band 3	Unit
$\frac{\Sigma D P C H _ E c}{I_{or}}$	0	0	0	dB
\hat{I}_{or}	-102	-102	-102	dBm/3.84 MHz
I_{ouw} (CW)	-44	-30	-15	dBm
F_{uw} For operation in frequency bands as defined in subclause 5.2(a)	1840 <f <1885 1935 <f <1995 2040 <f <2085	1815 <f <1840 2085 <f <2110	1 <f <1815 2110 <f <12750	MHz
F_{uw} For operation in frequency bands as defined in subclause 5.2(b)	1790 <f < 1835 2005 <f < 2050	1765 <f < 1790 2050 <f < 2075	1 <f < 1765 2075 <f < 12750	MHz
F_{uw} For operation in frequency bands as defined in subclause 5.2(c)	1850 <f < 1895 1945 <f < 1990	1825 <f < 1850 1990 <f < 2015	1 <f < 1825 2015 <f < 12750	MHz
F_{uw} For operation in frequency bands as defined in subclause 5.2(d)	2510 <f < 2555 2635 <f < 2680	2485 <f < 2510 2680 <f < 2705	1 <f < 2485 2705 <f < 12750	MHz
1.	For operation referenced in 5.2(a), from 1885 <f < 1900 MHz, 1920 <f < 1935 MHz, 1995 <f < 2010 MHz and 2025 <f < 2040 MHz, the appropriate in-band blocking in table 7.6 or adjacent channel selectivity in section 7.5.1 shall be applied.			
2.	For operation referenced in 5.2(b), from 1835 <f < 1850 MHz and 1990 <f < 2005 MHz, the appropriate in-band blocking in table 7.6 or adjacent channel selectivity in section 7.5.1 shall be applied.			
3.	For operation referenced in 5.2(c), from 1895 <f < 1910 MHz and 1930 <f < 1945 MHz, the appropriate in-band blocking in table 7.6 or adjacent channel selectivity in section 7.5.1 shall be applied.			
4.	For operation referenced in 5.2(d), from 2555 <f < 2570 MHz and 2620 <f < 2635 MHz, the appropriate in-band blocking in table 7.6 or adjacent channel selectivity in section 7.5.1 shall be applied.			

5.6.2.2 UE Receiver Spurious Emission Requirements

The UE receiver spurious emission requirements are described in the form of a text changes to TS25.105 in Section 5.6.2.2.1. These changes are highlighted in yellow.

5.6.2.2.1 Proposed Changes to TS25.105 on UE Receiver Spurious Emission

7.9 Spurious emissions

The Spurious Emissions Power is the power of emissions generated or amplified in a receiver that appear at the UE antenna connector.

7.9.1 Minimum Requirement

7.9.1.1 3.84 Mcps TDD Option

The power of any spurious emission shall not exceed:

Table 7.10: Receiver spurious emission requirements (3.84 Mcps TDD Option)

Band	Maximum level	Measurement Bandwidth	Note
30 MHz – 1 GHz	-57 dBm	100 kHz	
1 GHz – 1.9 GHz and 1.92 GHz – 2.01 GHz, and 2.025 GHz – 2.11 GHz, and 2.17 GHz – 2.57 GHz	-47 dBm	1 MHz	With the exception of frequencies between 12.5MHz below the first carrier frequency and 12.5MHz above the last carrier frequency used by the UE.
1.9 GHz – 1.92 GHz and 2.01 GHz – 2.025 GHz, and 2.11 GHz – 2.170 GHz and 2.57 GHz – 2.69 GHz	-60 dBm	3.84 MHz	With the exception of frequencies between 12.5MHz below the first carrier frequency and 12.5MHz above the last carrier frequency used by the UE.
2.4702.69 GHz – 12.75 GHz	-47 dBm	1 MHz	

6 Required Changes to Specifications

6.1 Required changes to TS 25.105

Required changes in specification TS 25.105 are summarised in Table 6.1 and Table 6.1A for 3.84 Mcps and 1.28 Mcps respectively. Requirements which are not shown are applicable to UMTS 2.6 GHz without any modifications from existing specifications.

Table 6.1: Required Changes in TS 25.105 (for 3.84 Mcps TDD Option)

Section	Requirement	Discussion / Required Changes in TS 25.105
5.2	Frequency bands	A new 50 MHz frequency band is added as band d) 2570 – 2620 MHz: Uplink and Downlink
6.6.3.4.1	Spurious Emission – Protection for UTRA FDD BS in same geographical area	Add requirements for Band VII in Table 6.16
6.6.3.4.2	Spurious Emission – Protection for co-located UTRA FDD BS	Add requirements for Band VII in Table 6.17
6.6.3.5.1	Spurious Emission – Protection for unsynchronized TDD in same geographical area	Add requirements for 2.6 GHz TDD band in Table 6.18
6.6.3.5.2	Spurious Emission – Protection for co-located unsynchronized TDD BS	Add requirements for 2.6 GHz TDD band in Table 6.21
7.5.0.1	Blocking requirement for operations in 2570 – 2620 MHz	Add Table 7.4-1(d) and 7.4-2(d) for blocking requirements for Wide Area BS and Local Area BS respectively
7.5.1.1	Additional blocking requirements for co-location with GSM900 and/or DCS1800	Add text onto Table 7.4(d) and 7.4(e) to include operations in 2.6 GHz band.
7.5.2	Blocking requirement for co-location with UTRA-FDD	Added Section 7.5.2 for co-location (with UTRA-FDD) blocking requirements for Wide Area and Local Area UTRA-TDD BS operating in 2.6 GHz band.
7.7.1.1	General Receiver Spurious Emission	Add text to Table 7.6 to include operations in 2.6 GHz band.
Annex B	Propagation Conditions	Added note in Table B.1 so that it refers to operations in band referenced in 5.2 a), 5.2 b) and 5.2 c). Added Table B.2 for operations in 2.6 GHz

Table 6.1A: Required Changes in TS 25.105 (for 1.28 Mcps TDD Option)

Section	Requirement	Discussion / Required Changes in TS 25.105
5.2	Frequency bands	A new 50 MHz frequency band is added as band d) 2570 – 2620 MHz: Uplink and Downlink
6.6.3.4.1	Spurious Emission – Protection for UTRA FDD BS in same geographical area	Add requirements for Band VII in Table 6.16
6.6.3.4.2	Spurious Emission – Protection for co-located UTRA FDD BS	Add requirements for Band VII in Table 6.17
6.6.3.5.1	Spurious Emission – Protection for unsynchronized TDD in same geographical area	Add requirements for 2.6 GHz TDD band in Table 6.19 and Table 6.10
6.6.3.5.2.	Spurious Emission – Protection for co-located unsynchronized TDD BS	Add requirements for 2.6 GHz TDD band in Table 6.22 and Table 6.23
7.5.0.2	Blocking – Minimum requirement	Add Table 7.4 A1(d) and Table 7.4 A2(d) for Minimum Blocking requirement for Wide Area BS and Local Area BS for operating bands defined in 5.2(d)
7.7.1.2	Spurious emissions – Minimum requirement	Add requirement for 2.6 GHz TDD band in Table 7.6A
Annex B	Propagation conditions for velocity scaling in 2.6GHz frequency	Add Table B.2a on Propagation Conditions for Multi path Fading Environments for operations referenced in 5.2 d)

6.2 Required changes to TS 25.102

Required changes in specification TS 25.102 are summarised in Table 6.2 and Table 6.2A for 3.84 Mcps and 1.28 Mcps respectively. Requirements which are not shown are applicable to UMTS 2.6 GHz without any modifications from the existing specifications.

Table 6.2: Required Changes in TS 25.102 (for 3.84 Mcps TDD Option)

Section	Requirement	Discussion / Required Changes in TS 25.102
6.6.3.1.1	Tx Spurious Emissions	Add additional requirement for 2.6 GHz FDD UE receiver band in Table 6.7B.
7.6.1	Blocking Characteristics	Add requirement for 2.6 GHz TDD band in Table 7.7
7.9.1	Spurious Emissions	Add requirement to include operations in 2.6 GHz TDD band in Table 7.10
Annex B	Propagation Conditions	Added notes in Table B.1 and Table B.1A so that they refer to operations in band referenced in 5.2 a), 5.2 b) and 5.2 c). Added Table B.2 and Table B.2A for operations in 2.6 GHz

Table 6.2A: Required Changes in TS 25.102 (for 1.28 Mcps TDD Option)

Section	Requirement	Discussion / Required Changes in TS 25.102
5.2	Frequency bands	A new 50 MHz frequency band is added as band d) 2570 – 2620 MHz: Uplink and Downlink
5.4.4	UARFCN	Addition of UARFCN for Uplink and Downlink transmission for 2570-2620 MHz band in Table 5.1.
6.6.3.1.2	Tx Spurious Emissions	Add additional requirement for 2.6 GHz FDD UE receiver band in Table 6.7D
7.6.1	Blocking Characteristics	Add requirement for 2.6 GHz TDD band in Table 7.7A
7.9.1	Spurious Emissions	Add requirement to include operations in 2.6 GHz TDD band in Table 7.10A
Annex B	Propagation conditions for velocity scaling in 2.6GHz frequency	Add Table B.2a on Propagation Conditions for Multi path Fading Environments for operations referenced in 5.2 d) Add Table B.3a on Multi-Path Fading Environments for HSDPA Performance Requirements for operations referenced in 5.2 d)

6.3 Required changes to TS 25.142

Required changes in specification TS 25.142 are summarised in Table 6.3 and 6.3A for 3.84 Mcps and 1.28 Mcps respectively. Requirements which are not shown are applicable to UMTS 2.6 GHz without any modifications from the existing specifications.

Table 6.3: Required Changes in TS 25.142 (for 3.84 Mcps TDD Option)

Section	Requirement	Discussion / Required Changes in TS 25.142
4.2	Frequency bands	A new 50 MHz frequency band is added as band d) 2570 – 2620 MHz: Uplink and Downlink
6.6.3.2.4.1	Spurious Emission – Protection for UTRA FDD BS in same geographical area	Add requirements for Band VII in Table 6.35
6.6.3.2.4.2	Spurious Emission – Protection for co-located UTRA FDD BS	Add requirements for Band VII in Table 6.36
6.6.3.2.5.1.1	Spurious Emission – Protection for unsynchronized TDD in same geographical area	Add requirements for 2.6 GHz TDD band in Table 6.36A
6.6.3.2.5.2.1	Spurious Emission – Protection for co-located unsynchronized TDD BS	Add requirements for 2.6 GHz TDD band in Table 6.36D
7.5.2.1.1	Blocking requirement for operations in 2570 – 2620 MHz	Add Table 7.9-1 and 7.9-2 for blocking requirements for Wide Area BS and Local Area BS respectively
7.5.2.1.2	Additional blocking requirements for co-location with GSM900 and/or DCS1800	Add text onto Table 7.9 and 7.10 to include operations in 2.6 GHz band.
7.5.2.1.3	Blocking requirement for co-location with UTRA-FDD	Added Section 7.5.2.1.3 for co-location (with UTRA-FDD) blocking requirements for Wide Area and Local Area UTRA-TDD BS operating in 2.6 GHz band.
7.7.2.1	General Receiver Spurious Emission	Add text to Table 7.12 to include operations in 2.6 GHz band.
Annex B	Propagation Conditions	Added note in Table B.1 so that it refers to operations in band referenced in 4.2 a), 4.2 b) and 4.2 c). Added Table B.2 for operations in 2.6 GHz

Table 6.3A: Required Changes in TS 25.142 (for 1.28 Mcps TDD Option)

Section	Requirement	Discussion / Required Changes in TS 25.142
4.2	Frequency bands	A new 50 MHz frequency band is added as band d) 2570 – 2620 MHz: Uplink and Downlink
6.6.3.2.4.1	Spurious Emission – Protection for UTRA FDD BS in same geographical area	Add requirements for Band VII in Table 6.35
6.6.3.2.4.2	Spurious Emission – Protection for co-located UTRA FDD BS	Add requirements for Band VII in Table 6.36
6.6.3.2.5.1.2	Spurious Emission – Protection for unsynchronized TDD in same geographical area	Add requirements for 2.6 GHz TDD band in Table 6.36 B and Table 6.36C
6.6.3.2.5.2.2	Spurious Emission – Protection for co-located unsynchronized TDD BS	Add requirements for 2.6 GHz TDD band in Table 6.36E and Table 6.36F
7.5.2.2	Blocking – Minimum requirement	Add Table 7.8 A-1d and Table 7.8 A-2d for Minimum Blocking requirement for Wide Area BS and Local Area BS for operating bands defined in 4.2(d)
7.7.2.2	Spurious emissions – Minimum requirement	Add requirement for 2.6 GHz TDD band in Table 7.12A
Annex B	Propagation conditions for velocity scaling in 2.6GHz frequency	Add Table B.2a on Propagation Conditions for Multi path Fading Environments for operations referenced in 5.2 d)

6.4 Required changes to TS 25.113

Required changes in specification TS 25.113 are summarised in Table 4. Requirements which are not shown are applicable to UMTS 2.6 GHz without any modifications from existing specifications.

Table 6.4: Required Changes in TS 25.113

Section	Requirement	Discussion / Required Changes in TS 25.113
4.5.2	Receiver exclusion band	Add receiver exclusion band for frequency band d)

6.5 Required changes to TS 34.124

Required changes in specification TS 34.124 are summarised in Table 5. Requirements which are not shown are applicable to UMTS 2.6 GHz without any modifications from existing specifications.

Table 6.5: Required Changes in TS 34.124

Section	Requirement	Discussion / Required Changes in TS 34.124
4.4	Receiver exclusion band	Add receiver exclusion band for frequency band d)

Annex A (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
2005-05	WG4#35	R4-050453			Initial draft presented for discussion		0.0.0
2005-05	WG4#35	R4-050455			Introduced band 2570-2620 MHz for TDD Uplink and Downlink operations in TS25.105.	0.0.0	0.0.1
2005-05	WG4#35	R4-050565			Highlighted changes required for TS25.102 on UE Receiver Characteristics and Propagation Conditions	0.0.0	0.0.1
2005-08	WG4#36	R4-050967			Text proposal to Section 2 and Section 4	0.0.1	0.1.0
2005-08	WG4#36	R4-050709			Text proposal to Section 5.1 on Simulation Results & RF Requirements	0.0.1	0.1.0
2005-08	WG4#36	R4-050710			Text proposal to Section 5.2 on Channel Raster	0.0.1	0.1.0
2005-08	WG4#36	R4-050711			Text proposal to Section 5.3 on Co-existence with IMT-2000 systems within 2.6 GHz band	0.0.1	0.1.0
2005-08	WG4#36	R4-050712			Text proposal to Section 5.4 on Co-existence with Adjacent Services.	0.0.1	0.1.0
2005-08	WG4#36	R4-050713			Text proposal to Section 5.5.1 on NB Transmitter Characteristics and changes required in TS25.105 and TS25.142.	0.0.1	0.1.0
2005-08	WG4#36	R4-050716			Text proposal to Section 5.5.2 on NB Receiver Characteristics and changes required in TS25.105 and TS25.142.	0.0.1	0.1.0
2005-08	WG4#36	R4-050981			Text proposal to Section 5.5.2.2 on NB Receiver Spurious Emissions and changes required in TS25.105 and TS25.142.	0.0.1	0.1.0
2005-08	WG4#36	R4-050968			Text proposal to Section 5.6.1 on UE Transmitter Characteristics	0.0.1	0.1.0
2005-08	WG4#36	R4-050714			Text proposal to Section 5.6.2 on UE Receiver Characteristics	0.0.1	0.1.0
2005-08	WG4#36	R4-050982			Text proposal to Section 5.6.2.2 on UE Receiver Spurious Emissions	0.0.1	0.1.0
2005-08	WG4#36	R4-050969			Text proposal to Section 5.1A on RF Requirements for 1.28 Mcps TDD and changes required in TS25.102, TS25.105, TS25.142, TS25.113 and TS34.124	0.0.1	0.1.0
2005-09	RAN#29	RP-050428			TR25.811 (2.6GHz TDD WI) version 1.0.0	0.1.0	1.0.0
2005-11	WG4#37	R4-051433			Text proposal for TR25.811 (2.6 GHz TDD WI) on Section 5.6.1.4.1 – Additional Spurious Emission for co-existence with UTRA-FDD in 2.6 GHz - Revised	1.0.0	1.1.0
2005-11	RAN#30	RP-050763			TR25.811 (2.6 GHz TDD WI) version 2.0.0	1.1.0	2.0.0
2005-12	RAN#30	RP-050763			TR approved and put under change control	2.0.0	7.0.0