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Contents

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Foreword

This Technical Specification has been produced by the 3GPP.
The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of this TS, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version 3.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 Indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the specification;

1 Scope

This document establishes the Base Station minimum RF characteristics of the FDD mode of UTRA.

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, subsequent revisions do apply.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

3 Definitions, symbols and abbreviations

3.1 Definitions

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

Power Setting	The value of the control signal, which determines the desired transmitter, output Power. Typically, the power setting would be altered in response to power control commands
Maximum Power Setting	The highest value of the Power control setting which can be used.
Maximum output Power	This refers to the measure of power when averaged over the transmit timeslot at the maximum power setting.
Peak Power	The instantaneous power of the RF envelope which is not expected to be exceeded for [99.9%] of the time
Maximum peak power	The peak power observed when operating at a given maximum output power.
Average transmit power	The average transmitter output power obtained over any specified time interval, including periods with no transmission.
Maximum average power	The average transmitter output power obtained over any specified time interval, including periods with no transmission, when the transmit time slots are at the maximum power setting.

3.2 Symbols

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

<symbol> <Explanation>

3.3 Abbreviations

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

ACIR	Adjacent Channel Interference Ratio
ACLR	Adjacent Channel Leakage power Ratio
ACS	Adjacent Channel Selectivity
BS	Base Station
BER	Bit Error Rate
CW	Continuous Wave (unmodulated signal)
DL	Down Link (forward link)
EIRP	Effective Isotropic Radiated Power
FDD	Frequency Division Duplexing
FER	Frame Error Rate
MER	Message Error Rate
PPM	Parts Per Million
RSSI	Received Signal Strength Indicator
SIR	Signal to Interference ratio
TDD	Time Division Duplexing
TPC	Transmit Power Control
UE	User Equipment
UL	Up Link (reverse link)
UTRA	UMTS Terrestrial Radio Access

4 General

4.1 Measurement uncertainty

The requirements given in this specification do not include measurement uncertainties related to conformance testing as used e.g. in regulatory testing or production testing. Conformance testing is specified in [reference to the appropriate document].

4.2 Base station classes

The requirements in this specification apply to base station intended for general-purpose applications.

In the future further classes of base stations may be defined; the requirements for these may be different than for general-purpose applications.

5 Frequency bands and channel arrangement

This section will be identical to Section 5 of TS 25.101 on “Frequency bands and Channel arrangement”.

6 Transmitter characteristics

6.1 General

Unless detailed the transmitter characteristic are specified at the antenna connector.

6.2 Base station output power

Output power, Pout, of the base station is the mean power of one carrier delivered to a load with resistance equal to the nominal load impedance of the transmitter during one slot.

6.2.1 Base station maximum output power

Maximum output power, Pmax, of the base station is the mean power level per carrier that the manufacturer has declared to be available at the antenna connector.

6.2.1.1 Minimum requirement

In normal conditions, the Base station maximum output power shall remain within +2 dB and –2dB of the manufacturer's rated power.

In extreme conditions, the Base station maximum output power shall remain within +[ ] and –[ ] of the manufacturer's rated power.

6.3 Frequency stability

Frequency stability is ability of the BS to transmit at the assigned carrier frequency.

6.3.1 Minimum requirement

The modulated carrier frequency of the BS shall be accurate to within ± [0.05] PPM for RF frequency generation.

6.4 Output power dynamics

Power control is used to limit the interference level. The transmitter uses a quality-based power control on both the uplink and downlink.

6.4.1 Closed loop power control

Closed loop power control is the ability of the BS transmitter to adjust its output power in response to the UL/DL received signal.

For closed loop correction on the Downlink Traffic Channel (with respect to the open loop estimate), the base station adjust its mean output power level in response to each valid power control bit received from MS on the Reverse Traffic Channel.

6.4.2 Power control steps

The power control step is the minimum step change in the DL transmitter output power in response to a TPC message from the UE.

6.4.2.1 Minimum requirement

Down link step size	[1 dB]
Step size tolerance	ffs.

<Need to define the transmitter power as “code domain power”. This is ffs.>

6.4.3 Power control dynamic range

The power control dynamic range is difference between the maximum and the minimum transmit output power of a traffic channel for a specified reference condition.

6.4.3.1 Minimum requirements

Down link (DL) power control dynamic range [25 dB]
<Definition needs clarification. 25 dB is relative to Pmax – 3 dB.>

6.4.4 Minimum transmit power

The minimum controlled output power of the BS is when the power control setting is set to a minimum value. This is when the power control indicates a minimum transmit output power is required

6.4.4.1 Minimum requirement

Down link (DL) minimum transmit power [Maximum output power – 18 dB]
<The maximum output power definition is ffs.>

6.4.5 Total power dynamic range

The power control dynamic range is difference between the maximum and the minimum transmit output power for a specified reference condition

6.4.5.1 Minimum requirement

Down link (DL) total power dynamic range 18 dB
<This requirement is redundant, since 6.4.4 defines the same dynamic range by a minimum transmit power.>

6.4.6 Power control cycles per second

The maximum rate of change for the DL transmitter power control step.

The Down link (DL) rate of power control steps is 1.6 kHz.

6.4.7 Perch channel power

The perch channel power, sum of the 1st and 2nd perch channel power, to total power ratio is the power attributed perch channel divided by the total power, and is expressed in dB. The 2nd perch channel power is the averaged power during one frame.

6.4.7.1 Minimum requirement

Each perch channel power to total power ratio is shall be within ±**TBD** dB of the configured value.
<The name of the perch channel may need to be changed, subject to WG1 definition.>

6.6 Output RF spectrum emissions

6.6.1 Occupied bandwidth

Occupied bandwidth is a measure of the bandwidth containing 99% of the total integrated power for transmitted spectrum and is centered on the assigned channel frequency. The occupied channel bandwidth is less than 5 MHz based on a chip rate of 4.096 Mcps.

<Needs to be reviewed for the conformance specification.>

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 limit is specified in terms of a spectrum emission mask and adjacent channel power ratio for the transmitter.

6.6.2.1 Spectrum emission mask

The emission mask of the base station is an item for further study.

6.6.2.2 Adjacent Channel Leakage power Ratio (ACLR)

Adjacent Channel Leakage power Ratio (ACLR) is the ratio of the transmitted power to the power measured after a receiver filter in the adjacent channel(s). Both the transmitted power and the received power are measured ~~with a filter response that is [normally rectangular]~~through a matched filter (Root Raised Cosine and roll-off 0.22) with a noise power bandwidth equal to the chip rate.

6.6.2.2.1 Minimum requirement

Table 4: BS ACLR

BS channel	ACLR limit
± First adjacent channel	[45] dB
± Second adjacent channel	[55] dB

Note
In order to ensure that switching transients due to the slotted mode do not degrade the ACLR value the reference measurements conditions are an item for further study.

6.6.2.3 Protection outside a licensee's frequency block

This requirement is applicable if protection is required outside a licensee's defined frequency block.

6.6.2.3.1 Minimum requirement

This requirement applies for frequencies outside the licensee's frequency block, up to an offset of [12.5MHz] from a carrier frequency.

The power of any emission shall be attenuated below the transmit power (P) by at least 43 + 10 log (P)dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1MHz or greater. However, in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier centre frequency and one above the carrier centre frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power.

When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges, both upper and lower, as the design permits.
The measurements of emission power shall be mean power.

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. This is measured at the base station RF output port.

Unless otherwise stated, all requirements are measured as mean power.

6.6.3.1 Mandatory Requirements

The requirements of either subclause 6.6.3.1.1 or subclause 6.6.3.1.2 shall apply.
Either requirement applies at frequencies within the specified frequency ranges which are more than [12.5MHz] from a [carrier frequency].

6.6.3.1.1 Spurious emissions (Category A)

The following requirements shall be met in cases where Category A limits for spurious emissions, as defined in ITU-R Recommendation SM.329-7 [1], are applied.

6.6.3.1.1.1 Minimum Requirement

The power of any spurious emission shall ~~not exceed~~be attenuated by at least the minimum requirement:

Table n: BS Mandatory spurious emissions limits, Category A

Band	Minimum attenuation requirement	Measurement Bandwidth	Note
9kHz – 150kHz	43 + 10logP (dB~~c~~)	1 kHz	Bandwidth as in ITU SM.329-7, s4.1
150kHz – 30MHz		10 kHz	Bandwidth as in ITU SM.329-7, s4.1
30MHz – 1GHz		100 kHz	Bandwidth as in ITU SM.329-7, s4.1
1GHz – [11GHz]		1 MHz	Upper frequency as in ITU SM.329-7, s2.6

P = Mean power (W) where P < 500W

6.6.3.1.2 Spurious emissions (Category B)

The following requirements shall be met in cases where Category B limits for spurious emissions, as defined in ITU-R Recommendation SM.329-7 [1], are applied.

6.6.3.1.2 Minimum Requirement

The power of any spurious emission shall not exceed:

Table n: BS Mandatory spurious emissions limits

Band	Maximum Level	Measurement Bandwidth	Note
9kHz – 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU SM.329-7, s4.1
150kHz – 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU SM.329-7, s4.1
30MHz – 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU SM.329-7, s4.1
1GHz – [11GHz]	-30 dBm	1 MHz	Upper frequency as

			in ITU SM.329-7, s2.6

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 requirement assumes the scenario described in 25.942.] For different scenarios, the manufacturer may declare a different requirement.

This requirement is not applicable to antenna ports which are used for both transmission and reception (e.g. which have an internal duplexer).

NOTE: In this case, the measurement of Reference Sensitivity will directly show any desensitisation of the receiver.

6.6.3.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table n: BS Spurious emissions limits for protection of the BS receiver

Band	Maximum Level	Measurement Bandwidth	Note
1920 – 1980MHz	-[78] dBm	100 kHz	

6.6.3.3 Co-existence with GSM 900

6.6.3.3.1 Operation in the same geographic area

This requirement may be applied for the protection of GSM 900 MS in geographic areas in which both GSM 900 and UTRA are deployed.

[This requirement assumes the scenario described in 25.942.] For different scenarios, the manufacturer may declare a different requirement.

6.6.3.3.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table n: BS Spurious emissions limits for BS in geographic coverage area of GSM 900

Band	Maximum Level	Measurement Bandwidth	Note
921 – 960 MHz	-[47] dBm	100 kHz	

6.6.3.3.2 Co-located base stations

This requirement may be applied for the protection of GSM 900 BTS receivers when GSM 900 BTS and UTRA BS are co-located.

[This requirement assumes the scenario described in 25.942.] For different scenarios, the manufacturer may declare a different requirement.

6.6.3.3.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table n: BS Spurious emissions limits for protection of the BS receiver

Band	Maximum Level	Measurement Bandwidth	Note
921 – 960876-915 MHz	- –[98]dBm	100 kHz	

6.6.3.4 Co-existence with DCS 1800

6.6.3.4.1 Operation in the same geographic area

This requirement may be applied for the protection of DCS 1800 MS in geographic areas in which both DCS 1800 and UTRA are deployed.

[This requirement assumes the scenario described in 25.942.] For different scenarios, the manufacturer may declare a different requirement.

6.6.3.4.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table n: BS Spurious emissions limits for BS in geographic coverage area of DCS 1800

Band	Maximum Level	Measurement Bandwidth	Note
1805 – 1880 MHz	[-57] dBm	100 kHz	

6.6.3.4.2 Co-located basestations

This requirement may be applied for the protection of DCS 1800 BTS receivers when DCS 1800 BTS and UTRA BS are co-located.

[This requirement assumes the scenario described in 25.942.] For different scenarios, the manufacturer may declare a different requirement.

6.6.3.4.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table n: BS Spurious emissions limits for BS co-located with DCS 1800 BTS

Band	Maximum Level	Measurement Bandwidth	Note
1805 – 18801710-1785 MHz	-[98]dBm	100 kHz	

6.6.3.5 Co-existence with PHS

This requirement may be applied for the protection of PHS in geographic areas in which both PHS and UTRA are deployed.

6.6.3.5.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table n: BS Spurious emissions limits for BS in geographic coverage area of PHS

Band	Maximum Level	Measurement Bandwidth	Note
1893.5 – 1910 MHz	-40 dBm	300 kHz	

6.7 Transmit intermodulation

The transmit intermodulation performance is a measure of the capability of the transmitter to inhibit the generation of signals in its non linear elements caused by presence of the wanted signal and an interfering signal reaching the transmitter via the antenna.

The transmit intermodulation shall be defined by the ratio of the output power of subject transmitted signal to the output power of intermodulation product when an interference signal (that differs from frequency of subject signal) is added at a level [**]dB lower than that of the subject signal. The frequency of the interference signal shall be [**]MHz or more off the subject signal, however, as for interference signal whose frequency is in the range of 5MHz to 10MHz off the subject signal, adjacent channel leakage power is used instead of the output of intermodulation product.

6.7.1 Minimum requirement

The Transmit intermodulation level against the mean output power per carrier of the base station shall not exceed the limits specified below.

[If the mean transmission power is no more than 25W : 25μW(-16dBm) / 1MHz or less.]
[If the mean transmission power is more than 25W : -60dBc/1MHz or less, and 20mW (+13dBm) / 1MHz or less.]
<This is based on ARIB input. Further input for co-located cellular systems is needed.>

6.8 Transmit modulation

6.8.1 Transmit pulse shape filter

The transmit pulse-shaping filter is a root-raised cosine (RRC) with roll-off α =0.22 in the frequency domain. The impulse response of the chip impulse filter $RC_0(t)$ is

$$RC_0(t) = \frac{\sin\left(p\frac{t}{T_C}(1-a)\right) + 4a\frac{t}{T_C}\cos\left(p\frac{t}{T_C}(1+a)\right)}{p\frac{t}{T_C}\left(1-\left(4a\frac{t}{T_C}\right)^2\right)}$$

Where the roll-off factor α =0.22 and the chip duration: $T_c = \frac{1}{chiprate} = 0.24414ms$

6.8.2 Modulation Accuracy

The modulation accuracy is a measure of the difference between the measured waveform and the theoretical modulated waveform (the error vector). It is the square root of the ratio of the mean error vector power to the mean reference signal power expressed as a %. The measurement interval is one power control group (timeslot)

6.8.1 Minimum requirement

The Modulation accuracy shall not be worse than [12.5] %.

6.8.2 Peak code Domain error

The code domain error is computed by projecting the error vector power onto the code domain at the maximum spreading factor. The error vector for each power code is defined as the ratio to the mean power of the reference waveform expressed in dB. The peak code domain error is defined as the maximum value for the code domain error. The measurement interval is one power control group (timeslot).

6.8.2.1 Minimum requirement

The peak code domain error shall not exceed [ ] dB

7 Receiver characteristics

7.1 General

Unless detailed the receiver characteristic are specified at each antenna connector of the BS.

<Definition of requirements for antenna diversity is ffs.>
<Definition of test channel is required.>

7.3 Reference sensitivity level

The reference sensitivity is the minimum receiver input power measured at the antenna connector at which the FER/BER does not exceed the specific value indicated in section 7.3.1. The signal power is equally applied to each antenna connector for diversity.

7.3.1 Minimum requirement

For the different services with corresponding data rates, the reference sensitivity level of the BS shall be specified in table 8 below.

Table 8: BS reference sensitivity levels

Data rate	BS reference sensitivity level (dBm)	[FER/BER]
12.2 kbps	-122 dBm	BER shall not exceed 0.001

<Editor: Should only be specified for a measurement channel.>

7.3.2 Maximum Frequency Deviation for Receiver Performance

The need for such a requirement is for further study.

7.4 Dynamic range

The receiver dynamic range is the input power range at each BS antenna connector over which the [FER/BER} does not exceed a specific rate.

The static [BER/FER] reference performance as specified in clause 7.3.1 should be met over a receiver input range of [30] dB above the specified reference sensitivity level for [channel type ffs].

<The effect of applying mast head LNAs to the dynamic range specification is ffs.>

7.5 Adjacent Channel Selectivity (ACS)

Adjacent channel selectivity (ACS) is a measure of the receiver ability to receive a wanted signal at is assigned channel frequency in the presence of an adjacent channel signal at a given frequency offset from the center frequency of the assigned channel. ACS is the ratio of the receiver filter attenuation on the assigned channel frequency to the receive filter attenuation on the adjacent channel(s).

7.5.1 Minimum requirement

The static reference performance as specified in clause 7.3.1 should be met when the following signals are applied to the receiver;

- A wanted signal at the assigned channel frequency, 3 dB above the static reference level.
- A modulated interfering adjacent channel signal with a level of [ ] dBm.

<The specification will be based on an ACS value of [45] dB for the first adjacent channel.>

7.6 Blocking characteristics

The blocking characteristics is a measure of the receiver ability to receive a wanted signal at is 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.

The static reference performance as specified in clause 7.3.1 should be met when the following signals are applied to the receiver;

- A wanted signal at the assigned channel frequency, 3 dB above the static reference level.
- An interfering signal with a frequency offset of at least 10 MHz from the nominal assigned channel with a level and frequency range given below.

Center Frequency of Interfering Signal	Interfering Signal Level	Type of Interfering Signal
1920 – 1980 MHz	-42 dBm	4.096 Mcps HPSK modulated signal
1900 – 1920 MHz 1980 – 2000 MHz	TBD	4.096 Mcps HPSK modulated signal
<1900, > 2000 MHz	TBD	CW carrier (preferred)

<The definition of the exemptions needs to be reconsidered, since it is unclear.>

7.7 Spurious response

Spurious response is a measure of the receiver's ability to receive a wanted signal on its assigned channel frequency without exceeding a given degradation due to the presence of an unwanted CW interfering signal at any other frequency at which a response is obtained i.e. for which the blocking limit is not met.

The static reference performance as specified in clause 7.3.1 should be met when the following signals are applied to the receiver;

- A wanted signal at the assigned channel frequency, 3 dB above the static reference level.
- A CW interfering signal below a level of [-42] dBm.
- The number of allowed spurious responses is an item for further study.

7.8 Intermodulation characteristics

Third and higher order mixing of the two interfering RF signals can produce an interfering signal in the band of the desired channel. Intermodulation response rejection is a measure of the capability of the receiver to receiver a wanted signal on its assigned channel frequency in the presence of two or more interfering signals which have a specific frequency relationship to the wanted signal.

The static reference performance as specified in clause 7.3.1 ashould be met when the following signals are applied to the receiver;

- A wanted signal at the assigned channel frequency, 3 dB above the static reference level.
- A CW interfering signal at frequency [10 MHz] and a [CW] signal at frequency [20.1 MHz] with a level of [ ] dBm.

7.9 Spurious emissions

<Text to be added.>

8 Performance requirement

8.1 General

Performance requirements are specified for a number of test environments and multi-path channel classes.

8.2 BS Dynamic reference sensitivity performance

The minimum required dynamic reference sensitivity performance is specified according to the traffic rate and the propagation conditions.

8.2.1 Performance in AWGN channel

The performance requirement in AWGN channel is determined by the E_b/I_0 required for BER=10^{-3}, 10^{-6}. The BER is calculated for each of the possible data services.

8.2.1.2 Single link performance

The required E_b/I_0 is described in Table XXX.

Table XXX E_b/I_0 required for BER=10^{-3}, 10^{-6}

Data services (BER)	Data rates (kbps)	Required E_b/I_0
Speech (10^{-3})	8	T.B.D.
Long Constrained Delay data bearer services (10^{-6})	64 2048	T.B.D. T.B.D.
Unconstrained Delay Data bearer services (10^{-6})	64 2048	T.B.D. T.B.D.

[6.4.1.3 Uplink power control]

[The uplink power control test ensures that the power control bits have the correct sense, position, delay, and amplitude.]

[6.4.1.4 Softer handover performance]

[Further study]

[6.4.1.5 Soft handover performance]

[Further study]

8.2.2 Performance in multipath fading channels

The performance requirement of reverse link with/without TPC in multipath fading channels is determined by the E_b/I_0 required for BER=10^{-3}, 10^{-6}. The BER is calculated for each of the possible data services.

8.2.2.1 Single link performance

8.2.2.1.1 Performance without TPC

The required E_b/I_0 is described in Table XXX.

Table XXX E_b/I_0 required for BER=10^{-3}, 10^{-6}

Data services (BER)	Indoor (A), 3km/h		Pedestrian (A), 3km/h		Vehicular (A), 120km/h	
	Data rates	Required E_b/I_0	Data rates	Required E_b/I_0	Data rates	Required E_b/I_0
Speech (10^{-3})	8kbps	T.B.D.	8kbps	T.B.D.	8kbps	T.B.D.
Long Constrained Delay data bearer services (10^{-6})	64kbps 2048kbps	T.B.D. T.B.D.	64kbps 384kbps	T.B.D. T.B.D.	64kbps 144kbps 384kbps	T.B.D. T.B.D. T.B.D.
Unconstrained Delay Data bearer services (10^{-6})	64kbps 2048kbps	T.B.D. T.B.D.	64kbps 384kbps	T.B.D. T.B.D.	64kbps 144kbps 384kbps	T.B.D. T.B.D. T.B.D.

8.2.2.1.2 Performance with TPC

The required E_b/I_0 is described in Table XXX.

Table XXX E_b/I_0 required for BER=10^{-3}, 10^{-6}

Data services (BER)	Indoor (A), 3km/h		Pedestrian (A), 3km/h		Vehicular (A), 120km/h	
	Data rates	Required E_b/I_0	Data rates	Required E_b/I_0	Data rates	Required E_b/I_0
Speech (10^{-3})	8kbps	T.B.D.	8kbps	T.B.D.	8kbps	T.B.D.
Long Constrained Delay data bearer services (10^{-6})	64kbps 2048kbps	T.B.D. T.B.D.	64kbps 384kbps	T.B.D. T.B.D.	64kbps 144kbps 384kbps	T.B.D. T.B.D. T.B.D.
Unconstrained Delay Data bearer services (10^{-6})	64kbps 2048kbps	T.B.D. T.B.D.	64kbps 384kbps	T.B.D. T.B.D.	64kbps 144kbps 384kbps	T.B.D. T.B.D. T.B.D.

[6.4.2.3 Uplink power control]

[The uplink power control test ensures that the power control bits have the correct sense, position, delay, and amplitude.]

[6.4.2.4 Softer handover performance]

[Further study]

[6.4.2.5 Soft handover performance]

[Further study]

Annex A (normative): Measurement channels

Annex B (normative): Propagation conditions

Annex C (normative): Environmental conditions

Annex D (informative): Open items

Section number	Section description	Status
6.6.1	Occupied bandwidth	Is this section still required?
6.6.2.3	Protection outside a licensee's frequency block	The current text is based closely on FCC part 24. It may be possible to clarify the requirement (to allow more consistent testing) by including parameters which are specific to UTRA, including: - defining requirement as an absolute value. - Defining the minimum carrier spacing from the edge of the licencee's frequency block. - Defining the –26dB bandwidth of the emission. - Defining the resolution bandwidth in the first 1MHz (the requirement would appear to be about 45kHz or greater; is it possible to perform this measurement with this value of resolution bandwidth?) The requirement for spurious emissions in SM.329 starts at an offset from the carrrier of 250% of the necessary bandwidth. The working assumption for the necessary bandwidth appears to be 5MHz. This should be confirmed. Define a term for the centre of the transmitted spectrum (carrier frequency?) Scenario calculations should be performed to confirm the requirements for: - 6.6.3.2 Protection of the BS receiver, currently –[78]dBm - 6.6.3.3.2 Co-existence with GSM 900; co-located basestations, currently –[98]dBm - 6.6.3.4.2 Co-existence with DCS 1800; co-located basestations, currently –[98]dBm

History

Document history		
S4.01B V0.0.1	1999-02-05	Merged document from (ARIB) Specification of Base Station for 3G Mobile System ver 1.0-0.1 and (ETSI) XX06v0.4.01 UTRA FDD; Radio transmission and reception (base station relevant parts).
V0.0.2	1999-02-16	Output from WG4 drafting session, with single base line text for most sections.
V0.0.3	1999-02-24	Editorial update after WG4#2 for distribution on the e-mail reflector.
V1.0.0	1999-03-04	Document status raised to v1.0.0 at TSG RAN#2. No editorial or content changes from v0.0.3 release apart from change to revision.
V1.0.1	1999-04-12	Incorporation of changes from WG4 #3, sent to e-mail reflector for comments.
TS 25.104 V1.0.0	1999-04-22	Noted by TSG-RAN as TS 25.104 V1.0.0
V1.1.0	1999-06-04	Incorporation of changes from WG4 #4 in Kista, sent to the reflector for comments.
V1.2.0	1999-06-11	Incorporation of changes proposed on the reflector. Submitted to WG4 #5.

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