TSG RAN Meeting #22 **RP-030596**
Maui, Hawaii, US, 9 - 12 December 2003

Title **CRs (Rel-5 and Rel-6 Category A) to TS 25.101, TS 25.102, TS 25.104, TS 25.105, TS 25.106, TS 25.113, TS 25.141, TS 25.142, TS 25.143 on "Correction of references to ITU recommendations"**
Source **TSG RAN WG4**
Agenda Item **7.5.5**

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-030877	25.101	277		F	Rel-5	5.8.0	Correction of references to ITU recommendations	TEI5
R4-030885	25.101	278		A	Rel-6	6.2.0	Correction of references to ITU recommendations	TEI5
R4-030878	25.102	141		F	Rel-5	5.5.0	Correction of references to ITU recommendations	TEI5
R4-030879	25.104	203		F	Rel-5	5.7.0	Correction of references to ITU recommendations	TEI5
R4-030886	25.104	204		A	Rel-6	6.3.0	Correction of references to ITU recommendations	TEI5
R4-030880	25.105	151		F	Rel-5	5.4.0	Correction of references to ITU recommendations	TEI5
R4-030881	25.106	027		F	Rel-5	5.6.0	Correction of references to ITU recommendations	TEI5
R4-031050	25.113	022		F	Rel-5	5.4.0	Correction of references to ITU recommendations	TEI5
R4-030882	25.141	324		F	Rel-5	5.7.0	Correction of references to ITU recommendations	TEI5
R4-030887	25.141	325		A	Rel-6	6.3.0	Correction of references to ITU recommendations	TEI5
R4-030883	25.142	168		F	Rel-5	5.5.0	Correction of references to ITU recommendations	TEI5
R4-030884	25.143	038		F	Rel-5	5.6.0	Correction of references to ITU recommendations	TEI5

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030877**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.101** **CR** **277** ⌘ **rev** ⌘ Current version: **5.8.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction of references to ITU recommendations
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/11/2003
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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	ITU recommendation SM329 was updated and renamed. Previous versions currently referenced in the specification are superseeded and cannot longer used as reference.
Summary of change:	⌘	References to SM329 are corrected.
Consequences if not approved:	⌘	**Isolated impact analysis:** The CR has no impact on Node-B or UE implementation as it corrects external references only.

Clauses affected:	⌘	2, 6.6.3

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
	X		Test specifications	34.121
		X	O&M Specifications	

Other comments:	⌘	Equivalent CRs in other Releases: CR278 cat. A to 25.101 v6.2.0

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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] (void)

[2] ITU-R Recommendation SM.329~~-9~~: "~~Spurious emissions~~Unwanted emissions in the spurious domain".

[3] (void)

[4] 3GPP TS 25.433: "UTRAN Iub Interface NBAP Signalling".

[5] ETSI ETR 273: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".

[6] 3GPP TS 45.004: "Digital cellular telecommunications system (Phase 2+); Modulation".

3 Definitions, symbols and abbreviations

--- NEXT CHANGED SECTION ---

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~~-9~~[2].

6.6.3.1 Minimum requirement

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

Table 6.12: General spurious emissions requirements

Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
9 kHz ≤ f < 150 kHz	1 kHz	-36 dBm
150 kHz ≤ f < 30 MHz	10 kHz	-36 dBm
30 MHz ≤ f < 1000 MHz	100 kHz	-36 dBm
1 GHz ≤ f < 12.75 GHz	1 MHz	-30 dBm

Table 6.13: Additional spurious emissions requirements

Operating Band	Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
I	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 *
	1893.5 MHz <f<1919.6 MHz	300 kHz	-41 dBm
II	-	-	-
III	925 MHz ≤ f ≤ 935 MHz	100 kHz	-67 dBm *
	935 MHz < f ≤ 960 MHz	100 kHz	-79 dBm *
	2110 MHz ≤ f ≤ 2170 MHz	3.84 MHz	-60 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 6.12 are permitted for each UARFCN used in the measurement			

6.7 Transmit intermodulation

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030885**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.101** **CR** **278** ⌘ **rev** ⌘ Current version: **6.2.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction of references to ITU recommendations
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/11/2003
Category:	⌘	**A**
Release:	⌘	Rel-6

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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	ITU recommendation SM329 was updated and renamed. Previous versions currently referenced in the specification are superseeded and cannot longer used as reference.
Summary of change:	⌘	References to SM329 are corrected.
Consequences if not approved:	⌘	**Isolated impact analysis:** The CR has no impact on Node-B or UE implementation as it corrects external references only.

Clauses affected:	⌘	2, 6.6.3

Other specs affected: ⌘	Y	N		
		X	Other core specifications	⌘
	X		Test specifications	34.121
		X	O&M Specifications	

Other comments:	⌘	Equivalent CRs in other Releases: CR277 cat. F to 25.101 v5.8.0

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2 References

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[1] (void)

[2] ITU-R Recommendation SM.329~~-9~~: "~~Spurious emissions~~Unwanted emissions in the spurious domain".

[3] (void)

[4] 3GPP TS 25.433: "UTRAN Iub Interface NBAP Signalling".

[5] ETSI ETR 273: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".

[6] 3GPP TS 45.004: "Digital cellular telecommunications system (Phase 2+); Modulation".

3 Definitions, symbols and abbreviations

--- NEXT CHANGED SECTION ---

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~~-9~~ [2].

6.6.3.1 Minimum requirement

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

Table 6.12: General spurious emissions requirements

Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
9 kHz ≤ f < 150 kHz	1 kHz	-36 dBm
150 kHz ≤ f < 30 MHz	10 kHz	-36 dBm
30 MHz ≤ f < 1000 MHz	100 kHz	-36 dBm
1 GHz ≤ f < 12.75 GHz	1 MHz	-30 dBm

Table 6.13: Additional spurious emissions requirements

Operating Band	Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
I	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 *
	1893.5 MHz <f<1919.6 MHz	300 kHz	-41 dBm
	2110 MHz ≤ f ≤ 2170 MHz	3.84 MHz	-60 dBm
II	1930 MHz ≤ f ≤ 1990 MHz	3.84 MHz	-60 dBm
III	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	3.84 MHz	-60 dBm
	2110 MHz ≤ f ≤ 2170 MHz	3.84 MHz	-60 dBm *
Note *	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 6.12 are permitted for each UARFCN used in the measurement		

6.7 Transmit intermodulation

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030878**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.102** **CR** **141** ⌘ **rev** ⌘ Current version: **5.5.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Correction of references to ITU recommendations
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/11/2003
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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	ITU recommendation SM329 was updated and renamed. Previous versions currently referenced in the specification are superseeded and cannot longer used as reference.
Summary of change:	⌘	References to SM329 are corrected.
Consequences if not approved:	⌘	**Isolated impact analysis:** The CR has no impact on Node-B or UE implementation as it corrects external references only.

Clauses affected:	⌘	2, 6.6.3			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	
		X		Test specifications	34.122
			X	O&M Specifications	
Other comments:	⌘				

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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.

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- 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] ETSI ETR 273-1-2: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes"

[2] 3GPP TS 25.306: "UE Radio Access capabilities definition".

[3] ITU-R Recommendation SM.329: "Unwanted emissions in the spurious domain".

3 Definitions, symbols and abbreviations

--- NEXT CHANGED SECTION ---

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~~-9~~ [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 kHz ≤ f < 150 kHz	1 kHz	-36 dBm
150 kHz ≤ f < 30 MHz	10 kHz	-36 dBm
30 MHz ≤ f < 1000 MHz	100 kHz	-36 dBm
1 GHz ≤ f < 12.75 GHz	1 MHz	-30 dBm

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

Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
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*
* 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.		

6.6.3.1.2 1.28 Mcps TDD Option

These requirements are only applicable for frequencies which are greater than 4 MHz away from the UE center carrier frequency.

Table 6.7C: General Spurious emissions requirements (1.28 Mcps TDD Option)

Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
9 kHz ≤ f < 150 kHz	1 kHz	-36 dBm
150 kHz ≤ f < 30 MHz	10 kHz	-36 dBm
30 MHz ≤ f < 1000 MHz	100 kHz	-36 dBm
1 GHz ≤ f < 12.75 GHz	1 MHz	-30 dBm

Table 6.7D : Additional Spurious emissions requirements (1.28 Mcps TDD Option)

Frequency Bandwidth	Measurement Bandwidth	Minimum requirement
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*
* 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 6.7C are permitted for each UARFCN used in the measurement.		

6.7 Transmit intermodulation

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030879**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.104** **CR** **203** ⌘ **rev** ⌘ Current version: **5.7.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Correction of references to ITU recommendations
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/11/2003
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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	ITU recommendation SM329 was updated and renamed. Previous versions currently referenced in the specification are superseeded and cannot longer used as reference.
Summary of change:	⌘	References to SM329 are corrected.
Consequences if not approved:	⌘	**Isolated impact analysis:** The CR has no impact on Node-B or UE implementation as it corrects external references only.

Clauses affected:	⌘	2, 4.3, 6.6.3.1, 6.6.3.1.1, 6.6.3.1.1.1, 6.6.3.1.2, 6.6.3.1.2.1,

Other specs affected: ⌘	Y	N		⌘
		X	Other core specifications	
	X		Test specifications	25.141
		X	O&M Specifications	

Other comments: ⌘ Equivalent CRs in other Releases: CR204 cat. A to 25.104 v6.3.0

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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.

2 References

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[1] ITU-R Recommendation SM.329~~-9~~, "~~Spurious emissions~~Unwanted emissions in the spurious domain".

[2] (void)

[3] ETSI ETR 273-1-2: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".

[4] 3GPP TR 25.942 "RF System Scenarios".

[5] 3GPP TS 45.004: "Digital cellular telecommunications system (Phase 2+); Modulation".

[6] 3GPP TS 25.213: "Spreading and modulation (FDD)".

3 Definitions and abbreviations

--- NEXT CHANGED SECTION ---

4.3 Regional requirements

Some requirements in TS 25.104 may only apply in certain regions. Table 4.1 lists all requirements that may be applied differently in different regions.

Table 4.1: List of regional requirements

Clause number	Requirement	Comments
5.2	Frequency bands	Some bands may be applied regionally.
5.3	Tx-Rx Frequency Separation	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
5.4	Channel arrangement	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
6.2.1	Base station maximum output power	In certain regions, the minimum requirement for normal conditions may apply also for some conditions outside the range of conditions defined as normal.
6.6.2.1	Spectrum emission mask	The mask specified may be mandatory in certain regions. In other regions this mask may not be applied.
6.6.3.1.1	Spurious emissions (Category A)	These requirements shall be met in cases where Category A limits for spurious emissions, as defined in ITU-R Recommendation SM.329~~-9~~ [1], are applied.
6.6.3.1.2	Spurious emissions (Category B)	These requirements shall be met in cases where Category B limits for spurious emissions, as defined in ITU-R Recommendation SM.329~~-9~~ [1], are applied.
6.6.3.3.1	Co-existence with GSM900 -Operation in the same geographic area	This requirement may be applied for the protection of GSM 900 MS and GSM 900 BTS in geographic areas in which both GSM 900 and UTRA FDD are deployed.
6.6.3.3.2	Co-existence with GSM900 - Co-located base stations	This requirement may be applied for the protection of GSM 900 BTS receivers when GSM 900 BTS and UTRA FDD BS are co-located.
6.6.3.4.1	Co-existence with DCS1800 -Operation in the same geographic area	This requirement may be applied for the protection of DCS 1800 MS and DCS 1800 BTS in geographic areas in which both DCS 1800 and UTRA FDD are deployed.
6.6.3.4.2	Co-existence with DCS1800 - Co-located base stations	This requirement may be applied for the protection of DCS 1800 BTS receivers when DCS 1800 BTS and UTRA FDD BS are co-located.
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 FDD are deployed.
6.6.3.6	Co-.existence with services in adjacent frequency bands	This requirement may be applied for the protection in bands adjacent to the downlink bands as defined in clause 5.2in geographic areas in which both an adjacent band service and UTRA FDD are deployed.
6.6.3.7.1	Co-existence with UTRA TDD - Operation in the same geographic area	This requirement may be applied to geographic areas in which both UTRA-TDD and UTRA-FDD are deployed.
6.6.3.7.2	Co-existence with UTRA TDD - Co-located base stations	This requirement may be applied for the protection of UTRA-TDD BS receivers when UTRA-TDD BS and UTRA FDD BS are co-located.

6.6.3.8.1	Co-existence with UTRA FDD in frequency band I -Operation in the same geographic area	This requirement may be applied for the protection of UTRA FDD UE in frequency band I in geographic areas in which both UTRA FDD in frequency band I and III are deployed.
6.6.3.8.2	Co-existence with UTRA FDD in frequency band I - Co-located base stations	This requirement may be applied for the protection of UTRA FDD BTS receivers in frequency band I when UTRA FDD BS in frequency band I and III are co-located.
6.6.3.9.1	Co-existence with UTRA FDD in frequency band III -Operation in the same geographic area	This requirement may be applied for the protection of UTRA FDD UE in frequency band I in geographic areas in which both UTRA FDD in frequency band I and III are deployed.
6.6.3.9.2	Co-existence with UTRA FDD in frequency band III - Co-located base stations	This requirement may be applied for the protection of UTRA FDD BTS receivers in frequency band I when UTRA FDD BS in frequency band I and III are co-located.
6.6.3.10.1	Co-existence with PCS1900 -Operation in the same geographic area	This requirement may be applied for the protection of PCS 1900 BTS receivers in geographic areas in which both PCS 1900 and UTRA FDD are deployed.
6.6.3.10.2	Co-existence with PCS1900 - Co-located base stations	This requirement may be applied for the protection of PCS 1900 BTS receivers when PCS 1900 BTS and UTRA FDD BS are co-located.
6.6.3.11.1	Co-existence with GSM850 -Operation in the same geographic area	This requirement may be applied for the protection of GSM 850 MS and GSM 850 BTS receivers in geographic areas in which both GSM 850 and UTRA FDD are deployed.
6.6.3.11.2	Co-existence with GSM850 - Co-located base stations	This requirement may be applied for the protection of GSM 850 BTS receivers when GSM 850 BTS and UTRA FDD BS are co-located.
7.4.2	Adjacent Channel Selectivity Co-location with UTRA-TDD	This requirement may be applied for the protection of UTRA-FDD BS receivers when UTRA-FDD BS and UTRA-TDD BS are co-located.
7.5	Blocking characteristic	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
7.5.2	Blocking characteristics Co-location with GSM900, DCS 1800, PCS1900 and/or UTRA	This requirement may be applied for the protection of UTRA FDD BS receivers when UTRA FDD BS and GSM 900, DCS1800, PCS1900, GSM850 and/or UTRA BS (operating in different frequency bands) are co-located.
7.5.3	Blocking characteristics Co-location with UTRA TDD	This requirement may be applied for the protection of UTRA FDD BS receivers when UTRA FDD BS and UTRA TDD BS are co-located.
7.6	Intermodulation characteristics	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
7.7	Spurious emissions	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
	HSDPA*	The portion of HSDPA(High Speed Downlink Packet Access) is not applicable to ARIB standards by the time when ARIB is prepared to transpose.

Note *: HSDPA: This regional requirement should be reviewed to check its necessity every TSG RAN meeting.

4.4 Environmental requirements for the BS equipment

--- NEXT CHANGED SECTION ---

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.

The requirements shall apply whatever the type of transmitter considered (single carrier or multiple-carrier). It applies for all transmission modes foreseen by the manufacturer's specification.

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 that are more than 12.5MHz below the first carrier frequency used or more than 12.5MHz above the last carrier frequency used.

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~~-9~~ [1], are applied.

6.6.3.1.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.8: BS Mandatory spurious emissions limits, Category A

Band	Maximum level	Measurement Bandwidth	Note
9kHz - 150kHz	-13 dBm	1 kHz	Bandwidth as in ITU-R SM.329~~-9~~ [1], s4.1
150kHz - 30MHz		10 kHz	Bandwidth as in ITU-R SM.329~~-9~~ [1], s4.1
30MHz - 1GHz		100 kHz	Bandwidth as in ITU-R SM.329~~-9~~ [1], s4.1
1GHz - 12.75 GHz		1 MHz	Upper frequency as in ITU-R SM.329~~-9~~ [1], s2.5 table 1

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~~-9~~ [1], are applied.

6.6.3.1.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.9: BS Mandatory spurious emissions limits, operating band I, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
1GHz ↔ Fc1 - 60 MHz or 2100 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
Fc1 - 60 MHz or 2100 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 2100 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 7
Fc1 - 50 MHz or 2100 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 2180 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 7
Fc2 + 50 MHz or 2180 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 2180 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 7
Fc2 + 60 MHz or 2180 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1. Upper frequency as in ITU-R SM.329-9 [1], s2.5 table 1

Table 6.9A: BS Mandatory spurious emissions limits, operating band II, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
1GHz ↔ Fc1 - 60 MHz or 1920 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
Fc1 - 60 MHz or 1920 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 1920 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 7
Fc1 - 50 MHz or 1920 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 2000 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 7
Fc2 + 50 MHz or 2000 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 2000 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 1
Fc2 + 60 MHz or 2000 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1. Upper frequency as in ITU-R SM.329-9 [1], s2.5 table 16

Table 6.9B: BS Mandatory spurious emissions limits, operating band III, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
1GHz ↔ Fc1 - 60 MHz or 1795 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
Fc1 - 60 MHz or 1795 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 1795 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 7
Fc1 - 50 MHz or 1795 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 1890 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 7
Fc2 + 50 MHz or 1890 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 1890 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 7
Fc2 + 60 MHz or 1890 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1. Upper frequency as in ITU-R SM.329-9 [1], s2.5 table 1

Fc1: Center frequency of emission of the first carrier transmitted by the BS.

Fc2: Center frequency of emission of the last carrier transmitted by the BS.

6.6.3.2 Protection of the BS receiver of own or different BS

This requirement shall be applied in order to prevent the receivers of the BSs being desensitised by emissions from a BS transmitter.

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

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	1920 - 1980MHz	-96 dBm	100 kHz	
II	1850-1910 MHz	-96 dBm	100 kHz	
III	1710-1785 MHz	-96 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 and GSM 900 BTS receivers in geographic areas in which both GSM 900 and UTRA FDD are deployed.

6.6.3.3.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.11: BS Spurious emissions limits for BS in geographic coverage area of GSM 900 MS and GSM 900 BTS receiver

Band	Maximum Level	Measurement Bandwidth	Note
876 – 915 MHz	-61 dBm	100 kHz	
921 - 960 MHz	-57 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 FDD BS are co-located.

6.6.3.3.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.12: BS Spurious emissions limits for protection of the GSM 900 BTS receiver

Band	Maximum Level	Measurement Bandwidth	Note
876-915 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 and DCS 1800 BTS receivers in geographic areas in which both DCS 1800 and UTRA FDD are deployed.

6.6.3.4.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.13: BS Spurious emissions limits for BS in geographic coverage area of DCS 1800 MS and DCS 1800 BTS receiver

Band	Maximum Level	Measurement Bandwidth	Note
1805 - 1880 MHz	-47 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in band III
1710 – 1785 MHz	-61 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in band III, since it is already covered by the requirement in sub-clause 6.6.3.2.

6.6.3.4.2 Co-located base stations

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

6.6.3.4.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.14: BS Spurious emissions limits for BS co-located with DCS 1800 BTS

Band	Maximum Level	Measurement Bandwidth	Note
1710 - 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 6.15: BS Spurious emissions limits for BS in geographic coverage area of PHS

Band	Maximum Level	Measurement Bandwidth	Note
1893.5 - 1919.6 MHz	-41 dBm	300 kHz	

6.6.3.6 Co-existence with services in adjacent frequency bands

This requirement may be applied for the protection in bands adjacent to bands I, II or III, as defined in clause 5.2 in geographic areas in which both an adjacent band service and UTRA FDD 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

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	2100-2105 MHz	-30 + 3.4 · (f - 2100 MHz) dBm	1 MHz	
	2175-2180 MHz	-30 + 3.4 · (2180 MHz - f) dBm	1 MHz	
II	1920-1925 MHz	-30 + 3.4 · (f - 1920 MHz) dBm	1 MHz	
	1995-2000 MHz	-30 +3.4 · (2000 MHz - f) dBm	1 MHz	
III	1795-1800 MHz	-30 + 3.4 · (f - 1795 MHz) dBm	1MHz	
	1885-1890 MHz	-30 +3.4 · (1890 MHz - f) dBm	1MHz	

6.6.3.7 Co-existence with UTRA-TDD

6.6.3.7.1 Operation in the same geographic area

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

6.6.3.7.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.17: BS Spurious emissions limits for BS in geographic coverage area of UTRA-TDD

Band	Maximum Level	Measurement Bandwidth	Note
1900 - 1920 MHz	-52 dBm	1 MHz	
2010 - 2025 MHz	-52 dBm	1 MHz	

6.6.3.7.2 Co-located base stations

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

6.6.3.7.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.18: BS Spurious emissions limits for BS co-located with UTRA-TDD

Band	Maximum Level	Measurement Bandwidth	Note
1900 - 1920 MHz	-86 dBm	1 MHz	
2010 - 2025 MHz	-86 dBm	1 MHz	

6.6.3.8 Co-existence with UTRA FDD in frequency band I

6.6.3.8.1 Operation in the same geographic area

This requirement may be applied for the protection of UTRA FDD UE and BS operating in frequency band I in geographic areas in which both UTRA FDD in frequency band I and UTRA-FDD in other bands are deployed.

6.6.3.8.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.19: BS Spurious emissions limits for BS in geographic coverage area of UTRA FDD UE receiver and BS receiver operating in frequency band I

Band	Maximum Level	Measurement Bandwidth	Note
2110 – 2170 MHz	-52 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band I
1920 – 1980 MHz	-49 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band I, since it is already covered by the requirement in sub-clause 6.6.3.2.

6.6.3.8.2 Co-located base stations

This requirement may be applied for the protection of UTRA FDD BS receivers operating in frequency band I when UTRA FDD BS operating in frequency band I and UTRA-FDD BS operating in other frequency bandsare co-located.

6.6.3.8.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.20: BS Spurious emissions limits for BS co-located with UTRA BS operating in frequency band I

Band	Maximum Level	Measurement Bandwidth	Note
1920 - 1980 MHz	-96 dBm	100 kHz	

6.6.3.9 Co-existence with UTRA FDD in frequency band III

6.6.3.9.1 Operation in the same geographic area

This requirement may be applied for the protection of UTRA FDD UE and BS operating in frequency band III in geographic areas in which both UTRA FDD in frequency band III and UTRA-FDD in other frequency bands are deployed.

6.6.3.9.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.21: BS Spurious emissions limits for BS in geographic coverage area of UTRA FDD UE receiver and BS receiver operating in frequency band III

Band	Maximum Level	Measurement Bandwidth	Note
1805 – 1880 MHz	-52 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band III
1710 – 1785 MHz	-49 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band III, since it is already covered by the requirement in sub-clause 6.6.3.2.

6.6.3.9.2 Co-located base stations

This requirement may be applied for the protection of UTRA FDD BS receivers operating in frequency band III when UTRA BS operating in frequency band III and UTRA-FDD BS operating in frequency bands are co-located.

6.6.3.9.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.22: BS Spurious emissions limits for BS co-located with UTRA BS operating in frequency band III

Band	Maximum Level	Measurement Bandwidth	Note
1710 – 1785 MHz	-96 dBm	100 kHz	

6.6.3.10 Co-existence with PCS1900

6.6.3.10.1 Operation in the same geographic area

This requirement may be applied for the protection of PCS 1900 BS and UE receiver in geographic areas in which both PCS 1900 and UTRA FDD BS are deployed.

6.6.3.10.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.22A: BS Spurious emissions limits for BS in geographic coverage area of PCS 1900 BS

Band	Maximum Level	Measurement Bandwidth	Note
1850 - 1910 MHz	-61 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in frequency band II, since it is already covered by the requirement in sub-clause 6.6.3.2.
1930 - 1990 MHz	-47 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in frequency band II

6.6.3.10.2 Co-located base stations

This requirement may be applied for the protection of PCS1900 BS receivers when UTRA FDD BS and PCS1900 BS are co-located.

6.6.3.10.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.23: BS Spurious emissions limits for BS co-located with PCS1900 BS

Band	Maximum Level	Measurement Bandwidth	Note
1850 – 1910 MHz	-98 dBm	100 kHz	

6.6.3.11 Co-existence with GSM850

6.6.3.11.1 Operation in the same geographic area

This requirement may be applied for the protection of GSM 850 MS and GSM 850 BS receiver in geographic areas in which both GSM 850 and UTRA FDD BS are deployed.

6.6.3.11.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.23A: BS Spurious emissions limits for BS in geographic coverage area of GSM 850

Band	Maximum Level	Measurement Bandwidth	Note
824 - 849 MHz	-61 dBm	100 kHz	
869 – 894 MHz	-57 dBm	100 kHz	

6.6.3.11.2 Co-located base stations

This requirement may be applied for the protection of GSM850 BS receivers when UTRA FDD BS and GSM850 BS are co-located.

6.6.3.11.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.24: BS Spurious emissions limits for BS co-located with GSM850 BS

Band	Maximum Level	Measurement Bandwidth	Note
824 - 849 MHz	-98 dBm	100 kHz	

6.7 Transmit intermodulation

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030886**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.104** **CR** **204** ⌘ **rev** ⌘ Current version: **6.3.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Correction of references to ITU recommendations
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/11/2003
Category:	⌘	**A**
Release:	⌘	Rel-6

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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	ITU recommendation SM329 was updated and renamed. Previous versions currently referenced in the specification are superseeded and cannot longer used as reference.
Summary of change:	⌘	References to SM329 are corrected.
Consequences if not approved:	⌘	**Isolated impact analysis:** The CR has no impact on Node-B or UE implementation as it corrects external references only.

Clauses affected:	⌘	2, 4.3, 6.6.3.1, 6.6.3.1.1, 6.6.3.1.1.1, 6.6.3.1.2, 6.6.3.1.2.1,

		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
		X		Test specifications		25.141
			X	O&M Specifications		

Other comments:	⌘	Equivalent CRs in other Releases: CR203 cat. F to 25.104 v5.7.0

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.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.

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] ITU-R Recommendation SM.329~~-9~~, "~~Spurious emissions~~Unwanted emissions in the spurious domain".

[2] (void)

[3] ETSI ETR 273-1-2: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".

[4] 3GPP TR 25.942 "RF System Scenarios".

[5] 3GPP TS 45.004: "Digital cellular telecommunications system (Phase 2+); Modulation".

[6] 3GPP TS 25.213: "Spreading and modulation (FDD)".

3 Definitions and abbreviations

--- NEXT CHANGED SECTION ---

4.3 Regional requirements

Some requirements in TS 25.104 may only apply in certain regions. Table 4.1 lists all requirements that may be applied differently in different regions.

Table 4.1: List of regional requirements

Clause number	Requirement	Comments
5.2	Frequency bands	Some bands may be applied regionally.
5.2 6.6.3.2 7.7	Frequency bands Protection of the BS receiver of own or different BS Spurious emissions	Band VI specifications are developed for use in Japan. The Band VI frequency ranges specified in clause 5.2 are subject to coming regulatory decisions.
5.3	Tx-Rx Frequency Separation	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
5.4	Channel arrangement	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
6.2.1	Base station maximum output power	In certain regions, the minimum requirement for normal conditions may apply also for some conditions outside the range of conditions defined as normal.
6.6.2.1	Spectrum emission mask	The mask specified may be mandatory in certain regions. In other regions this mask may not be applied.
6.6.3.1.1	Spurious emissions (Category A)	These requirements shall be met in cases where Category A limits for spurious emissions, as defined in ITU-R Recommendation SM.329~~-9~~ [1], are applied.
6.6.3.1.2	Spurious emissions (Category B)	These requirements shall be met in cases where Category B limits for spurious emissions, as defined in ITU-R Recommendation SM.329~~-9~~ [1], are applied.
6.6.3.3.1	Co-existence with GSM900 -Operation in the same geographic area	This requirement may be applied for the protection of GSM 900 MS and GSM 900 BTS in geographic areas in which both GSM 900 and UTRA FDD are deployed.
6.6.3.3.2	Co-existence with GSM900 - Co-located base stations	This requirement may be applied for the protection of GSM 900 BTS receivers when GSM 900 BTS and UTRA FDD BS are co-located.
6.6.3.4.1	Co-existence with DCS1800 -Operation in the same geographic area	This requirement may be applied for the protection of DCS 1800 MS and DCS 1800 BTS in geographic areas in which both DCS 1800 and UTRA FDD are deployed.
6.6.3.4.2	Co-existence with DCS1800 - Co-located base stations	This requirement may be applied for the protection of DCS 1800 BTS receivers when DCS 1800 BTS and UTRA FDD BS are co-located.
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 FDD are deployed.
6.6.3.6	Co-.existence with services in adjacent frequency bands	This requirement may be applied for the protection in bands adjacent to the downlink bands as defined in clause 5.2in geographic areas in which both an adjacent band service and UTRA FDD are deployed.

6.6.3.7.1	Co-existence with UTRA TDD - Operation in the same geographic area	This requirement may be applied to geographic areas in which both UTRA-TDD and UTRA-FDD are deployed.
6.6.3.7.2	Co-existence with UTRA TDD - Co-located base stations	This requirement may be applied for the protection of UTRA-TDD BS receivers when UTRA-TDD BS and UTRA FDD BS are co-located.
6.6.3.8.1	Co-existence with UTRA FDD in frequency band I -Operation in the same geographic area	This requirement may be applied for the protection of UTRA FDD UE in frequency band I in geographic areas in which both UTRA FDD in frequency band I and III are deployed.
6.6.3.8.2	Co-existence with UTRA FDDin frequency band I - Co-located base stations	This requirement may be applied for the protection of UTRA FDD BTS receivers in frequency band I when UTRA FDD BS in frequency band I and III are co-located.
6.6.3.9.1	Co-existence with UTRA FDD in frequency band III -Operation in the same geographic area	This requirement may be applied for the protection of UTRA FDD UE in frequency band I in geographic areas in which both UTRA FDD in frequency band I and III are deployed.
6.6.3.9.2	Co-existence with UTRA FDD in frequency band III - Co-located base stations	This requirement may be applied for the protection of UTRA FDD BTS receivers in frequency band I when UTRA FDD BS in frequency band I and III are co-located.
6.6.3.10.1	Co-existence with PCS1900 -Operation in the same geographic area	This requirement may be applied for the protection of PCS 1900 BTS receivers in geographic areas in which both PCS 1900 and UTRA FDD are deployed.
6.6.3.10.2	Co-existence with PCS1900 - Co-located base stations	This requirement may be applied for the protection of PCS 1900 BTS receivers when PCS 1900 BTS and UTRA FDD BS are co-located.
6.6.3.11.1	Co-existence with GSM850 -Operation in the same geographic area	This requirement may be applied for the protection of GSM 850 MS and GSM 850 BTS receivers in geographic areas in which both GSM 850 and UTRA FDD are deployed.
6.6.3.11.2	Co-existence with GSM850 - Co-located base stations	This requirement may be applied for the protection of GSM 850 BTS receivers when GSM 850 BTS and UTRA FDD BS are co-located.
7.4.2	Adjacent Channel Selectivity Co-location with UTRA-TDD	This requirement may be applied for the protection of UTRA-FDD BS receivers when UTRA-FDD BS and UTRA-TDD BS are co-located.
7.5	Blocking characteristic	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
7.5.2	Blocking characteristics Co-location with GSM900, DCS 1800, PCS1900 and/or UTRA	This requirement may be applied for the protection of UTRA FDD BS receivers when UTRA FDD BS and GSM 900, DCS1800, PCS1900, GSM850 and/or UTRA BS (operating in different frequency bands) are co-located.
7.5.3	Blocking characteristics Co-location with UTRA TDD	This requirement may be applied for the protection of UTRA FDD BS receivers when UTRA FDD BS and UTRA TDD BS are co-located.
7.6	Intermodulation characteristics	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
7.7	Spurious emissions	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
	Base station classes*	Only requirements for Wide Area (General Purpose) Base Stations shall be applied as regional requirements in Japan.
	HSDPA*	The portion of HSDPA(High Speed Downlink Packet Access) is not applicable to ARIB standards by the time when ARIB is prepared to transpose.

Note *: Base station classes, HSDPA: These regional requirements should be reviewed to check its necessity every TSG RAN meeting.

4.4 Environmental requirements for the BS equipment

--- NEXT CHANGED SECTION ---

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.

The requirements shall apply whatever the type of transmitter considered (single carrier or multiple-carrier). It applies for all transmission modes foreseen by the manufacturer's specification.

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 that are more than 12.5MHz below the first carrier frequency used or more than 12.5MHz above the last carrier frequency used.

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~~-9~~ [1], are applied.

6.6.3.1.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.8: BS Mandatory spurious emissions limits, Category A

Band	Maximum level	Measurement Bandwidth	Note
9kHz ~~-~~ 150kHz	-13 dBm	1 kHz	Bandwidth as in ITU-R SM.329~~-9~~ [1], s4.1
150kHz ~~-~~ 30MHz		10 kHz	Bandwidth as in ITU-R SM.329~~-9~~ [1], s4.1
30MHz - 1GHz		100 kHz	Bandwidth as in ITU-R SM.329~~-9~~ [1], s4.1
1GHz - 12.75 GHz		1 MHz	Upper frequency as in ITU-R SM.329~~-9~~ [1], s2.5 table 1

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~~-9~~ [1], are applied.

6.6.3.1.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.9: BS Mandatory spurious emissions limits, operating band I, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
1GHz ↔ Fc1 - 60 MHz or 2100 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
Fc1 - 60 MHz or 2100 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 2100 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 7
Fc1 - 50 MHz or 2100 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 2180 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 7
Fc2 + 50 MHz or 2180 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 2180 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 7
Fc2 + 60 MHz or 2180 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1. Upper frequency as in ITU-R SM.329-9 [1], s2.5 table 1

Table 6.9A: BS Mandatory spurious emissions limits, operating band II, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
1GHz ↔ Fc1 - 60 MHz or 1920 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
Fc1 - 60 MHz or 1920 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 1920 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 7
Fc1 - 50 MHz or 1920 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 2000 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 7
Fc2 + 50 MHz or 2000 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 2000 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 1
Fc2 + 60 MHz or 2000 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1. Upper frequency as in ITU-R SM.329-9 [1], s2.5 table 16

Table 6.9B: BS Mandatory spurious emissions limits, operating band III, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
1GHz ↔ Fc1 - 60 MHz or 1795 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1
Fc1 - 60 MHz or 1795 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 1795 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 7
Fc1 - 50 MHz or 1795 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 1890 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 7
Fc2 + 50 MHz or 1890 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 1890 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.3 and Annex 7
Fc2 + 60 MHz or 1890 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1. Upper frequency as in ITU-R SM.329-9 [1], s2.5 table 1

Fc1: Center frequency of emission of the first carrier transmitted by the BS.

Fc2: Center frequency of emission of the last carrier transmitted by the BS.

6.6.3.2 Protection of the BS receiver of own or different BS

This requirement shall be applied in order to prevent the receivers of the BSs being desensitised by emissions from a BS transmitter.

6.6.3.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

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

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	1920 - 1980MHz	-96 dBm	100 kHz	
II	1850-1910 MHz	-96 dBm	100 kHz	
III	1710-1785 MHz	-96 dBm	100 kHz	

Table 6.10A: Medium Range BS Spurious emissions limits for protection of the BS receiver

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	1920 - 1980MHz	-86 dBm	100 kHz	
II	1850-1910 MHz	-86 dBm	100 kHz	
III	1710-1785 MHz	-86 dBm	100 kHz	

Table 6.10B: Local Area BS Spurious emissions limits for protection of the BS receiver

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	1920 - 1980MHz	-82 dBm	100 kHz	
II	1850-1910 MHz	-82 dBm	100 kHz	
III	1710-1785 MHz	-82 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 and GSM 900 BTS receivers in geographic areas in which both GSM 900 and UTRA FDD are deployed.

6.6.3.3.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.11: BS Spurious emissions limits for BS in geographic coverage area of GSM 900 MS and GSM 900 BTS receivers

Band	Maximum Level	Measurement Bandwidth	Note
876 – 915 MHz	-61 dBm	100 kHz	
921 - 960 MHz	-57 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 FDD BS are co-located.

6.6.3.3.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.12: BS Spurious emissions limits for protection of the GSM 900 BTS receiver

BS class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	876-915 MHz	-98 dBm	100 kHz	
Medium Range BS	876-915 MHz	-91 dBm	100 kHz	
Local Area BS	876-915 MHz	-70 dBm	100 kHz	

These values assume a 30 dB coupling loss between transmitter and receiver. If BSs of different classes are co-sited, the coupling loss must be increased by the difference between the corresponding values from the table above.

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 and DCS 1800 BTS receivers in geographic areas in which both DCS 1800 and UTRA FDD are deployed.

6.6.3.4.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.13: BS Spurious emissions limits for BS in geographic coverage area of DCS 1800 MS and DCS 1800 BTS receivers

Band	Maximum Level	Measurement Bandwidth	Note
1805 - 1880 MHz	-47 dBm	100 kHz	This requirement does not apply to UTRA-FDD operating in band III
1710 – 1785 MHz	-61 dBm	100 kHz	This requirement does not apply to UTRA-FDD operating in band III, since it is already covered by the requirement in sub-clause 6.6.3.2.

6.6.3.4.2 Co-located base stations

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

6.6.3.4.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.14: BS Spurious emissions limits for BS co-located with DCS 1800 BTS

BS class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	1710 - 1785 MHz	-98 dBm	100 kHz	
Medium Range BS	1710 - 1785 MHz	-96 dBm	100 kHz	
Local Area BS	1710 - 1785 MHz	-80 dBm	100 kHz	

These values assume a 30 dB coupling loss between transmitter and receiver. If BSs of different classes are co-sited, the coupling loss must be increased by the difference between the corresponding values from the table above.

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 FDD are deployed.

6.6.3.5.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.15: BS Spurious emissions limits for BS in geographic coverage area of PHS

Band	Maximum Level	Measurement Bandwidth	Note
1893.5 - 1919.6 MHz	-41 dBm	300 kHz	

6.6.3.6 Co-existence with services in adjacent frequency bands

This requirement may be applied for the protection in bands adjacent to bands I, II or III, as defined in clause 5.2 in geographic areas in which both an adjacent band service and UTRA FDD 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

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	2100-2105 MHz	-30 + 3.4 · (f - 2100 MHz) dBm	1 MHz	
	2175-2180 MHz	-30 + 3.4 · (2180 MHz - f) dBm	1 MHz	
II	1920-1925 MHz	-30 + 3.4 · (f - 1920 MHz) dBm	1 MHz	
	1995-2000 MHz	-30 +3.4 · (2000 MHz - f) dBm	1 MHz	
III	1795-1800 MHz	-30 + 3.4 · (f - 1795 MHz) dBm	1MHz	
	1885-1890 MHz	-30 +3.4 · (1890 MHz - f) dBm	1MHz	

6.6.3.7 Co-existence with UTRA-TDD

6.6.3.7.1 Operation in the same geographic area

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

6.6.3.7.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.17: BS Spurious emissions limits for BS in geographic coverage area of UTRA-TDD

Band	Maximum Level	Measurement Bandwidth	Note
1900 - 1920 MHz	-52 dBm	1 MHz	
2010 - 2025 MHz	-52 dBm	1 MHz	

6.6.3.7.2 Co-located base stations

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

6.6.3.7.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.18: BS Spurious emissions limits for BS co-located with UTRA-TDD

BS class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	1900 - 1920 MHz	-86 dBm	1 MHz	
Local Area BS	1900 - 1920 MHz	-55 dBm	1 MHz	
Wide Area BS	2010 - 2025 MHz	-86 dBm	1 MHz	
Local Area BS	2010 - 2025 MHz	-55 dBm	1 MHz	

These values assume a 30 dB coupling loss between transmitter and receiver. If BSs of different classes are co-sited, the coupling loss must be increased by the difference between the corresponding values from the table above.

6.6.3.8 Co-existence with UTRA FDD in frequency band I

6.6.3.8.1 Operation in the same geographic area

This requirement may be applied for the protection of UTRA FDD UE and BS operating in frequency band I in geographic areas in which both UTRA FDD in frequency band I and UTRA FDD in other frequency bands are deployed.

6.6.3.8.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.19: BS Spurious emissions limits for BS in geographic coverage area of UTRA FDD UE receiver and BS receiver operating in frequency band I

Band	Maximum Level	Measurement Bandwidth	Note
2110 – 2170 MHz	-52 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band I,
1920 – 1980 MHz	-49 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band I, since it is already covered by the requirement in sub-clause 6.6.3.2.

6.6.3.8.2 Co-located base stations

This requirement may be applied for the protection of UTRA FDD BS receivers operating in frequency band I when UTRA FDD BS operating in frequency band I and UTRA FDD BS operating in other frequency bands are co-located.

6.6.3.8.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.20: BS Spurious emissions limits for BS co-located with UTRA FDD BS operating in frequency band I

Band	Maximum Level	Measurement Bandwidth	Note
1920 - 1980 MHz	-96 dBm	100 kHz	

6.6.3.9 Co-existence with UTRA FDD in frequency band III

6.6.3.9.1 Operation in the same geographic area

This requirement may be applied for the protection of UTRA FDD UE and BS operating in frequency band III in geographic areas in which both UTRA FDD in frequency band III and UTRA FDD in other frequency bands are deployed.

6.6.3.9.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.21: BS Spurious emissions limits for BS in geographic coverage area of UTRA FDD UE receiver and BS receiver operating in frequency band III

Band	Maximum Level	Measurement Bandwidth	Note
1805 – 1880 MHz	-52 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band III
1710 – 1785 MHz	-49 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band III, since it is already covered by the requirement in sub-clause 6.6.3.2.

6.6.3.9.2 Co-located base stations

This requirement may be applied for the protection of UTRA FDD BS receivers operating in frequency band III when UTRA FDD BS operating in frequency band III and UTRA-FDD BS operating in other frequency bands are co-located.

6.6.3.9.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.22: BS Spurious emissions limits for BS co-located with UTRA BS operating in frequency band III

Band	Maximum Level	Measurement Bandwidth	Note
1710 – 1785 MHz	-96 dBm	100 kHz	

6.6.3.10 Co-existence with PCS1900

6.6.3.10.1 Operation in the same geographic area

This requirement may be applied for the protection of PCS 1900 BS receiver in geographic areas in which both PCS 1900 and UTRA FDD are deployed.

6.6.3.10.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.22A: BS Spurious emissions limits for BS in geographic coverage area of PCS 1900 BS

Band	Maximum Level	Measurement Bandwidth	Note
1850 - 1910 MHz	-61 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in frequency band II, since it is already covered by the requirement in sub-clause 6.6.3.2.
1930 - 1990 MHz	-47 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in frequency band II

6.6.3.10.2 Co-located base stations

This requirement may be applied for the protection of PCS1900 BS receivers when UTRA FDD BS and PCS1900 BS are co-located.

6.6.3.10.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.23: BS Spurious emissions limits for BS co-located with PCS1900 BS

BS class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	1850 – 1910 MHz	-98 dBm	100 kHz	
Medium Range BS	1850 – 1910 MHz	-96 dBm	100 kHz	
Local Area BS	1850 – 1910 MHz	-80 dBm	100 kHz	

These values assume a 30 dB coupling loss between transmitter and receiver. If BSs of different classes are co-sited, the coupling loss must be increased by the difference between the corresponding values from the table above.

6.6.3.11 Co-existence with GSM850

6.6.3.11.1 Operation in the same geographic area

This requirement may be applied for the protection of GSM 850 MS and GSM 850 BS receiver in geographic areas in which both GSM 850 and UTRA FDD BS are deployed.

6.6.3.11.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.23A: BS Spurious emissions limits for BS in geographic coverage area of GSM 850

Band	Maximum Level	Measurement Bandwidth	Note
824 - 849 MHz	-61 dBm	100 kHz	
869 – 894 MHz	-57 dBm	100 kHz	

6.6.3.11.2 Co-located base stations

This requirement may be applied for the protection of GSM850 BS receivers when UTRA FDD BS and GSM850 BS are co-located.

6.6.3.11.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.24: BS Spurious emissions limits for BS co-located with GSM850 BS

BS class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	824 - 849 MHz	-98 dBm	100 kHz	
Medium Range BS	824 - 849 MHz	-91 dBm	100 kHz	
Local Area BS	824 - 849 MHz	-70 dBm	100 kHz	

These values assume a 30 dB coupling loss between transmitter and receiver. If BSs of different classes are co-sited, the coupling loss must be increased by the difference between the corresponding values from the table above.

6.7 Transmit intermodulation

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030880**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.105** **CR** **151** ⌘ **rev** ⌘ Current version: **5.4.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Correction of references to ITU recommendations
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/11/2003
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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	ITU recommendation SM329 was updated and renamed. Previous versions currently referenced in the specification are superseeded and cannot longer used as reference.
Summary of change:	⌘	References to SM329 are corrected.
Consequences if not approved:	⌘	**Isolated impact analysis:** The CR has no impact on Node-B or UE implementation as it corrects external references only.

Clauses affected:	⌘	2, 4.3, 6.6.3.1.1, 6.6.3.1.1.1.1, 6.6.3.1.1.1.2, 6.6.3.1.2, 6.6.3.1.2.1.1, 6.6.3.1.2.1.2

Other specs affected: ⌘	Y	N		⌘
		X	Other core specifications	
	X		Test specifications	25.142
		X	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/specs/CR.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.

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] ITU-R Recommendation SM.329~~-9~~ "~~Spurious emissions~~Unwanted emissions in the spurious domain".

[2] ETSI ETR 273-1-2: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".

[3] IEC 60721-3-3 (1994): "Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 3: Stationary use at weather protected locations".

[4] IEC 60721-3-4 (1995): "Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 4: Stationary use at non-weather protected locations".

[5] 3GPP TS 25.142: "Base station conformance testing (TDD)".

3 Definitions, symbols and abbreviations

--- NEXT CHANGED SECTION ---

4.3 Regional requirements

Some requirements in TS 25.105 may only apply in certain regions. Table 4.1 lists all requirements that may be applied differently in different regions.

Table 4.1: List of regional requirements.

Clause number	Requirement	Comments
5.2	Frequency bands	Some bands may be applied regionally.
6.2.1	Base station maximum output power	In certain regions, the minimum requirement for normal conditions may apply also for some conditions outside the range of conditions defined as normal.
6.6.2.1	Spectrum emission mask	The mask specified may be mandatory in certain regions. In other regions this mask may not be applied.
6.6.3.1.1	Spurious emissions (Category A)	These requirements shall be met in cases where Category A limits for spurious emissions, as defined in ITU-R Recommendation SM.329~~-9~~ [1], are applied.
6.6.3.1.2	Spurious emissions (Category B)	These requirements shall be met in cases where Category B limits for spurious emissions, as defined in ITU-R Recommendation SM.329~~-9~~ [1], are applied.
6.6.3.2.1	Co-existence with GSM900 – Operation in the same geographic area	This requirement may be applied for the protection of GSM 900 MS and GSM 900 BTS in geographic areas in which both GSM 900 and UTRA are deployed.
6.6.3.2.2	Co-existence with GSM900 – 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.
6.6.3.3.1	Co-existence with DCS1800 – Operation in the same geographic area	This requirement may be applied for the protection of DCS 1800 MS and DCS 1800 BTS in geographic areas in which both DCS 1800 and UTRA are deployed.
6.6.3.3.2	Co-existence with DCS1800 – Co-located base stations	This requirement may be applied for the protection of DCS 1800 BTS receivers when DCS 1800 BTS and UTRA BS are co-located.
6.6.3.4.1	Co-existence with UTRA FDD – Operation in the same geographic area	This requirement may be applied to geographic areas in which both UTRA-TDD and UTRA-FDD are deployed.
6.6.3.4.2	Co-existence with UTRA FDD – 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.
7.5	Blocking characteristic	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
7.5.1	Blocking characteristic Co-location with GSM900 and/or DCS 1800	This requirement may be applied for the protection of UTRA TDD BS receivers when UTRA TDD BS and GSM 900/DCS1800 BS are co-located.

4.4 Environmental requirements for the BS equipment

--- NEXT CHANGED SECTION ---

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.

The requirements shall apply whatever the type of transmitter considered (single carrier or multi carrier). It applies for all transmission modes foreseen by the manufacturer's.

For 3.84 Mcps TDD option, either requirement applies at frequencies within the specified frequency ranges which are more than 12.5 MHz under the first carrier frequency used or more than 12.5 MHz above the last carrier frequency used.

For 1.28 Mcps TDD option, either requirement applies at frequencies within the specified frequency ranges which are more than 4 MHz under the first carrier frequency used or more than 4 MHz above the last carrier frequency used.

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.

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.329-9 [1], are applied.

6.6.3.1.1.1 Minimum Requirement

6.6.3.1.1.1.1 3,84 Mcps TDD Option

The power of any spurious emission shall not exceed:

Table 6.10: BS Mandatory spurious emissions limits, Category A

Band	Minimum requirement	Measurement Bandwidth	Note
9kHz – 150kHz	-13 dBm	1 kHz	Bandwidth as in ITU SM.329-9 [1], s4.1
150kHz – 30MHz		10 kHz	Bandwidth as in ITU SM.329-9 [1], s4.1
30MHz – 1GHz		100 kHz	Bandwidth as in ITU SM.329-9 [1], s4.1
1GHz – 12.75 GHz		1 MHz	Upper frequency as in ITU SM.329-9 [1], s2.5 table 1

6.6.3.1.1.1.2 1,28 Mcps TDD Option

The power of any spurious emission shall not exceed:

Table 6.10A: BS Mandatory spurious emissions limits, Category A

Band	Minimum requirement	Measurement Bandwidth	Note
9kHz – 150kHz	-13 dBm	1 kHz	Bandwidth as in ITU SM.329-9 [1], s4.1
150kHz – 30MHz		10 kHz	Bandwidth as in ITU SM.329-9 [1], s4.1
30MHz – 1GHz		100 kHz	Bandwidth as in ITU SM.329-9 [1], s4.1
1GHz – 12.75 GHz		1 MHz	Upper frequency as in ITU SM.329-9 [1], s2.5 table 1

NOTE: only the measurement bands are different according to the occupied bandwidth.

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.329-9 [1], are applied.

6.6.3.1.2.1 Minimum Requirement

6.6.3.1.2.1.1 3,84 Mcps TDD Option

The power of any spurious emission shall not exceed:

Table 6.11: BS Mandatory spurious emissions limits, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz – 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU SM.329-~~9~~ [1], s4.1
150kHz – 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU SM.329-~~9~~ [1], s4.1
30MHz – 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU SM.329-~~9~~ [1], s4.1
1GHz ↔ Fc1-60 MHz or Fl -10 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU SM.329-~~9~~ [1], s4.1
Fc1 - 60 MHz or Fl -10 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or Fl -10 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-~~9~~ [1], s4.3 and Annex 7
Fc1 - 50 MHz or Fl -10 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or Fu +10 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329-~~9~~ [1], s4.3 and Annex 7
Fc2 + 50 MHz or Fu + 10 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or Fu + 10 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-~~9~~ [1], s4.3 and Annex 7
Fc2 + 60 MHz or Fu + 10 MHz *whichever is the lower* ↔ 12,75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-~~9~~ [1], s4.3 and Annex 7. Upper frequency as in ITU-R SM.329-~~9~~ [1], s2.5 table 1

Fc1: Center frequency of emission of the first carrier transmitted by the BS

Fc2: Center frequency of emission of the last carrier transmitted by the BS

Fl : Lower frequency of the band in which TDD operates

Fu : Upper frequency of the band in which TDD operates

6.6.3.1.2.1.2 1,28 Mcps TDD Option

The power of any spurious emission shall not exceed:

Table 6.11A: BS Mandatory spurious emissions limits, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz – 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU SM.329-9 [1], s4.1
150kHz – 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU SM.329-9 [1], s4.1
30MHz – 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU SM.329-9 [1], s4.1
1GHz ↔ Fc1-19.2 MHz or Fl –10 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU SM.329-9 [1], s4.1
Fc1 – 19.2 MHz or Fl -10MHz *whichever is the higher* ↔ Fc1 - 16 MHz or Fl –10 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.1
Fc1 - 16 MHz or Fl –10 MHz *whichever is the higher* ↔ Fc2 + 16 MHz or Fu +10 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.1
Fc2 + 16 MHz or Fu + 10MHz *whichever is the lower* ↔ Fc2 +19.2 MHz or Fu + 10MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [1], s4.1
Fc2 + 19.2 MHz or Fu +10 MHz *whichever is the lower* ↔ 12,5 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9 [1], s4.1. Upper frequency as in ITU-R SM.329-9 [1], s2.5 table 1

Fc1: Center frequency of emission of the first carrier transmitted by the BS

Fc2: Center frequency of emission of the last carrier transmitted by the BS

Fl : Lower frequency of the band in which TDD operates

Fu : Upper frequency of the band in which TDD operates

6.6.3.2 Co-existence with GSM 900

6.6.3.2.1 Operation in the same geographic area

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

6.6.3.2.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.12: BS Spurious emissions limits for BS in geographic coverage area of GSM 900 MS and GSM 900 BTS receiver

Band	Maximum Level	Measurement Bandwidth	Note
876 – 915 MHz	–61 dBm	100 kHz	
921 – 960MHz	-57 dBm	100 kHz	

6.6.3.2.2 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.

6.6.3.2.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.13: BS Spurious emissions limits for protection of the GSM 900 BTS receiver

Band	Maximum Level	Measurement Bandwidth	Note
876 – 915 MHz	–98 dBm	100 kHz	

6.6.3.3 Co-existence with DCS 1800

6.6.3.3.1 Operation in the same geographic area

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

6.6.3.3.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.14: BS Spurious emissions limits for BS in geographic coverage area of DCS 1800 MS and DCS 1800 BTS receiver

Band	Maximum Level	Measurement Bandwidth	Note
1710 – 1785 MHz	-61 dBm	100 kHz	
1805 – 1880MHz	-47 dBm	100 kHz	

6.6.3.3.2 Co-located base stations

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

6.6.3.3.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.15: BS Spurious emissions limits for BS co-located with DCS 1800 BTS

Band	Maximum Level	Measurement Bandwidth	Note
1710 – 1785 MHz	-98 dBm	100 kHz	

6.6.3.4 Co-existence with UTRA-FDD

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
Local Area BS	1920 – 1980 MHz	-40 dBm (*)	3,84 MHz
Local Area BS	2110 – 2170 MHz	-52 dBm	1 MHz
NOTE* For 3.84 Mcps TDD option base stations, the requirement shall be measured 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, the requirement shall be measured 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: 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].

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
NOTE * For 3.84 Mcps TDD option base stations, the requirement shall be measured 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, the requirement shall be measured 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: 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.

6.6.3.5 Co-existence with unsynchronised TDD

6.6.3.5.1 Operation in the same geographic area

This requirement shall apply in case the equipment is operated in the same geographic area with unsynchronised TDD BS.

6.6.3.5.1.1 Minimum Requirement

6.6.3.5.1.1.1 3,84 Mcps TDD option

The 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
Local Area BS	1900 – 1920 MHz	–36 dBm	3,84 MHz
Local Area BS	2010 – 2025 MHz	–36 dBm	3,84 MHz

NOTE: The requirements in Table 6.18 for the Wide Area BS are based on a minimum coupling loss of 67 dB between unsynchronised TDD base stations. The requirements in Table 6.18 for the Local Area BS are based on a coupling loss of 70 dB between unsynchronised Wide Area and Local Area TDD base stations. The scenarios leading to these requirements are addressed in TR25.942 [4].

6.6.3.5.1.1.2 1,28 Mcps TDD option

In geographic areas where only 1,28 Mcps TDD is deployed, the power of any spurious emission shall not exceed the limits specified in table 6.19, otherwise the limits in table 6.20 shall apply.

Table 6.19: BS Spurious emissions limits for operation in same geographic area with unsynchronised 1,28 Mcps TDD

BS Class	Band	Maximum Level	Measurement Bandwidth
Wide Area BS	1900 – 1920 MHz	–39 dBm	1,28 MHz
Wide Area BS	2010 – 2025 MHz	–39 dBm	1,28 MHz
Local Area BS	1900 – 1920 MHz	–36 dBm	1,28 MHz
Local Area BS	2010 – 2025 MHz	–36 dBm	1,28 MHz

Table 6.20: 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
Local Area BS	1900 – 1920 MHz	–36 dBm	3,84 MHz
Local Area BS	2010 – 2025 MHz	–36 dBm	3,84 MHz

NOTE: The requirements in Table 6.19 and 6.20 for the Wide Area BS are based on a minimum coupling loss of 67 dB between unsynchronised TDD base stations. The requirements in Table 6.19 and 6.20 for the Local Area BS are based on a coupling loss of 70 dB between unsynchronised Wide Area and Local Area TDD base stations. The scenarios leading to these requirements are addressed in TR25.942 [4].

6.6.3.5.2 Co-located base stations

This requirement shall apply in case of co-location with unsynchronised TDD BS.

6.6.3.5.2.1 Minimum Requirement

6.6.3.5.2.1.1 3,84 Mcps TDD option

The 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
Local Area BS	1900 – 1920 MHz	–36 dBm	3,84 MHz
Local Area BS	2010 – 2025 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.

6.6.3.5.2.1.2 1,28 Mcps TDD option

In geographic areas where only 1,28 Mcps TDD is deployed, the power of any spurious emission in case of co-location shall not exceed the limits specified in table 6.22, otherwise the limits in table 6.23 shall apply.

Table 6.22: BS Spurious emissions limits for co-location with unsynchronised 1,28 Mcps TDD

BS Class	Band	Maximum Level	Measurement Bandwidth
Wide Area BS	1900 – 1920 MHz	–76 dBm	1,28 MHz
Wide Area BS	2010 – 2025 MHz	–76 dBm	1,28 MHz
Local Area BS	1900 – 1920 MHz	–37 dBm	1,28 MHz
Local Area BS	2010 – 2025 MHz	–37 dBm	1,28 MHz

Table 6.23: 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
Local Area BS	1900 – 1920 MHz	–36 dBm	3,84 MHz
Local Area BS	2010 – 2025 MHz	–36 dBm	3,84 MHz

NOTE: The requirements in Table 6.22 and 6.23 for the Wide Area BS are based on a minimum coupling loss of 30 dB between unsynchronised TDD base stations. The requirements in Table 6.22 and 6.23 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.

6.7 Transmit intermodulation

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030881**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.106** **CR** **027** ⌘ **rev** ⌘ Current version: **5.6.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Correction of references to ITU recommendations
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/11/2003
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
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2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	ITU recommendation SM329 was updated and renamed. Previous versions currently referenced in the specification are superseeded and cannot longer used as reference.
Summary of change:	⌘	References to SM329 are corrected.
Consequences if not approved:	⌘	**Isolated impact analysis:** The CR has no impact on repeater implementation as it corrects external references only.

Clauses affected:	⌘	2,			
Other specs affected:	⌘	**Y** / **N**		⌘	
		☐ / ☒	Other core specifications		25.143
		☒ / ☐	Test specifications		
		☐ / ☒	O&M Specifications		
Other comments:	⌘				

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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] ITU-R Recommendation SM.329~~-9~~: "~~Spurious emissions~~Unwanted emissions in the spurious domain".

[2] 3GPP TS 25.143: "UTRA Repeater Conformance Testing".

[3] 3GPP TS 25.113: "Base Station and Repeater Electromagnetic Compatibility".

[4] ETSI ETR 273-1-2: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".

3 Definitions, symbols and abbreviations

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-031050**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.113** **CR** **022** ⌘ **rev** ⌘ Current version: **5.4.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☒ Core Network ☐

Title:	⌘	Correction of references to ITU recommendations
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/11/2003
Category:	⌘	**F**
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Use one of the following releases:

2	*(GSM Phase 2)*
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Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	ITU recommendation SM329 was updated and renamed. Previous versions currently referenced in the specification are superseeded and cannot longer used as reference.
Summary of change:	⌘	References to SM329 are corrected.
Consequences if not approved:	⌘	**Isolated impact analysis:** The CR has no impact on Node-B or UE implementation as it corrects external references only.

Clauses affected:	⌘	2, 7.1, 8.3.1.2.1, 8.3.1.2.2, 8.3.1.3,

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments:	⌘	

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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.
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[1] 3GPP TS 25.104: "UTRA (BS) FDD; Radio transmission and reception".

[2] 3GPP TS 25.105: "UTRA (BS) TDD; Radio transmission and reception".

[3] 3GPP TS 25.141: "UTRA (BS) FDD; Base station conformance testing (FDD)".

[4] 3GPP TS 25.142: "UTRA (BS) TDD; Base station conformance testing (TDD)

[5] IEC 61000-6-1: 1997; “Electromagnetic compatibility (EMC) – Part 6: Generic standards – Section 1: Immunity for residential, commercial and light-industrial environments”

[6] IEC 61000-6-3: 1996; “Electromagnetic compatibility (EMC) – Part 6: Generic standards – Section 3: mission standard for residential, commercial and light industrial environments”.

[7] IEC 60050(161): "International Electrotechnical Vocabulary - Chapter 161: Electromagnetic compatibility".

[8] 3GPP TS 25.101: "UTRA (UE) FDD; UE Radio transmission and reception (FDD)"

[9] 3GPP TS 25.102: "UTRA (UE) TDD: UE Radio transmission and reception (TDD)"

[10] 3GPP TS 25.106: "UTRA Repeater; Radio Transmission and Reception"

[11] 3GPP TS 25.143: "UTRA Repeater conformance testing"

[12] ITU-R Rec. SM.329~~-9~~: "~~Spurious emissions~~Unwanted emissions in the spuious domain"

[13] CISPR 22: "Limits and methods of measurement of radio disturbance characteristics of information technology equipment".

[14] CISPR 16-1): "Specification for radio disturbance and immunity measuring apparatus and methods".

[15] IEC 61000-3-2 (2000): "Electromagnetic compatibility (EMC) - Part 3: Limits – Section 2: Limits for harmonic current emissions (equipment input current ≤ 16 A) ".

[16] IEC 61000-3-3 (1995): "Electromagnetic compatibility (EMC) - Part 3: Limits – Section 3: Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current ≤ 16 A"

[17] IEC 61000-4-2: " Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques – Section 2: Electrostatic discharge immunity test".

[18] IEC 61000-4-3: " Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques – Section 3: Radiated, radio-frequency electromagnetic field immunity test".

[19] IEC 61000-4-4: " Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques – Section 4: Electrical fast transient/burst immunity test".

[20] IEC 61000-4-5: " Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques – Section 5: Surge immunity test".

[21] IEC 61000-4-6: " Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques – Section 6: Immunity to contacted disturbances, induced by radio frequency fields".

[22] IEC 61000-4-11 : " Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques – Section 11: Voltage dips, short interruptions and voltage variations. Immunity tests".

[23] ITU-R Recommendation SM.1539 (2001): "Variation of the boundary between the out-of-band and spurious domains required for the application of Recommendations ITU-R SM.1541 and ITU-R SM.329".

[24] 3GPP TR 21.905: “3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Vocabulary for 3GPP Specifications”.

3 Definitions, symbols and abbreviations

--- next changed section ---

7 Applicability overview

7.1 Emission

Table 3: Emission applicability

Phenomenon	Application	Equipment test requirement			Reference subclause in the present document	Reference Standard
		BS equipment	Ancillary equipment	Repeater		
Radiated emission	Enclosure	applicable		applicable	8.3.1	ITU-R SM.329~~-9~~ [12]
Radiated emission	Enclosure		applicable		8.3.2	CISPR 22 [13]
Conducted emission	DC power input/output port	applicable	applicable	applicable	8.4	CISPR 22 [13], CISPR 16-1 [14]
Conducted emission	AC mains input/output port	applicable	applicable	applicable	8.5	CISPR 22 [13]
Harmonic current emissions	AC mains input port	applicable	applicable	applicable	8.6	IEC 61000-3-2 [15]
Voltage fluctuations and flicker	AC mains input port	applicable	applicable	applicable	8.7	IEC 61000-3-3 [16]
Conducted emission	Telecommunica-tion port	applicable	applicable	applicable	8.8	CISPR 22 [13]

NOTE: spurious emissions from antenna connector shall be measured according to TS 25.141 [3] and TS 25.142 [4] and TS 25.143 [11].

7.2 Immunity

--- next changed section ---

8.3 Radiated emission from Base station, Repeater and ancillary equipment

8.3.1 Radiated emission, Base stations and Repeater

This test is applicable to Base station and Repeater. This test shall be performed on a representative configuration of the Base station or Repeater.

8.3.1.1 Definition

This test assesses the ability of BS and Repeater to limit unwanted emission from the enclosure port.

8.3.1.2 Test method

8.3.1.2.1 FDD and 3,84 Mcps TDD option

a) A test site fulfilling the requirements of ITU-R SM. 329~~-9~~ [12] shall be used. The BS or Repeater shall be placed on a non-conducting support and shall be operated from a power source via a RF filter to avoid radiation from the power leads.

Average power of any spurious components shall be detected by the test antenna and measuring receiver (e.g. a spectrum analyser). At each frequency at which a component is detected, the BS or Repeater shall be rotated and the height of the test antenna adjusted to obtain maximum response, and the effective radiated power (e.r.p.) of that component determined by a substitution measurement. The measurement shall be repeated with the test antenna in the orthogonal polarization plane.

NOTE: Effective radiated power (e.r.p.) refers to the radiation of a half wave tuned dipole instead of an isotropic antenna. There is a constant difference of 2,15 dB between e.i.r.p. and e.r.p.

e.r.p. (dBm) = e.i.r.p. (dBm) – 2,15Ref: ITU-R SM.329~~-9~~ ANNEX 1 [12].

b) The BS shall transmit with maximum power declared by the manufacturer with all transmitters active. Set the base station to transmit a signal as stated for measurement of spurious emission for FDD in the TS25.141 [3] and for 3.84 Mcps TDD option in the TS25.142 [4].

In case of a Repeater the gain and the output power shall be set to the maximum value as declared by the manufacturer.

c) The received power shall be measured over the frequency range 30 MHz to 12.75 GHz, excluding 12.5MHz below the first carrier frequency to 12.5 MHz above the last carrier frequency used. The measurement bandwidth shall be 100 kHz between 30 MHz and 1 GHz and 1 MHz above 1 GHz as given in ITU-R SM.329~~-9~~ [12]. The video bandwidth shall be approximately three times the resolution bandwidth. If this video bandwidth is not available on the measuring receiver, it shall be the maximum available and at least 1 MHz.

8.3.1.2.2 1,28 Mcps TDD option

a) A test site fulfilling the requirements of ITU-R SM. 329~~-9~~ [12] shall be used. The BS shall be placed on a non-conducting support and shall be operated from a power source via a RF filter to avoid radiation from the power leads.

Radiated power of any spurious components shall be detected by the test antenna and measuring receiver (e.g. a spectrum analyser). At each frequency at which a component is detected, the BS shall be rotated and the height of the test antenna adjusted to obtain maximum response, and the effective radiated power (e.r.p.) of that

component determined by a substitution measurement. The measurement shall be repeated with the test antenna in the orthogonal polarisation plane.

NOTE: Effective radiated power (e.r.p.) refers to the radiation of a half wave tuned dipole instead of an isotropic antenna. There is a constant difference of 2,15 dB between e.i.r.p. and e.r.p.

e.r.p. (dBm) = e.i.r.p. (dBm) – 2,15Ref: ITU-R SM.329-~~9~~ ANNEX 1 [12].

b) The BS shall transmit with maximum power declared by the manufacturer with all transmitters active. Set the base station to transmit a signal as stated for measurement of spurious emission for 1.28 Mcps TDD in the TS25.142 [4].

c) The received power shall be measured over the frequency range 30 MHz to 12.75 GHz, excluding 4MHz below the first carrier frequency to 4 MHz above the last carrier frequency used. The measurement bandwidth shall be 100 kHz between 30 MHz and 1 GHz and 1 MHz above 1 GHz as given in ITU-R SM.329-~~9~~ [12]. The video bandwidth shall be approximately three times the resolution bandwidth. If this video bandwidth is not available on the measuring receiver, it shall be the maximum available and at least 1 MHz.

8.3.1.3 Limits

The frequency boundary and reference bandwidths for the detailed transitions of the limits between the requirements for out of band emissions and spurious emissions are based on ITU-R Recommendations SM.329-~~9~~ [12] and SM.1539 [23].

8.3.1.3.1 FDD and 3,84 Mcps TDD option

The BS or the Repeater shall meet the limits below:

Table 5: Limits for radiated emissions from BS and repeater

Frequency range	Minimum requirement (e.r.p.)/Reference Bandwidth
30 MHz≤ f <1000 MHz	-36 dBm/100 kHz
1 GHz≤ f <12,75 GHz	-30 dBm/ 1MHz
Fc1 – 12,5 MHz < f < Fc2+12,5 MHz	Not defined

Key:

Fc1: Center frequency of first carrier frequency used by the BS and repeater.

Fc2: Center frequency of last carrier frequency used by the BS and repeater.

8.3.1.3.2 1,28 Mcps TDD option

The BS shall meet the limits below:

Table 5A: Limits for radiated emissions from BS

Frequency range	Minimum requirement (e.r.p.)/Reference Bandwidth
30 MHz≤ f <1000 MHz	-36 dBm/100 kHz
1 GHz≤ f <12,75 GHz	-30 dBm/ 1MHz
Fc1 – 4 MHz < f < Fc2+4 MHz	Not defined

Key:

Fc1: Center frequency of first carrier frequency used by the BS.

Fc2: Center frequency of last carrier frequency used by the BS.

8.3.1.4 Interpretation of the measurement results

The interpretation of the results recorded in a test report for the radiated emission measurements described in the present document shall be as follows:

- the measured value related to the corresponding limit will be used to decide whether an equipment meets the requirements of the present document;
- the value of the measurement uncertainty for the measurement of each parameter shall be included in the test report;
- the recorded value of the measurement uncertainty shall be, for each measurement, equal to or lower than the figures in table 5B for BS and repeater.

Table 5B specifies the Maximum measurement uncertainty of the Test System. The Test System shall enable the equipment under test to be measured with an uncertainty not exceeding the specified values. All tolerances and uncertainties are absolute values, and are valid for a confidence level of 95 %, unless otherwise stated.

A confidence level of 95% is the measurement uncertainty tolerance interval for a specific measurement that contains 95% of the performance of a population of test equipment.

Table 5B: Maximum measurement uncertainty (BS, and Repeater)

Parameter	Uncertainty for EUT dimension ≤ 1 m	Uncertainty for EUT dimension >1 m
Effective radiated RF power between 30 MHz to 180 MHz	±6 dB	±6 dB
Effective radiated RF power between 180 MHz to 4 GHz	±4 dB	±6 dB
Effective radiated RF power between 4 GHz to 12,75 GHz	±6 dB	±9* dB
*Note: This value may be reduced to ±6 dB when further information on the potential radiation characteristic of the EUT is available.		

NOTE: If the Test System for a test is known to have a measurement uncertainty greater than that specified in table 5B, this equipment can still be used, provided that an adjustment is made follows:

Any additional uncertainty in the Test System over and above that specified in table 5B is used to tighten the Test Requirements - making the test harder to pass. This procedure will ensure that a Test System not compliant with table 5B does not increase the probability of passing an EUT that would otherwise have failed a test if a Test System compliant with table 5B had been used.

8.3.2 Radiated emission, Ancillary equipment

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030882**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.141** **CR** **324** ⌘ **rev** ⌘ Current version: **5.7.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Correction of references to ITU recommendations
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/11/2003
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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	ITU recommendation SM329 was updated and renamed, ITU recommendation SM328 was also updated. Previous versions currently referenced in the specification are superseeded and cannot longer used as reference.
Summary of change:	⌘	References to SM329 and SM328 are corrected.
Consequences if not approved:	⌘	**Isolated impact analysis:** The CR has no impact on Node-B or UE implementation as it corrects external references only.

Clauses affected:	⌘	2, 4.7, 6.5.1.3, 6.5.3.4.1, 6.5.3.4.2,			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Equivalent CRs in other Releases: CR325 cat. A to 25.141 v6.3.0			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.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.

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] 3GPP TS 25.104: "UTRA(BS) FDD; Radio transmission and Reception".

[2] 3GPP TS 25.942: "RF system scenarios".

[3] 3GPP TS 25.113: "Base station EMC".

[4] ITU-R recommendation SM.329~~-9~~: "~~Spurious emissions~~Unwanted Emissions in the spurious domain".

[5] ITU-T recommendation O.153: "Basic parameters for the measurement of error performance at bit rates below the primary rate".

[6] IEC 60721-3-3 (1994): "Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 3: Stationary use at weather protected locations".

[7] IEC 60721-3-4 (1995): "Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 4: Stationary use at non-weather protected locations".

[8] IEC 60068-2-1 (1990): "Environmental testing - Part 2: Tests. Tests A: Cold".

[9] IEC 60068-2-2 (1974): "Environmental testing - Part 2: Tests. Tests B: Dry heat".

[10] IEC 60068-2-6 (1995): "Environmental testing - Part 2: Tests - Test Fc: Vibration (sinusoidal)".

[11] ITU-R recommendation SM.328~~-9~~: "Spectra and bandwidth of emissions".

[12] 3GPP TS 45.004: "Digital cellular telecommunications system (Phase 2+); Modulation".

[13] 3GPP TS 25.214: "Physical layer procedures (FDD)"

[14] 3GPP TS 25.213: "Spreading and modulation (FDD)".

3 Definitions and abbreviations

--- NEXT CHANGED SECTION ---

4.7 Regional requirements

Some requirements in TS 25.141 may only apply in certain regions. Table 4.4 lists all requirements that may be applied differently in different regions.

Table 4.4: List of regional requirements

Subclause number	Requirement	Comments
3.4.1	Frequency bands	Some bands may be applied regionally.
3.4.2	Tx-Rx Frequency Separation	The requirement is applied according to what frequency bands in clause 3.4.1 that are supported by the BS.
3.5.	Channel arrangement	The requirement is applied according to what frequency bands in clause 3.4.1 that are supported by the BS.
6.2.1.2	Base station output power	In certain regions, the minimum requirement for normal conditions may apply also for some conditions outside the ranges defined for the Normal test environment in subclause 4.4.1.
6.5.2.1	Spectrum emission mask	The mask specified may be mandatory in certain regions. In other regions this mask may not be applied.
6.5.3.4.1	Spurious emissions (Category A)	These requirements shall be met in cases where Category A limits for spurious emissions, as defined in ITU-R Recommendation SM.329- [4], are applied.
6.5.3.4.2	Spurious emissions (Category B)	These requirements shall be met in cases where Category B limits for spurious emissions, as defined in ITU-R Recommendation SM.329- [4], are applied.
6.5.3.4.4.1	Co-existence with GSM900 – Operation in the same geographic area	This requirement may be applied for the protection of GSM 900 MS and GSM 900 BTS in geographic areas in which both GSM 900 and UTRA FDD are deployed.
6.5.3.4.4.2	Co-existence with GSM900 – Co-located base stations	This requirement may be applied for the protection of GSM 900 BTS receivers when GSM 900 BTS and UTRA FDD BS are co-located.
6.5.3.4.5.1	Co-existence with DCS1800 – Operation in the same geographic area	This requirement may be applied for the protection of DCS 1800 MS and DCS 1800 BTS in geographic areas in which both DCS 1800 and UTRA FDD are deployed.
6.5.3.4.5.2	Co-existence with DCS1800 – Co-located base stations	This requirement may be applied for the protection of DCS 1800 BTS receivers when DCS 1800 BTS and UTRA FDD BS are co-located.
6.5.3.4.6	Co-existence with PHS	This requirement may be applied for the protection of PHS in geographic areas in which both PHS and UTRA FDD are deployed.
6.5.3.4.7	Co-.existence with services in adjacent frequency bands	This requirement may be applied for the protection in bands adjacent to the downlink band as defined in clause 3.4.1 in geographic areas in which both an adjacent band service and UTRA FDD are deployed.
6.5.3.4.8.1	Co-existence with UTRA TDD – Operation in the same geographic area	This requirement may be applied to geographic areas in which both UTRA-TDD and UTRA-FDD are deployed.
6.5.3.4.8.2	Co-existence with UTRA TDD – Co-located base stations	This requirement may be applied for the protection of UTRA-TDD BS receivers when UTRA-TDD BS and UTRA FDD BS are co-located.
6.5.3.4.9.1	Co-existence with UTRA FDD in frequency band I -Operation in the same geographic area	This requirement may be applied for the protection of UTRA FDD UE in frequency band I in geographic areas in which both UTRA FDD in frequency band I and III are deployed.
6.5.3.4.9.2	Co-existence with UTRA FDD in frequency band I - Co-located base stations	This requirement may be applied for the protection of UTRA FDD BTS receivers in frequency band I when UTRA FDD BS in frequency band I and III are co-located.
6.5.3.4.10.1	Co-existence with UTRA FDD in frequency band III -Operation in the same geographic area	This requirement may be applied for the protection of UTRA FDD UE in frequency band III in geographic areas in which both UTRA FDD in frequency band I and III are deployed.
6.5.3.4.10.2	Co-existence with UTRA FDD in frequency band III - Co-located base stations	This requirement may be applied for the protection of UTRA FDD BTS receivers in frequency band III when UTRA FDD BS in frequency band I and III are co-located.

6.5.3.4.11.1	Co-existence with PCS1900 - Operation in the same geographic area	This requirement may be applied for the protection of PCS 1900 BTS receivers in geographic areas in which both PCS 1900 and UTRA FDD are deployed.
6.5.3.4.11.2	Co-existence with PCS1900 - Co-located base stations	This requirement may be applied for the protection of PCS 1900 BTS receivers when PCS 1900 BTS and UTRA FDD BS are co-located.
6.5.3.4.12.1	Co-existence with GSM850 - Operation in the same geographic area	This requirement may be applied for the protection of GSM 850 MS and GSM 850 BTS receivers in geographic areas in which both GSM 850 and UTRA FDD are deployed.
6.5.3.4.12.2	Co-existence with GSM 850 - Co-located base stations	This requirement may be applied for the protection of GSM 850 BTS receivers when GSM 850 BTS and UTRA FDD BS are co-located.
7.5	Blocking characteristic	The requirement is applied according to what frequency bands inclause 3.4.1 that are supported by the BS.
7.5	Blocking characteristics	This requirement may be applied for the protection of UTRA FDD BS receivers when UTRA FDD BS and GSM 900, GSM850, PCS 1900 and BS operating in the /DCS1800 band (GSM or UTRA) are co-located.
7.6	Intermodulation characteristics	The requirement is applied according to what frequency bands in clause 3.4.1 that are supported by the BS.
7.7	Spurious emissions	The requirement is applied according to what frequency bands in clause 3.4.1 that are supported by the BS.
	HSDPA*	The portion of HSDPA(High Speed Downlink Packet Access) is not applicable to ARIB standards by the time when ARIB is prepared to transpose.

Note: HSDPA*: This regional requirement should be reviewed to check its necessity every TSG RAN meeting.

4.8 Specified frequency range

--- NEXT CHANGED SECTION ---

6.5.1 Occupied bandwidth

6.5.1.1 Definition and applicability

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage β/2 of the total mean transmitted power.

The value of β/2 should be taken as 0,5%.

6.5.1.2 Minimum Requirements

The occupied bandwidth shall be less than 5 MHz based on a chip rate of 3,84 Mcps.

The normative reference for this requirement is TS 25.104 subclause 6.6.1.

6.5.1.3 Test purpose

The occupied bandwidth, defined in the Radio Regulations of the International Telecommunication Union ITU, is a useful concept for specifying the spectral properties of a given emission in the simplest possible manner; see also Recommendation ITU-R Recommendation SM.328~~-9~~ [11]. The test purpose is to verify that the emission of the BS does not occupy an excessive bandwidth for the service to be provided and is, therefore, not likely to create interference to other users of the spectrum beyond undue limits.

6.5.1.4 Method of test

6.5.1.4.1 Initial conditions

Test environment: normal; see subclause 4.4.1.

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

1) Connect the Measurement device to the BS antenna connector.

2) Start transmission on a single carrier according to test model 1 defined in subclause 6.1.1.1 at the manufacturer's specified maximum output power.

6.5.1.4.2 Procedure

1) Measure the spectrum of the transmitted signal across a span of 10 MHz, based on an occupied bandwidth requirement of 5 MHz. The selected resolution bandwidth (RBW) filter of the analyser shall be 30 kHz or less. The spectrum shall be measured at 400 or more points across the measurement span.

NOTE: The detection mode of the spectrum analyzer will not have any effect on the result if the statistical properties of the out-of-OBW power are the same as those of the inside-OBW power. Both are expected to have the Rayleigh distribution of the amplitude of Gaussian noise. In any case where the statistics are not the same, though, the detection mode must be power responding. There are at least two ways to be power responding. The spectrum analyser can be set to "sample" detection, with its video bandwidth setting at least three times its RBW setting. Or the analyser may be set to respond to the average of the power (root-mean-square of the voltage) across the measurement cell.

2) Compute the total of the power, P0, (in power units, not decibel units) of all the measurement cells in the measurement span. Compute P1, the power outside the occupied bandwidth on each side. P1 is half of the total power outside the bandwidth. P1 is half of (100 % - (occupied percentage)) of P0. For the occupied percentage of 99 %, P1 is 0.005 times P0.

3) Determine the lowest frequency, f1, for which the sum of all power in the measurement cells from the beginning of the span to f1 exceeds P1.

4) Determine the highest frequency, f2, for which the sum of all power in the measurement cells from the end of the span to f2 exceeds P1.

5) Compute the occupied bandwidth as f2 - f1.

6.5.1.5 Test requirements

The occupied bandwidth shall be less than 5 MHz based on a chip rate of 3,84 Mcps

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

6.5.2 Out of band emission

--- NEXT CHANGED SECTION ---

6.5.3 Spurious emissions

6.5.3.1 Definition and applicability

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.

The requirement applies at frequencies within the specified frequency ranges, which are more than 12.5 MHz under the first carrier frequency used or more than 12.5 MHz above the last carrier frequency used.

The requirements shall apply whatever the type of transmitter considered (single carrier or multi-carrier). It applies for all transmission modes foreseen by the manufacturer's specification.

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

6.5.3.2 (void)

void

6.5.3.3 (void)

void

6.5.3.4 Minimum Requirements

6.5.3.4.1 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 [4], are applied.

6.5.3.4.1.1 Minimum Requirement

The power of any spurious emission shall be attenuated by at least the minimum requirement.

Table 6.24: BS Mandatory spurious emissions limits, Category A

Band	Maximum level	Measurement Bandwidth	Note
9 kHz to 150 kHz	-13 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], subclause 4.1
150 kHz to 30 MHz		10 kHz	Bandwidth as in ITU-R SM.329 [4], subclause 4.1
30 MHz to 1 GHz		100 kHz	Bandwidth as in ITU-R SM.329 [4], subclause 4.1
1 GHz to 12,75 GHz		1 MHz	Upper frequency as in ITU-R SM.329 [4], subclause 2.5 Table 1

6.5.3.4.2 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 [4], are applied.

6.5.3.4.2.1 Minimum Requirement

The power of any spurious emission shall not exceed.

Table 6.25: BS Mandatory spurious emissions limits, operating band I, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
1GHz ↔ Fc1 - 60 MHz or 2100 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1
Fc1 - 60 MHz or 2100 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 2100 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc1 - 50 MHz or 2100 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 2180 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 50 MHz or 2180 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 2180 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 60 MHz or 2180 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1. Upper frequency as in ITU-R SM.329 [4], s2.5 table 1

Table 6.25A: BS Mandatory spurious emissions limits, operating band II, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
1GHz ↔ Fc1 - 60 MHz or 1920 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1
Fc1 - 60 MHz or 1920 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 1920 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc1 - 50 MHz or 1920 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 2000 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 50 MHz or 2000 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 2000 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 60 MHz or 2000 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1. Upper frequency as in ITU-R SM.329 [4], s2.5 table 1

Table 6.25B: BS Mandatory spurious emissions limits, operating band III, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
1GHz ↔ Fc1 - 60 MHz or 1795 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1
Fc1 - 60 MHz or 1795 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 1795 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc1 - 50 MHz or 1795 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 1890 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 50 MHz or 1890 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 1890 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 60 MHz or 1890 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1. Upper frequency as in ITU-R SM.329 [4], s2.5 table 1

Fc1: Centre frequency of emission of the first carrier transmitted by the BS.

Fc2: Centre frequency of emission of the last carrier transmitted by the BS.

6.5.3.4.3 Protection of the BS receiver of own or different BS

This requirement shall be applied in order to prevent the receivers of the BSs being desensitised by emissions from a BS transmitter. This is measured at the transmit antenna port for any type of BS which has common or separate Tx/Rx antenna ports.

6.5.3.4.3.1 Minimum Requirement

The power of any spurious emission shall not exceed.

Table 6.26: BS Spurious emissions limits for protection of the BS receiver

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	1920 - 1980MHz	-96 dBm	100 kHz	
II	1850-1910 MHz	-96 dBm	100 kHz	
III	1710-1785 MHz	-96 dBm	100 kHz	

6.5.3.4.4 Co-existence with GSM 900

6.5.3.4.4.1 Operation in the same geographic area

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

This requirement assumes the scenario described in [2]. For different scenarios, the manufacturer may declare a different requirement.

6.5.3.4.4.1.1 Minimum Requirement

The power of any spurious emission shall not exceed.

Table 6.27: BS Spurious emissions limits for BS in geographic coverage area of GSM 900

Band	Maximum Level	Measurement Bandwidth	Note
876 MHz to 915 MHz	-61 dBm	100 kHz	
921 MHz to 960 MHz	-57 dBm	100 kHz	

6.5.3.4.4.2 Co-located base stations

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

6.5.3.4.4.2.1 Minimum Requirement

The power of any spurious emission shall not exceed.

Table 6.28: BS Spurious emissions limits for protection of the BTS receiver

Band	Maximum Level	Measurement Bandwidth	Note
876 MHz to 915 MHz	–98 dBm	100 kHz	

6.5.3.4.5 Co-existence with DCS 1800

6.5.3.4.5.1 Operation in the same geographic area

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

6.5.3.4.5.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.29: BS Spurious emissions limits for BS in geographic coverage area of DCS 1800

Band	Maximum Level	Measurement Bandwidth	Note
1 805 MHz to 1 880 MHz	-47 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in band III
1 710 MHz to 1 785 MHz	-61 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in band III, since it is already covered by the requirement in sub-clause 6.5.3.4.3.

6.5.3.4.5.2 Co-located basestations

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

6.5.3.4.5.2.1 Minimum Requirement

The power of any spurious emission shall not exceed.

Table 6.30: BS Spurious emissions limits for BS co-located with DCS 1800 BTS

Band	Maximum Level	Measurement Bandwidth	Note
1 710 MHz to 1 785 MHz	-98 dBm	100 kHz	

6.5.3.4.6 Co-existence with PHS

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

6.5.3.4.6.1 Minimum Requirement

The power of any spurious emission shall not exceed.

Table 6.31: BS Spurious emissions limits for BS in geographic coverage area of PHS

Band	Maximum Level	Measurement Bandwidth	Note
1 893,5 MHz to 1 919,60 MHz	-41 dBm	300 kHz	

6.5.3.4.7 Co-existence with services in adjacent frequency bands

This requirement may be applied for the protection in bands adjacent to bands I, II or III, as defined in clause 3.4.1 in geographic areas in which both an adjacent band service and UTRA FDD are deployed.

6.5.3.4.7.1 Minimum requirement

The power of any spurious emission shall not exceed.

Table 6.32: BS spurious emissions limits for protection of adjacent band services

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	2100-2105 MHz	-30 + 3.4 · (f - 2100 MHz) dBm	1 MHz	
	2175-2180 MHz	-30 + 3.4 · (2180 MHz - f) dBm	1 MHz	
II	1920-1925 MHz	-30 + 3.4 · (f - 1920 MHz) dBm	1 MHz	
	1995-2000 MHz	-30 +3.4 · (2000 MHz - f) dBm	1 MHz	
III	1795-1800 MHz	-30 + 3.4 · (f - 1795 MHz) dBm	1MHz	
	1885-1890 MHz	-30 +3.4 · (1890 MHz - f) dBm	1MHz	

6.5.3.4.8 Co-existence with UTRA-TDD

6.5.3.4.8.1 Operation in the same geographic area

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

6.5.3.4.8.1.1 Minimum Requirement

The power of any spurious emission shall not exceed.

Table 6.33: BS Spurious emissions limits for BS in geographic coverage area of UTRA-TDD

Band	Maximum Level	Measurement Bandwidth	Note
1 900 MHz to 1 920 MHz	-52 dBm	1 MHz	
2 010 MHz to 2 025 MHz	-52 dBm	1 MHz	

6.5.3.4.8.2 Co-located base stations

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

6.5.3.4.8.2.1 Minimum Requirement

The power of any spurious emission shall not exceed.

Table 6.34: BS Spurious emissions limits for BS co-located with UTRA-TDD

Band	Maximum Level	Measurement Bandwidth	Note
1 900 MHz to 1 920 MHz	–86 dBm	1 MHz	
2 010 MHz to 2 025 MHz	–86 dBm	1 MHz	

6.5.3.4.9 Co-existence with UTRA FDD in frequency band I

6.5.3.4.9.1 Operation in the same geographic area

This requirement may be applied for the protection of UTRA FDD UE and BS operating in frequency band I in geographic areas in which both UTRA FDD in frequency band I and UTRA-FDD in frequency other frequency bands are deployed.

6.5.3.4.9.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.34A: BS Spurious emissions limits for BS in geographic coverage area of UTRA FDD UE receiver and BS receiver operating in frequency band I

Band	Maximum Level	Measurement Bandwidth	Note
2110 – 2170 MHz	-52 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band I
1920 – 1980 MHz	-49 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band I, since it is already covered by the requirement in sub-clause 6.5.3.4.3.

6.5.3.4.9.2 Co-located base stations

This requirement may be applied for the protection of UTRA FDD BS receivers operating in frequency band I when UTRA FDD BS operating in frequency band I and UTRA FDD BS operating in other frequency bands are co-located.

6.5.3.4.9.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.34B: BS Spurious emissions limits for BS co-located with UTRA FDD BS operating in frequency band I

Band	Maximum Level	Measurement Bandwidth	Note
1920 - 1980 MHz	-96 dBm	100 kHz	

6.5.3.4.10 Co-existence with UTRA FDD in frequency band III

6.5.3.4.10.1 Operation in the same geographic area

This requirement may be applied for the protection of UTRA FDD UE and BS operating in frequency band III in geographic areas in which both UTRA FDD in frequency band III and UTRA FDD in other frequency bands are deployed.

6.5.3.4.10.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.34C: BS Spurious emissions limits for BS in geographic coverage area of UTRA FDD UE receiver and BS receiver operating in frequency band III

Band	Maximum Level	Measurement Bandwidth	Note
1805 – 1880 MHz	-52 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band III
1710 – 1785 MHz	-49 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band III, since it is already covered by the requirement in sub-clause 6.5.3.4.3.

6.5.3.4.10.2 Co-located base stations

This requirement may be applied for the protection of UTRA FDD BS receivers operating in frequency band III when UTRA FDD BS operating in frequency band III and UTRA FDD BS operating in other frequency bands are co-located.

6.5.3.4.10.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.34D: BS Spurious emissions limits for BS co-located with UTRA FDD BS operating in frequency band III

Band	Maximum Level	Measurement Bandwidth	Note
1710 – 1785 MHz	-96 dBm	100 kHz	

6.5.3.4.11 Co-existence with PCS1900

6.5.3.4.11.1 Operation in the same geographic area

This requirement may be applied for the protection of PCS 1900 BS receiver in geographic areas in which both PCS 1900 and UTRA FDD BS are deployed.

6.5.3.4.11.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.34Da: BS Spurious emissions limits for BS in geographic coverage area of PCS 1900 BS

Band	Maximum Level	Measurement Bandwidth	Note
1850 - 1910 MHz	-61 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in frequency band II, since it is already covered by the requirement in sub-clause 6.5.3.4.3.
1930 - 1990 MHz	-47 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in frequency band II

6.5.3.4.11.2 Co-located base stations

This requirement may be applied for the protection of PCS1900 BS receivers when UTRA FDD BS and PCS1900 BS are co-located.

6.5.3.4.11.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.34E: BS Spurious emissions limits for BS co-located with PCS1900 BS

Band	Maximum Level	Measurement Bandwidth	Note
1850 – 1910 MHz	-98 dBm	100 kHz	

6.5.3.4.12 Co-existence with GSM850

6.5.3.4.12.1 Operation in the same geographic area

This requirement may be applied for the protection of GSM 850 MS and GSM 850 BS receiver in geographic areas in which both GSM 850 and UTRA FDD BS are deployed.

6.5.3.4.12.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.34Ea: BS Spurious emissions limits for BS in geographic coverage area of GSM 850

Band	Maximum Level	Measurement Bandwidth	Note
824 - 849 MHz	-61 dBm	100 kHz	
869 – 894 MHz	-57 dBm	100 kHz	

6.5.3.4.12.2 Co-located base stations

This requirement may be applied for the protection of GSM850 BS receivers when UTRA FDD BS and GSM850 BS are co-located.

6.5.3.4.12.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.34F: BS Spurious emissions limits for BS co-located with GSM850 BS

Band	Maximum Level	Measurement Bandwidth	Note
824 - 849 MHz	-98 dBm	100 kHz	

6.5.3.5 Test purpose

This test measures conducted spurious emission from the BS transmitter antenna connector, while the transmitter is in operation.

6.5.3.6 Method of Test

6.5.3.6.1 Initial conditions

Test environment: normal; see subclause 4.4.1.

RF channels to be tested: B, M and T with multiple carriers if supported; see subclause 4.8

1) Connect the BS antenna connector to a measurement receiver using an attenuator or a directional coupler if necessary

2) Measurements shall use a measurement bandwidth in accordance to the tables in section 6.5.3.4.

3) Detection mode: True RMS.

4) Configure the BS with transmitters active at their maximum output power.

6.5.3.6.2 Procedure

1) Set the BS to transmit a signal in accordance to test model 1, subclause 6.1.1.1 at the manufacturer's specified maximum output power.

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

6.5.3.7 Test requirements

The measurement result in step 2 of 6.5.3.6.2 shall not exceed the maximum level specified in tables 6.35 to 6.51 if applicable for the BS under test.

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

6.5.3.7.1 Spurious emissions (Category A)

Table 6.35: BS Mandatory spurious emissions limits, Category A

Band	Maximum level	Measurement Bandwidth	Note
9 kHz to 150 kHz	-13 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], subclause 4.1
150 kHz to 30 MHz		10 kHz	Bandwidth as in ITU-R SM.329 [4], subclause 4.1
30 MHz to 1 GHz		100 kHz	Bandwidth as in ITU-R SM.329 [4], subclause 4.1
1 GHz to 12,75 GHz		1 MHz	Upper frequency as in ITU-R SM.329 [4], subclause 2.5 Table 1

6.5.3.7.2 Spurious emissions (Category B)

Table 6.36: BS Mandatory spurious emissions limits, operating band I, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
1GHz ↔ Fc1 - 60 MHz or 2100 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1
Fc1 - 60 MHz or 2100 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 2100 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc1 - 50 MHz or 2100 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 2180 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 50 MHz or 2180 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 2180 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 60 MHz or 2180 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1. Upper frequency as in ITU-R SM.329 [4], s2.5 table 1

Table 6.36A: BS Mandatory spurious emissions limits, operating band II, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
1GHz ↔ Fc1 - 60 MHz or 1920 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1
Fc1 - 60 MHz or 1920 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 1920 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc1 - 50 MHz or 1920 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 2000 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 50 MHz or 2000 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 2000 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 60 MHz or 2000 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1. Upper frequency as in ITU-R SM.329 [4], s2.5 table 1

Table 6.36B: BS Mandatory spurious emissions limits, operating band III, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
1GHz ↔ Fc1 - 60 MHz or 1795 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1
Fc1 - 60 MHz or 1795 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 1795 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc1 - 50 MHz or 1795 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 1890 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 50 MHz or 1890 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 1890 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 60 MHz or 1890 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1. Upper frequency as in ITU-R SM.329 [4], s2.5 table 1

Fc1: Centre frequency of emission of the first carrier transmitted by the BS.

Fc2: Centre frequency of emission of the last carrier transmitted by the BS.

6.5.3.7.3 Protection of the BS receiver of own or different BS

Table 6.37: BS Spurious emissions limits for protection of the BS receiver

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	1920 - 1980MHz	-96 dBm	100 kHz	
II	1850-1910 MHz	-96dBm	100 kHz	
III	1710-1785 MHz	-96 dBm	100 kHz	

6.5.3.7.4 Co-existence with GSM 900

6.5.3.7.4.1 Operation in the same geographic area

Table 6.38: BS Spurious emissions limits for BS in geographic coverage area of GSM 900

Band	Maximum Level	Measurement Bandwidth	Note
876 MHz to 915 MHz	-61 dBm	100 kHz	
921 MHz to 960 MHz	-57 dBm	100 kHz	

6.5.3.7.4.2 Co-located base stations

Table 6.39: BS Spurious emissions limits for protection of the BTS receiver

Band	Maximum Level	Measurement Bandwidth	Note
876 MHz to 915 MHz	–98 dBm	100 kHz	

6.5.3.7.5 Co-existence with DCS 1800

6.5.3.7.5.1 Operation in the same geographic area

Table 6.40: BS Spurious emissions limits for BS in geographic coverage area of DCS 1800

Band	Maximum Level	Measurement Bandwidth	Note
1 805 MHz to 1 880 MHz	-47 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in band III
1 710 MHz to 1 785 MHz	-61 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in band III, since it is already covered by the requirement in sub-clause 6.5.3.4.3.

6.5.3.7.5.2 Co-located base stations

Table 6.41: BS Spurious emissions limits for BS co-located with DCS 1800 BTS

Band	Maximum Level	Measurement Bandwidth	Note
1 710 MHz to 1 785 MHz	-98 dBm	100 kHz	

6.5.3.7.6 Co-existence with PHS

Table 6.42: BS Spurious emissions limits for BS in geographic coverage area of PHS

Band	Maximum Level	Measurement Bandwidth	Note
1 893,5 MHz to 1 919,60 MHz	-41 dBm	300 kHz	

6.5.3.7.7 Co-existence with services in adjacent frequency bands

Table 6.43: BS spurious emissions limits for protection of adjacent band services

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	2100-2105 MHz	-30 + 3.4 · (f - 2100 MHz) dBm	1 MHz	
	2175-2180 MHz	-30 + 3.4 · (2180 MHz - f) dBm	1 MHz	
II	1920-1925 MHz	-30 + 3.4 · (f - 1920 MHz) dBm	1 MHz	
	1995-2000 MHz	-30 +3.4 · (2000 MHz - f) dBm	1 MHz	
III	1795-1800 MHz	-30 + 3.4 · (f - 1795 MHz) dBm	1MHz	
	1885-1890 MHz	-30 +3.4 · (1890 MHz - f) dBm	1MHz	

6.5.3.7.8 Co-existence with UTRA-TDD

6.5.3.7.8.1 Operation in the same geographic area

Table 6.44: BS Spurious emissions limits for BS in geographic coverage area of UTRA-TDD

Band	Maximum Level	Measurement Bandwidth	Note
1 900 MHz to 1 920 MHz	-52 dBm	1 MHz	
2 010 MHz to 2 025 MHz	-52 dBm	1 MHz	

6.5.3.7.8.2 Co-located base stations

Table 6.45: BS Spurious emissions limits for BS co-located with UTRA-TDD

Band	Maximum Level	Measurement Bandwidth	Note
1 900 MHz to 1 920 MHz	–86 dBm	1 MHz	
2 010 MHz to 2 025 MHz	–86 dBm	1 MHz	

6.5.3.7.9 Co-existence with UTRA FDD in frequency band I

6.5.3.7.9.1 Operation in the same geographic area

Table 6.46: BS Spurious emissions limits for BS in geographic coverage area of UTRA FDD UE receiver and BS receiver operating in frequency band I

Band	Maximum Level	Measurement Bandwidth	Note
2110 – 2170 MHz	-52 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band I
1920 – 1980 MHz	-49 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band I, since it is already covered by the requirement in sub-clause 6.5.3.4.3.

6.5.3.7.9.2 Co-located base stations

Table 6.47: BS Spurious emissions limits for BS co-located with UTRA FDD BS operating in frequency band I

Band	Maximum Level	Measurement Bandwidth	Note
1920 - 1980 MHz	-96 dBm	100 kHz	

6.5.3.7.10 Co-existence with UTRA FDD in frequency band III

6.5.3.7.10.1 Operation in the same geographic area

Table 6.48: BS Spurious emissions limits for BS in geographic coverage area of UTRA FDD UE receiver and BS receiver operating in frequency band III

Band	Maximum Level	Measurement Bandwidth	Note
1805 – 1880 MHz	-52 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band III
1710 – 1785 MHz	-49 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band III, since it is already covered by the requirement in sub-clause 6.5.3.4.3.

6.5.3.7.10.2 Co-located base stations

Table 6.49: BS Spurious emissions limits for BS co-located with UTRA FDD BS operating in frequency band III

Band	Maximum Level	Measurement Bandwidth	Note
1710 – 1785 MHz	-96 dBm	100 kHz	

6.5.3.7.11 Co-existence with PCS1900

6.5.3.7.11.1 Operation in the same geographic area

Table 6.49A: BS Spurious emissions limits for BS in geographic coverage area of PCS 1900

Band	Maximum Level	Measurement Bandwidth	Note
1850 - 1910 MHz	-61 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in frequency band II, since it is already covered by the requirement in sub-clause 6.5.3.4.3.
1930 - 1990 MHz	-47 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in frequency band II

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

6.5.3.7.11.2 Co-located base stations

Table 6.50: BS Spurious emissions limits for BS co-located with PCS1900 BS

Band	Maximum Level	Measurement Bandwidth	Note
1850 – 1910 MHz	-98 dBm	100 kHz	

6.5.3.7.12 Co-existence with GSM850

6.5.3.7.12.1 Operation in the same geographic area

Table 6.50A: BS Spurious emissions limits for BS in geographic coverage area of GSM 850

Band	Maximum Level	Measurement Bandwidth	Note
824 - 849 MHz	-61 dBm	100 kHz	
869 – 894 MHz	-57 dBm	100 kHz	

6.5.3.7.12.2 Co-located base stations

Table 6.51: BS Spurious emissions limits for BS co-located with GSM850 BS

Band	Maximum Level	Measurement Bandwidth	Note
824 – 849 MHz	-98 dBm	100 kHz	

6.6 Transmit intermodulation

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030887**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.141** **CR** **325** ⌘ **rev** ⌘ Current version: **6.3.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Correction of references to ITU recommendations
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/11/2003
Category:	⌘	**A**
Release:	⌘	Rel-6

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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	ITU recommendation SM329 was updated and renamed, ITU recommendation SM328 was also updated. Previous versions currently referenced in the specification are superseeded and cannot longer used as reference.
Summary of change:	⌘	References to SM329 and SM328 are corrected.
Consequences if not approved:	⌘	**Isolated impact analysis:** The CR has no impact on Node-B or UE implementation as it corrects external references only.

Clauses affected:	⌘	2, 4.7, 6.5.1.3, 6.5.3.4.1, 6.5.3.4.2,			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Equivalent CRs in other Releases: CR324 cat. F to 25.141 v5.7.0			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.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.

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] 3GPP TS 25.104: "UTRA(BS) FDD; Radio transmission and Reception".

[2] 3GPP TS 25.942: "RF system scenarios".

[3] 3GPP TS 25.113: "Base station EMC".

[4] ITU-R recommendation SM.329~~-9~~: "~~Spurious emissions~~Unwanted emissions in the spurious domain".

[5] ITU-T recommendation O.153: "Basic parameters for the measurement of error performance at bit rates below the primary rate".

[6] IEC 60721-3-3 (1994): "Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 3: Stationary use at weather protected locations".

[7] IEC 60721-3-4 (1995): "Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 4: Stationary use at non-weather protected locations".

[8] IEC 60068-2-1 (1990): "Environmental testing - Part 2: Tests. Tests A: Cold".

[9] IEC 60068-2-2 (1974): "Environmental testing - Part 2: Tests. Tests B: Dry heat".

[10] IEC 60068-2-6 (1995): "Environmental testing - Part 2: Tests - Test Fc: Vibration (sinusoidal)".

[11] ITU-R recommendation SM.328~~-9~~: "Spectra and bandwidth of emissions".

[12] 3GPP TS 45.004: "Digital cellular telecommunications system (Phase 2+); Modulation".

[13] 3GPP TS 25.214: "Physical layer procedures (FDD)"

[14] 3GPP TS 25.213: "Spreading and modulation (FDD)".

3 Definitions and abbreviations

--- NEXT CHANGED SECTION ---

4.7 Regional requirements

Some requirements in TS 25.141 may only apply in certain regions. Table 4.4 lists all requirements that may be applied differently in different regions.

Table 4.4: List of regional requirements

Subclause number	Requirement	Comments
3.4.1	Frequency bands	Some bands may be applied regionally.
3.4.1 6.5.3.4.3 6.5.3.7.3 7.7	Frequency bands Protection of the BS receiver of own or different BS Protection of the BS receiver of own or different BS Spurious Emissions	Band VI specifications are developed for use in Japan. The Band VI frequency ranges specified in clause 3.4.1 are subject to coming regulatory decisions.
3.4.2	Tx-Rx Frequency Separation	The requirement is applied according to what frequency bands in clause 3.4.1 that are supported by the BS.
3.5	Channel arrangement	The requirement is applied according to what frequency bands in clause 3.4.1 that are supported by the BS.
6.2.1.2	Base station output power	In certain regions, the minimum requirement for normal conditions may apply also for some conditions outside the ranges defined for the Normal test environment in subclause 4.4.1.
6.5.2.1	Spectrum emission mask	The mask specified may be mandatory in certain regions. In other regions this mask may not be applied.
6.5.3.4.1	Spurious emissions (Category A)	These requirements shall be met in cases where Category A limits for spurious emissions, as defined in ITU-R Recommendation SM.329- [4], are applied.
6.5.3.4.2	Spurious emissions (Category B)	These requirements shall be met in cases where Category B limits for spurious emissions, as defined in ITU-R Recommendation SM.329- [4], are applied.
6.5.3.4.4.1	Co-existence with GSM900 – Operation in the same geographic area	This requirement may be applied for the protection of GSM 900 MS and GSM 900 BTS in geographic areas in which both GSM 900 and UTRA FDD are deployed.
6.5.3.4.4.2	Co-existence with GSM900 – Co-located base stations	This requirement may be applied for the protection of GSM 900 BTS receivers when GSM 900 BTS and UTRA FDD BS are co-located.
6.5.3.4.5.1	Co-existence with DCS1800 – Operation in the same geographic area	This requirement may be applied for the protection of DCS 1800 MS and DCS 1800 BTS in geographic areas in which both DCS 1800 and UTRA FDD are deployed.
6.5.3.4.5.2	Co-existence with DCS1800 – Co-located base stations	This requirement may be applied for the protection of DCS 1800 BTS receivers when DCS 1800 BTS and UTRA FDD BS are co-located.
6.5.3.4.6	Co-existence with PHS	This requirement may be applied for the protection of PHS in geographic areas in which both PHS and UTRA FDD are deployed.
6.5.3.4.7	Co-.existence with services in adjacent frequency bands	This requirement may be applied for the protection in bands adjacent to the downlink band as defined in clause 3.4.1 in geographic areas in which both an adjacent band service and UTRA FDD are deployed.
6.5.3.4.8.1	Co-existence with UTRA TDD – Operation in the same geographic area	This requirement may be applied to geographic areas in which both UTRA-TDD and UTRA-FDD are deployed.
6.5.3.4.8.2	Co-existence with UTRA TDD – Co-located base stations	This requirement may be applied for the protection of UTRA-TDD BS receivers when UTRA-TDD BS and UTRA FDD BS are co-located.
6.5.3.4.9.1	Co-existence with UTRA FDD in frequency band I -Operation in the same geographic area	This requirement may be applied for the protection of UTRA FDD UE in frequency band I in geographic areas in which both UTRA FDD in frequency band I and III are deployed.
6.5.3.4.9.2	Co-existence with UTRA FDD in frequency band I - Co-located base stations	This requirement may be applied for the protection of UTRA FDD BTS receivers in frequency band I when UTRA FDD BS in frequency band I and III are co-located.
6.5.3.4.10.1	Co-existence with UTRA FDD in frequency band III -Operation in	This requirement may be applied for the protection of UTRA FDD UE in frequency band III in

	the same geographic area	geographic areas in which both UTRA FDD in frequency band I and III are deployed.
6.5.3.4.10.2	Co-existence with UTRA FDD in frequency band III - Co-located base stations	This requirement may be applied for the protection of UTRA FDD BTS receivers in frequency band III when UTRA FDD BS in frequency band I and III are co-located.
6.5.3.4.11.1	Co-existence with PCS1900 - Operation in the same geographic area	This requirement may be applied for the protection of PCS 1900 BTS receivers in geographic areas in which both PCS 1900 and UTRA FDD are deployed.
6.5.3.4.11.2	Co-existence with PCS1900 - Co-located base stations	This requirement may be applied for the protection of PCS 1900 BTS receivers when PCS 1900 BTS and UTRA FDD BS are co-located.
6.5.3.4.12.1	Co-existence with GSM850 - Operation in the same geographic area	This requirement may be applied for the protection of GSM 850 MS and GSM 850 BTS receivers in geographic areas in which both GSM 850 and UTRA FDD are deployed.
6.5.3.4.12.2	Co-existence with GSM 850 - Co-located base stations	This requirement may be applied for the protection of GSM 850 BTS receivers when GSM 850 BTS and UTRA FDD BS are co-located.
7.5	Blocking characteristic	The requirement is applied according to what frequency bands in clause 3.4.1 that are supported by the BS.
7.5	Blocking characteristics	This requirement may be applied for the protection of UTRA FDD BS receivers when UTRA FDD BS and GSM 900, GSM850, PCS 1900 and BS operating in the /DCS1800 band (GSM or UTRA) are co-located.
7.6	Intermodulation characteristics	The requirement is applied according to what frequency bands in clause 3.4.1 that are supported by the BS.
7.7	Spurious emissions	The requirement is applied according to what frequency bands in clause 3.4.1 that are supported by the BS.
	Base station classes*	Only requirements for Wide Area (General Purpose) Base Stations shall be applied as regional requirements in Japan.
	HSDPA*	The portion of HSDPA(High Speed Downlink Packet Access) is not applicable to ARIB standards by the time when ARIB is prepared to transpose.

Note*: Base Station Classes, HSDPA: These regional requirements should be reviewed to check its necessity every TSG RAN meeting.

4.8 Specified frequency range

--- NEXT CHANGED SECTION ---

6.5.1 Occupied bandwidth

6.5.1.1 Definition and applicability

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage $\beta/2$ of the total mean transmitted power.

The value of $\beta/2$ should be taken as 0,5%.

6.5.1.2 Minimum Requirements

The occupied bandwidth shall be less than 5 MHz based on a chip rate of 3,84 Mcps.

The normative reference for this requirement is TS 25.104 subclause 6.6.1.

6.5.1.3 Test purpose

The occupied bandwidth, defined in the Radio Regulations of the International Telecommunication Union ITU, is a useful concept for specifying the spectral properties of a given emission in the simplest possible manner; see also Recommendation ITU-R Recommendation SM.328~~-9~~ [11]. The test purpose is to verify that the emission of the BS does not occupy an excessive bandwidth for the service to be provided and is, therefore, not likely to create interference to other users of the spectrum beyond undue limits.

6.5.1.4 Method of test

6.5.1.4.1 Initial conditions

Test environment: normal; see subclause 4.4.1.

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

1) Connect the Measurement device to the BS antenna connector.

2) Start transmission on a single carrier according to test model 1 defined in subclause 6.1.1.1 at the manufacturer's specified maximum output power.

6.5.1.4.2 Procedure

1) Measure the spectrum of the transmitted signal across a span of 10 MHz, based on an occupied bandwidth requirement of 5 MHz. The selected resolution bandwidth (RBW) filter of the analyser shall be 30 kHz or less. The spectrum shall be measured at 400 or more points across the measurement span.

NOTE: The detection mode of the spectrum analyzer will not have any effect on the result if the statistical properties of the out-of-OBW power are the same as those of the inside-OBW power. Both are expected to have the Rayleigh distribution of the amplitude of Gaussian noise. In any case where the statistics are not the same, though, the detection mode must be power responding. There are at least two ways to be power responding. The spectrum analyser can be set to "sample" detection, with its video bandwidth setting at least three times its RBW setting. Or the analyser may be set to respond to the average of the power (root-mean-square of the voltage) across the measurement cell.

2) Compute the total of the power, P0, (in power units, not decibel units) of all the measurement cells in the measurement span. Compute P1, the power outside the occupied bandwidth on each side. P1 is half of the total power outside the bandwidth. P1 is half of (100 % - (occupied percentage)) of P0. For the occupied percentage of 99 %, P1 is 0.005 times P0.

3) Determine the lowest frequency, f1, for which the sum of all power in the measurement cells from the beginning of the span to f1 exceeds P1.

4) Determine the highest frequency, f2, for which the sum of all power in the measurement cells from the end of the span to f2 exceeds P1.

5) Compute the occupied bandwidth as f2 - f1.

6.5.1.5 Test requirements

The occupied bandwidth shall be less than 5 MHz based on a chip rate of 3,84 Mcps

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

6.5.2 Out of band emission

--- NEXT CHANGED SECTION ---

6.5.3 Spurious emissions

6.5.3.1 Definition and applicability

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.

The requirement applies at frequencies within the specified frequency ranges, which are more than 12.5 MHz under the first carrier frequency used or more than 12.5 MHz above the last carrier frequency used.

The requirements shall apply whatever the type of transmitter considered (single carrier or multi-carrier). It applies for all transmission modes foreseen by the manufacturer's specification.

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

6.5.3.2 (void)

void

6.5.3.3 (void)

void

6.5.3.4 Minimum Requirements

6.5.3.4.1 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 [4], are applied.

6.5.3.4.1.1 Minimum Requirement

The power of any spurious emission shall be attenuated by at least the minimum requirement.

Table 6.24: BS Mandatory spurious emissions limits, Category A

Band	Maximum level	Measurement Bandwidth	Note
9 kHz to 150 kHz	-13 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], subclause 4.1
150 kHz to 30 MHz		10 kHz	Bandwidth as in ITU-R SM.329 [4], subclause 4.1
30 MHz to 1 GHz		100 kHz	Bandwidth as in ITU-R SM.329 [4], subclause 4.1
1 GHz to 12,75 GHz		1 MHz	Upper frequency as in ITU-R SM.329 [4], subclause 2.5 Table 1

6.5.3.4.2 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 [4], are applied.

6.5.3.4.2.1 Minimum Requirement

The power of any spurious emission shall not exceed.

Table 6.25: BS Mandatory spurious emissions limits, operating band I, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
1GHz ↔ Fc1 - 60 MHz or 2100 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1
Fc1 - 60 MHz or 2100 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 2100 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc1 - 50 MHz or 2100 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 2180 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 50 MHz or 2180 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 2180 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 60 MHz or 2180 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1. Upper frequency as in ITU-R SM.329 [4], s2.5 table 1

Table 6.25A: BS Mandatory spurious emissions limits, operating band II, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
1GHz ↔ Fc1 - 60 MHz or 1920 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1
Fc1 - 60 MHz or 1920 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 1920 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc1 - 50 MHz or 1920 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 2000 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 50 MHz or 2000 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 2000 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 60 MHz or 2000 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1. Upper frequency as in ITU-R SM.329 [4], s2.5 table 1

Table 6.25B: BS Mandatory spurious emissions limits, operating band III, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
1GHz ↔ Fc1 - 60 MHz or 1795 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1
Fc1 - 60 MHz or 1795 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 1795 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc1 - 50 MHz or 1795 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 1890 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 50 MHz or 1890 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 1890 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 60 MHz or 1890 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1. Upper frequency as in ITU-R SM.329 [4], s2.5 table 1

Fc1: Centre frequency of emission of the first carrier transmitted by the BS.

Fc2: Centre frequency of emission of the last carrier transmitted by the BS.

6.5.3.4.3 Protection of the BS receiver of own or different BS

This requirement shall be applied in order to prevent the receivers of the BSs being desensitised by emissions from a BS transmitter. This is measured at the transmit antenna port for any type of BS which has common or separate Tx/Rx antenna ports.

6.5.3.4.3.1 Minimum Requirement

The power of any spurious emission shall not exceed.

Table 6.26: Wide Area BS Spurious emissions limits for protection of the BS receiver

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	1920 - 1980MHz	-96 dBm	100 kHz	
II	1850 - 1910 MHz	-96 dBm	100 kHz	
III	1710 - 1785 MHz	-96 dBm	100 kHz	

Table 6.26A: Medium Range BS Spurious emissions limits for protection of the BS receiver

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	1920 - 1980MHz	-86 dBm	100 kHz	
II	1850 - 1910 MHz	-86 dBm	100 kHz	
III	1710 - 1785 MHz	-86 dBm	100 kHz	

Table 6.26B: Local Area BS Spurious emissions limits for protection of the BS receiver

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	1920 - 1980MHz	-82 dBm	100 kHz	
II	1850 - 1910 MHz	-82 dBm	100 kHz	
III	1710 - 1785 MHz	-82 dBm	100 kHz	

6.5.3.4.4 Co-existence with GSM 900

6.5.3.4.4.1 Operation in the same geographic area

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

This requirement assumes the scenario described in [2]. For different scenarios, the manufacturer may declare a different requirement.

6.5.3.4.4.1.1 Minimum Requirement

The power of any spurious emission shall not exceed.

Table 6.27: BS Spurious emissions limits for BS in geographic coverage area of GSM 900

Band	Maximum Level	Measurement Bandwidth	Note
876 MHz to 915 MHz	-61 dBm	100 kHz	
921 MHz to 960 MHz	-57 dBm	100 kHz	

6.5.3.4.4.2 Co-located base stations

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

6.5.3.4.4.2.1 Minimum Requirement

The power of any spurious emission shall not exceed.

Table 6.28: BS Spurious emissions limits for protection of the BTS receiver

BS class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	876 - 915 MHz	–98 dBm	100 kHz	
Medium Range BS	876 - 915 MHz	-91 dBm	100 kHz	
Local Area BS	876 - 915 MHz	-70 dBm	100 kHz	

6.5.3.4.5 Co-existence with DCS 1800

6.5.3.4.5.1 Operation in the same geographic area

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

6.5.3.4.5.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.29: BS Spurious emissions limits for BS in geographic coverage area of DCS 1800

Band	Maximum Level	Measurement Bandwidth	Note
1 805 MHz to 1 880 MHz	-47 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in band III
1 710 MHz to 1 785 MHz	-61 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in band III, since it is already covered by the requirement in sub-clause 6.5.3.4.3.

6.5.3.4.5.2 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.

6.5.3.4.5.2.1 Minimum Requirement

The power of any spurious emission shall not exceed.

Table 6.30: BS Spurious emissions limits for BS co-located with DCS 1800 BTS

BS class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	1710 - 1785 MHz	-98 dBm	100 kHz	
Medium Range BS	1710 - 1785 MHz	-96 dBm	100 kHz	
Local Area BS	1710 - 1785 MHz	-80 dBm	100 kHz	

6.5.3.4.6 Co-existence with PHS

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

6.5.3.4.6.1 Minimum Requirement

The power of any spurious emission shall not exceed.

Table 6.31: BS Spurious emissions limits for BS in geographic coverage area of PHS

Band	Maximum Level	Measurement Bandwidth	Note
1 893,5 MHz to 1 919,60 MHz	-41 dBm	300 kHz	

6.5.3.4.7 Co-existence with services in adjacent frequency bands

This requirement may be applied for the protection in bands adjacent to bands I, II or III, as defined in clause 3.4.1 in geographic areas in which both an adjacent band service and UTRA FDD are deployed.

6.5.3.4.7.1 Minimum requirement

The power of any spurious emission shall not exceed.

Table 6.32: BS spurious emissions limits for protection of adjacent band services

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	2100-2105 MHz	-30 + 3.4 · (f - 2100 MHz) dBm	1 MHz	
	2175-2180 MHz	-30 + 3.4 · (2180 MHz - f) dBm	1 MHz	
II	1920-1925 MHz	-30 + 3.4 · (f - 1920 MHz) dBm	1 MHz	
	1995-2000 MHz	-30 +3.4 · (2000 MHz - f) dBm	1 MHz	
III	1795-1800 MHz	-30 + 3.4 · (f - 1795 MHz) dBm	1MHz	
	1885-1890 MHz	-30 +3.4 · (1890 MHz - f) dBm	1MHz	

6.5.3.4.8 Co-existence with UTRA-TDD

6.5.3.4.8.1 Operation in the same geographic area

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

6.5.3.4.8.1.1 Minimum Requirement

The power of any spurious emission shall not exceed.

Table 6.33: BS Spurious emissions limits for BS in geographic coverage area of UTRA-TDD

Band	Maximum Level	Measurement Bandwidth	Note
1 900 MHz to 1 920 MHz	-52 dBm	1 MHz	
2 010 MHz to 2 025 MHz	-52 dBm	1 MHz	

6.5.3.4.8.2 Co-located base stations

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

6.5.3.4.8.2.1 Minimum Requirement

The power of any spurious emission shall not exceed.

Table 6.34: BS Spurious emissions limits for BS co-located with UTRA-TDD

BS class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	1 900 - 1 920 MHz	–86 dBm	1 MHz	
Local Area BS	1900 - 1920 MHz	-55 dBm	1 MHz	
Wide Area BS	2 010 - 2025 MHz	–86 dBm	1 MHz	
Local Area BS	2010 - 2025 MHz	-55 dBm	1 MHz	

6.5.3.4.9 Co-existence with UTRA FDD in frequency band I

6.5.3.4.9.1 Operation in the same geographic area

This requirement may be applied for the protection of UTRA FDD UE and BS operating in frequency band I in geographic areas in which both UTRA FDD in frequency band I and UTRA-FDD in other frequency bands are deployed.

6.5.3.4.9.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.34A: BS Spurious emissions limits for BS in geographic coverage area of UTRA UE receiver and BS receiver operating in frequency band I

Band	Maximum Level	Measurement Bandwidth	Note
2110 – 2170 MHz	-52 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band I
1920 – 1980 MHz	-49 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band I, since it is already covered by the requirement in sub-clause 6.5.3.4.3.

6.5.3.4.9.2 Co-located base stations

This requirement may be applied for the protection of UTRA FDD BS receivers operating in frequency band I when UTRA FDD BS operating in frequency band I and UTRA-FDD operating in other frequency bands are co-located.

6.5.3.4.9.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.34B: BS Spurious emissions limits for BS co-located with UTRA FDD BS operating in frequency band I

Band	Maximum Level	Measurement Bandwidth	Note
1920 - 1980 MHz	-96 dBm	100 kHz	

6.5.3.4.10 Co-existence with UTRA FDD in frequency band III

6.5.3.4.10.1 Operation in the same geographic area

This requirement may be applied for the protection of UTRA FDD UE operating in frequency band III in geographic areas in which both UTRA in frequency band III and I are deployed.

6.5.3.4.10.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.34C: BS Spurious emissions limits for BS in geographic coverage area of UTRA UE receiver and BS receiver operating in frequency band III

Band	Maximum Level	Measurement Bandwidth	Note
1805 – 1880 MHz	-52 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band III
1710 – 1785 MHz	-49 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band III, since it is already covered by the requirement in sub-clause 6.5.3.4.3.

6.5.3.4.10.2 Co-located base stations

This requirement may be applied for the protection of UTRA FDD BS receivers operating in frequency band III when UTRA FDD BS operating in frequency band III and UTRA-FDD BS operating in other frequency bands are co-located.

6.5.3.4.10.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.34D: BS Spurious emissions limits for BS co-located with UTRA FDD BS operating in frequency band III

Band	Maximum Level	Measurement Bandwidth	Note
1710 – 1785 MHz	-96 dBm	100 kHz	

6.5.3.4.11 Co-existence with PCS1900

6.5.3.4.11.1 Operation in the same geographic area

This requirement may be applied for the protection of PCS 1900 BS receiver in geographic areas in which both PCS 1900 and UTRA FDD BS are deployed.

6.5.3.4.11.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.34Da: BS Spurious emissions limits for BS in geographic coverage area of PCS 1900 BS

Band	Maximum Level	Measurement Bandwidth	Note
1850 - 1910 MHz	-61 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in frequency band II, since it is already covered by the requirement in sub-clause 6.5.3.4.3.
1930 - 1990 MHz	-47 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in frequency band II

6.5.3.4.11.2 Co-located base stations

This requirement may be applied for the protection of PCS1900 BS receivers when UTRA FDD BS and PCS1900 BS are co-located.

6.5.3.4.11.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.34E: BS Spurious emissions limits for BS co-located with PCS1900 BS

BS class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	1850 – 1910 MHz	-98 dBm	100 kHz	
Medium Range BS	1850 – 1910 MHz	-96 dBm	100 kHz	
Local Area BS	1850 – 1910 MHz	-80 dBm	100 kHz	

6.5.3.4.12 Co-existence with GSM850

6.5.3.4.12.1 Operation in the same geographic area

This requirement may be applied for the protection of GSM 850 MS and GSM 850 BS receiver in geographic areas in which both GSM 850 and UTRA FDD BS are deployed.

6.5.3.4.12.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.34Ea: BS Spurious emissions limits for BS in geographic coverage area of GSM 850

Band	Maximum Level	Measurement Bandwidth	Note
824 - 849 MHz	-61 dBm	100 kHz	
869 – 894 MHz	-57 dBm	100 kHz	

6.5.3.4.12.2 Co-located base stations

This requirement may be applied for the protection of GSM850 BS receivers when UTRA FDD BS and GSM850 BS are co-located.

6.5.3.4.12.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 6.34F: BS Spurious emissions limits for BS co-located with GSM850 BS

BS class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	824 - 849 MHz	-98 dBm	100 kHz	
Medium Range BS	824 - 849 MHz	-91 dBm	100 kHz	
Local Area BS	824 - 849 MHz	-70 dBm	100 kHz	

6.5.3.5 Test purpose

This test measures conducted spurious emission from the BS transmitter antenna connector, while the transmitter is in operation.

6.5.3.6 Method of Test

6.5.3.6.1 Initial conditions

Test environment: normal; see subclause 4.4.1.

RF channels to be tested: B, M and T with multiple carriers if supported; see subclause 4.8

1) Connect the BS antenna connector to a measurement receiver using an attenuator or a directional coupler if necessary

2) Measurements shall use a measurement bandwidth in accordance to the tables in section 6.5.3.4.

3) Detection mode: True RMS.

4) Configure the BS with transmitters active at their maximum output power.

6.5.3.6.2 Procedure

1) Set the BS to transmit a signal in accordance to test model 1, subclause 6.1.1.1 at the manufacturer's specified maximum output power.

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

6.5.3.7 Test requirements

The measurement result in step 2 of 6.5.3.6.2 shall not exceed the maximum level specified in tables 6.35 to 6.51 if applicable for the BS under test.

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

6.5.3.7.1 Spurious emissions (Category A)

Table 6.35: BS Mandatory spurious emissions limits, Category A

Band	Maximum level	Measurement Bandwidth	Note
9 kHz to 150 kHz	-13 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], subclause 4.1
150 kHz to 30 MHz		10 kHz	Bandwidth as in ITU-R SM.329 [4], subclause 4.1
30 MHz to 1 GHz		100 kHz	Bandwidth as in ITU-R SM.329 [4], subclause 4.1
1 GHz to 12,75 GHz		1 MHz	Upper frequency as in ITU-R SM.329 [4], subclause 2.5 Table 1

6.5.3.7.2 Spurious emissions (Category B)

Table 6.36: BS Mandatory spurious emissions limits, operating band I, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
1GHz ↔ Fc1 - 60 MHz or 2100 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1
Fc1 - 60 MHz or 2100 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 2100 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc1 - 50 MHz or 2100 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 2180 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 50 MHz or 2180 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 2180 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 60 MHz or 2180 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1. Upper frequency as in ITU-R SM.329 [4], s2.5 table 1

Table 6.36A: BS Mandatory spurious emissions limits, operating band II, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
1GHz ↔ Fc1 - 60 MHz or 1920 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1
Fc1 - 60 MHz or 1920 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 1920 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc1 - 50 MHz or 1920 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 2000 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 50 MHz or 2000 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 2000 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 60 MHz or 2000 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1. Upper frequency as in ITU-R SM.329 [4], s2.5 table 1

Table 6.36B: BS Mandatory spurious emissions limits, operating band III, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
1GHz ↔ Fc1 - 60 MHz or 1795 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1
Fc1 - 60 MHz or 1795 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or 1795 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc1 - 50 MHz or 1795 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or 1890 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 50 MHz or 1890 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or 1890 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 60 MHz or 1890 MHz *whichever is the lower* ↔ 12.75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1. Upper frequency as in ITU-R SM.329 [4], s2.5 table 1

Fc1: Centre frequency of emission of the first carrier transmitted by the BS.

Fc2: Centre frequency of emission of the last carrier transmitted by the BS.

6.5.3.7.3 Protection of the BS receiver of own or different BS

Table 6.37: Wide Area BS Spurious emissions limits for protection of the BS receiver

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	1920 - 1980MHz	-96 dBm	100 kHz	
II	1850 - 1910 MHz	-96 dBm	100 kHz	
III	1710 - 1785 MHz	-96 dBm	100 kHz	

Table 6.37A: Medium Range BS Spurious emissions limits for protection of the BS receiver

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	1920 - 1980MHz	-86 dBm	100 kHz	
II	1850 - 1910 MHz	-86 dBm	100 kHz	
III	1710 - 1785 MHz	-86 dBm	100 kHz	

Table 6.37B: Local Area BS Spurious emissions limits for protection of the BS receiver

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	1920 - 1980MHz	-82 dBm	100 kHz	
II	1850 - 1910 MHz	-82 dBm	100 kHz	
III	1710 - 1785 MHz	-82 dBm	100 kHz	

6.5.3.7.4 Co-existence with GSM 900

6.5.3.7.4.1 Operation in the same geographic area

Table 6.38: BS Spurious emissions limits for BS in geographic coverage area of GSM 900

Band	Maximum Level	Measurement Bandwidth	Note
876 MHz to 915 MHz	-61 dBm	100 kHz	
921 MHz to 960 MHz	-57 dBm	100 kHz	

6.5.3.7.4.2 Co-located base stations

Table 6.39: BS Spurious emissions limits for protection of the BTS receiver

BS class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	876-915 MHz	-98 dBm	100 kHz	
Medium Range BS	876-915 MHz	-91 dBm	100 kHz	
Local Area BS	876-915 MHz	-70 dBm	100 kHz	

6.5.3.7.5 Co-existence with DCS 1800

6.5.3.7.5.1 Operation in the same geographic area

Table 6.40: BS Spurious emissions limits for BS in geographic coverage area of DCS 1800

Band	Maximum Level	Measurement Bandwidth	Note
1 805 MHz to 1 880 MHz	-47 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in band III
1 710 MHz to 1 785 MHz	-61 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in band III, since it is already covered by the requirement in sub-clause 6.5.3.4.3.

6.5.3.7.5.2 Co-located base stations

Table 6.41: BS Spurious emissions limits for BS co-located with DCS 1800 BTS

BS class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	1710 - 1785 MHz	-98 dBm	100 kHz	
Medium Range BS	1710 - 1785 MHz	-96 dBm	100 kHz	
Local Area BS	1710 - 1785 MHz	-80 dBm	100 kHz	

6.5.3.7.6 Co-existence with PHS

Table 6.42: BS Spurious emissions limits for BS in geographic coverage area of PHS

Band	Maximum Level	Measurement Bandwidth	Note
1 893,5 MHz to 1 919,60 MHz	-41 dBm	300 kHz	

6.5.3.7.7 Co-existence with services in adjacent frequency bands

Table 6.43: BS spurious emissions limits for protection of adjacent band services

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	2100-2105 MHz	-30 + 3.4 · (f - 2100 MHz) dBm	1 MHz	
	2175-2180 MHz	-30 + 3.4 · (2180 MHz - f) dBm	1 MHz	
II	1920-1925 MHz	-30 + 3.4 · (f - 1920 MHz) dBm	1 MHz	
	1995-2000 MHz	-30 +3.4 · (2000 MHz - f) dBm	1 MHz	
III	1795-1800 MHz	-30 + 3.4 · (f - 1795 MHz) dBm	1MHz	
	1885-1890 MHz	-30 +3.4 · (1890 MHz - f) dBm	1MHz	

6.5.3.7.8 Co-existence with UTRA-TDD

6.5.3.7.8.1 Operation in the same geographic area

Table 6.44: BS Spurious emissions limits for BS in geographic coverage area of UTRA-TDD

Band	Maximum Level	Measurement Bandwidth	Note
1 900 MHz to 1 920 MHz	-52 dBm	1 MHz	
2 010 MHz to 2 025 MHz	-52 dBm	1 MHz	

6.5.3.7.8.2 Co-located base stations

Table 6.45: BS Spurious emissions limits for BS co-located with UTRA-TDD

BS class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	1900 - 1920 MHz	-86 dBm	1 MHz	
Local Area BS	1900 - 1920 MHz	-55 dBm	1 MHz	
Wide Area BS	2010 - 2025 MHz	-86 dBm	1 MHz	
Local Area BS	2010 - 2025 MHz	-55 dBm	1 MHz	

6.5.3.7.9 Co-existence with UTRA FDD in frequency band I

6.5.3.7.9.1 Operation in the same geographic area

Table 6.46: BS Spurious emissions limits for BS in geographic coverage area of UTRA FDD UE receiver and BS receiver operating in frequency band I

Band	Maximum Level	Measurement Bandwidth	Note
2110 – 2170 MHz	-52 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band I
1920 – 1980 MHz	-49 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band I, since it is already covered by the requirement in sub-clause 6.5.3.4.3.

6.5.3.7.9.2 Co-located base stations

Table 6.47: BS Spurious emissions limits for BS co-located with UTRA FDD BS operating in frequency band I

Band	Maximum Level	Measurement Bandwidth	Note
1920 - 1980 MHz	-96 dBm	100 kHz	

6.5.3.7.10 Co-existence with UTRA FDD in frequency band III

6.5.3.7.10.1 Operation in the same geographic area

Table 6.48: BS Spurious emissions limits for BS in geographic coverage area of UTRA FDD UE receiver and BS receiver operating in frequency band III

Band	Maximum Level	Measurement Bandwidth	Note
1805 – 1880 MHz	-52 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band III
1710 – 1785 MHz	-49 dBm	1 MHz	This requirement does not apply to UTRA-FDD BS operating in band III, since it is already covered by the requirement in sub-clause 6.5.3.4.3.

6.5.3.7.10.2 Co-located base stations

Table 6.49: BS Spurious emissions limits for BS co-located with UTRA FDD BS operating in frequency band III

Band	Maximum Level	Measurement Bandwidth	Note
1710 – 1785 MHz	-96 dBm	100 kHz	

6.5.3.7.11 Co-existence with PCS1900

6.5.3.7.11.1 Operation in the same geographic area

Table 6.49A: BS Spurious emissions limits for BS in geographic coverage area of PCS 1900

Band	Maximum Level	Measurement Bandwidth	Note
1850 - 1910 MHz	-61 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in frequency band II, since it is already covered by the requirement in sub-clause 6.5.3.4.3.
1930 - 1990 MHz	-47 dBm	100 kHz	This requirement does not apply to UTRA-FDD BS operating in frequency band II

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

6.5.3.7.11.2 Co-located base stations

Table 6.50: BS Spurious emissions limits for BS co-located with PCS1900 BS

BS class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	1850 – 1910 MHz	-98 dBm	100 kHz	
Medium Range BS	1850 – 1910 MHz	-96 dBm	100 kHz	
Local Area BS	1850 – 1910 MHz	-80 dBm	100 kHz	

6.5.3.7.12 Co-existence with GSM850

6.5.3.7.12.1 Operation in the same geographic area

Table 6.50A: BS Spurious emissions limits for BS in geographic coverage area of GSM 850

Band	Maximum Level	Measurement Bandwidth	Note
824 - 849 MHz	-61 dBm	100 kHz	
869 – 894 MHz	-57 dBm	100 kHz	

6.5.3.7.12.2 Co-located base stations

Table 6.51: BS Spurious emissions limits for BS co-located with GSM850 BS

BS class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	824 - 849 MHz	-98 dBm	100 kHz	
Medium Range BS	824 - 849 MHz	-91 dBm	100 kHz	
Local Area BS	824 - 849 MHz	-70 dBm	100 kHz	

6.6 Transmit intermodulation

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030883**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.142** **CR** **168** ⌘ **rev** ⌘ Current version: **5.5.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Correction of references to ITU recommendations
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/11/2003
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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	ITU recommendation SM329 was updated and renamed. Previous versions currently referenced in the specification are superseeded and cannot longer used as reference.
Summary of change:	⌘	References to SM329 are corrected.
Consequences if not approved:	⌘	**Isolated impact analysis:** The CR has no impact on Node-B or UE implementation as it corrects external references only.

Clauses affected:	⌘	2, 5.17, 6.6.1.3, 6.6.3.2.1.1, 6.6.3.2.1.1.1, 6.6.3.2.1.1.2, 6.6.3.2.1.2, 6.6.3.2.1.2.1, 6.6.3.2.1.2.2

		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

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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.

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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.

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

[1] 3GPP TS 25.105: "UTRA (BS) TDD: Radio transmission and reception".

[2] IEC 60721-3-3 (1994): "Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 3: Stationary use at weather protected locations"

[3] IEC 60721-3-4 (1995): "Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 4: Stationary use at non-weather protected locations".

[4] IEC 60068-2-1 (1990): "Environmental testing - Part 2: Tests. Tests A: Cold".

[5] ETR 028: "Uncertainties in the measurement of mobile radio equipment characteristics".

[6] Recommendation ITU-R SM.329~~-9~~: "~~Spurious emissions~~Unwanted emissions in the spurious domain".

[7] Recommendation ITU-R SM.328~~-9~~: "Spectra and bandwidth of emissions".

[8] IEC 60068-2-6 (1995): "Environmental testing - Part 2: Tests - Test Fc: Vibration (sinusoidal)".

[9] 3GPP TR 25.942: "RF System Scenarios".

[10] ITU-T recommendation O.153: "Basic parameters for the measurement of error performance at bit rates below the primary rate".

3 Definitions, symbols, and abbreviations

--- NEXT CHANGED SECTION ---

5.17 Regional requirements

Some requirements in this specification may only apply in certain regions. Table 5.12 lists all requirements that may be applied differently in different regions.

Table 5.12: List of regional requirements

Subclause number	Requirement	Comments
4.2	Frequency bands	Some bands may be applied regionally.
6.2.2	Maximum output power	In certain regions, the minimum requirement for normal conditions may apply also for some conditions outside the ranges defined for the Normal test environment in subclause 5.8.1
6.6.2.1.	Spectrum emission mask	The mask specified may be mandatory in certain regions. In other regions this mask may not be applied.
6.6.3.2.1.1	Spurious emissions (Category A)	These requirements shall be met in cases where Category A limits for spurious emissions, as defined in ITU-R Recommendation SM.329~~-9~~ [6], are applied.
6.6.3.2.1.2	Spurious emissions (Category B)	These requirements shall be met in cases where Category B limits for spurious emissions, as defined in ITU-R Recommendation SM.329~~-9~~ [6], are applied.
6.6.3.2.2.1	Co-existence with GSM900 – Operation in the same geographic area	This requirement may be applied for the protection of GSM 900 MS and GSM 900 BTS in geographic areas in which both GSM 900 and UTRA are deployed.
6.6.3.2.2.2	Co-existence with GSM900 – 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.
6.6.3.2.3.1	Co-existence with DCS1800 – Operation in the same geographic area	This requirement may be applied for the protection of DCS 1800 MS and DCS 1800 BTS in geographic areas in which both DCS 1800 and UTRA are deployed.
6.6.3.2.3.2	Co-existence with DCS1800 – Co-located base stations	This requirement may be applied for the protection of DCS 1800 BTS receivers when DCS 1800 BTS and UTRA BS are co-located.
6.6.3.2.4.1	Co-existence with UTRA FDD – Operation in the same geographic area	This requirement may be applied to geographic areas in which both UTRA-TDD and UTRA-FDD are deployed.
6.6.3.2.4.2	Co-existence with UTRA FDD – 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.
6.6.3.2.5.1	Co-existence with unsynchronised TDD – Operation in the same geographic area	This requirement may be applied for the protection of TDD BS receivers in geographic areas in which unsynchronised TDD is deployed.
6.6.3.2.5.2	Co-existence with unsynchronised TDD – Co-located base stations	This requirement may be applied for the protection of TDD BS receivers when unsynchronised TDD BS are co-located.
7.5	Blocking characteristic	The requirement is applied according to what frequency bands in subclause 4.2 that are supported by the BS.
7.5	Blocking characteristics	This requirement may be applied for the protection of UTRA TDD BS receivers when UTRA TDD BS and GSM 900/DCS1800 BS are co-located.

5.18 Definition of Additive White Gaussian Noise (AWGN) Interferer

--- NEXT CHANGED SECTION ---

6.6 Output RF spectrum emissions

6.6.1 Occupied bandwidth

6.6.1.1 Definition and applicability

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 requirements in this subclause shall apply to both Wide Area BS and Local Area BS.

6.6.1.2 Minimum Requirements

6.6.1.2.1 3,84 Mcps TDD option

The occupied bandwidth shall be less than 5 MHz based on a chip rate of 3,84 Mcps.

The normative reference for this requirement is TS 25.105 [1] subclause 6.6.1.1.

6.6.1.2.2 1,28 Mcps TDD option

The occupied bandwidth shall be less than 1,6 MHz based on a chip rate of 1,28 Mcps.

The reference for this requirement is TS 25.105 [1] subclause 6.6.1.2.

6.6.1.3 Test purpose

The occupied bandwidth, defined in the Radio Regulations of the International Telecommunication Union ITU, is a useful concept for specifying the spectral properties of a given emission in the simplest possible manner; see also Recommendation ITU-R SM.328~~-9~~ [7]. The test purpose is to verify that the emission of the BS does not occupy an excessive bandwidth for the service to be provided and is, therefore, not likely to create interference to other users of the spectrum beyond undue limits.

6.6.1.4 Method of test

6.6.1.4.1 Initial conditions

6.6.1.4.1.0 General test conditions

Test environment: normal; see subclause 5.9.1.

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

6.6.1.4.1.1 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 6.12.

Table 6.12: Parameters of the BS transmitted signal for occupied bandwidth testing

Parameter	Value/description
TDD Duty Cycle	TS i; i = 0, 1, 2, ..., 14: transmit, if i is even; receive, if i is odd.
Time slot carrying SCH	TS0
Time slots under test	TS i, i even and non zero
BS output power setting	PRAT
Number of DPCH in each time slot under test	9
Power of each DPCH	1/9 of Base Station output power
Data content of DPCH	Real life (sufficient irregular)

6.6.1.4.1.2 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 6.12A.

Table 6.12A: Parameters of the BS transmitted signal for occupied bandwidth 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.
Time slots under test	TS4, TS5 and TS6
BS output power setting	PRAT
Number of DPCH in each time slot under test	8
Power of each DPCH	1/8 of Base Station output power
Data content of DPCH	real life (sufficient irregular)

6.6.1.4.2 Procedure

6.6.1.4.2.1 3,84 Mcps TDD option

(1) Measure the power of the transmitted signal with a measurement filter of bandwidth 30 kHz. The characteristic of the filter shall be approximately Gaussian (typical spectrum analyzer filter). The centre frequency of the filter shall be stepped in contiguous 30 kHz steps from a minimum frequency, which shall be (7,5 – 0,015) MHz below the assigned channel frequency of the transmitted signal, up to a maximum frequency, which shall be (7,5 – 0,015) MHz above the assigned channel frequency of the transmitted signal. The time duration of each step shall be sufficiently long to capture one active time slot. The measured power shall be recorded for each step.

(2) Determine the total output power by accumulating the recorded power measurement results of all steps.

(3) Sum up the recorded power measurement results, starting from the step at the minimum frequency defined in (1) up to the step at a lower limit frequency by which this sum is equal to or greater than 0.5 % of the total output power determined in (2). This limit frequency is recorded as "Lower Frequency".

(4) Sum up the recorded power measurement results, starting from the step at the maximum frequency defined in (1) down to the step at an upper limit frequency by which this sum is equal to or greater than 0.5 % of the total output power determined in (2). This limit frequency is recorded as "Upper Frequency".

(5) Calculate the occupied bandwidth as the difference between the "Upper Frequency" obtained in (3) and the "Lower Frequency" obtained in (4).

6.6.1.4.2.2 1,28 Mcps TDD option

(1) Measure the power of the transmitted signal with a measurement filter of bandwidth 30 kHz. The characteristic of the filter shall be approximately Gaussian (typical spectrum analyser filter). The centre frequency of the filter shall be stepped in contiguous 30 kHz steps from a minimum frequency, which shall be (2,4 – 0,015) MHz below the assigned channel frequency of the transmitted signal, up to a maximum frequency, which shall be (2,4 – 0,015) MHz above the assigned channel frequency of the transmitted signal. The time duration of each step shall be sufficiently long to capture one active time slot. The measured power shall be recorded for each step.

(2) Determine the total output power by accumulating the recorded power measurement results of all steps.

(3) Sum up the recorded power measurement results, starting from the step at the minimum frequency defined in (1) up to the step at a lower limit frequency by which this sum is equal to or greater than 0,5 % of the total output power determined in (2). This limit frequency is recorded as "Lower Frequency".

(4) Sum up the recorded power measurement results, starting from the step at the maximum frequency defined in (1) down to the step at an upper limit frequency by which this sum is equal to or greater than 0,5 % of the total output power determined in (2). This limit frequency is recorded as "Upper Frequency".

(5) Calculate the occupied bandwidth as the difference between the "Upper Frequency" obtained in (3) and the "Lower Frequency" obtained in (4).

6.6.1.5 Test Requirements

NOTE: If the Test Requirement 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.

6.6.1.5.1 3,84 Mcps TDD option

The occupied bandwidth calculated in step (5) of subclause 6.6.1.4.2.1 shall be less than 5 MHz.

6.6.1.5.2 1,28 Mcps TDD option

The occupied bandwidth calculated in step (5) of subclause 6.6.1.4.2.2 shall be less than 1,6 MHz.

6.6.2 Out of band emission

--- NEXT CHANGED SECTION ---

6.6.3 Spurious emissions

6.6.3.1 Definition and applicability

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.

The requirements shall apply whatever the type of transmitter considered (single carrier or multiple carrier). It applies for all transmission modes foreseen by the manufacturer’s specification.

For 3.84 Mcps TDD option, either requirement applies at frequencies within the specified frequency ranges which are more than 12,5 MHz under the first carrier frequency used or more than 12,5 MHz above the last carrier frequency used.

For 1,28 Mcps TDD option, either requirement applies at frequencies within the specified frequency ranges which are more than 4 MHz under the first carrier frequency used or more than 4 MHz above the last carrier frequency used.

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

The requirements in this subclause shall apply to both Wide Area BS and Local Area BS, with the exception of the requirements which may be applied for co-existence with UTRA FDD; in this case, different requirements shall apply to Wide Area BS and Local Area BS.

6.6.3.2 Minimum Requirements

6.6.3.2.1 Mandatory requirements

The requirements of either subclause 6.6.3.2.1.1 or subclause 6.6.3.2.1.2 shall apply.

6.6.3.2.1.1 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~~-9~~ [6], are applied.

6.6.3.2.1.1.1 3,84 Mcps TDD option

The power of any spurious emission shall not exceed the maximum level given in Table 6.29.

Table 6.29: BS Mandatory spurious emissions limits, Category A

Band	Maximum level	Measurement bandwidth	Note
9 kHz – 150 kHz	-13 dBm	1 kHz	Bandwidth as in ITU-R SM.329~~-9~~ [6], s4.1
150 kHz – 30 MHz		10 kHz	Bandwidth as in ITU-R SM.329~~-9~~ [6], s4.1
30 MHz – 1 GHz		100 kHz	Bandwidth as in ITU-R SM.329~~-9~~ [6], s4.1
1 GHz – 12,75 GHz		1 MHz	Upper frequency as in ITU-R SM.329~~-9~~ [6], s2.5 table 1

The normative reference for this requirement is TS 25.105 [1] subclause 6.6.3.1.1.1.1.

6.6.3.2.1.1.2 1,28 Mcps TDD option

The power of any spurious emission shall not exceed the maximum level given in Table 6.29A.

Table 6.29A: BS Mandatory spurious emissions limits, Category A

Band	Maximum level	Measurement bandwidth	Note
9 kHz – 150 kHz	-13 dBm	1 kHz	Bandwidth as in ITU-R SM.329~~-9~~ [6], s4.1
150 kHz – 30 MHz		10 kHz	Bandwidth as in ITU-R SM.329~~-9~~ [6], s4.1
30 MHz – 1 GHz		100 kHz	Bandwidth as in ITU-R SM.329~~-9~~ [6], s4.1
1 GHz – 12,75 GHz		1 MHz	Upper frequency as in ITU-R SM.329~~-9~~ [6], s2.5 table 1

The normative reference for this requirement is TS 25.105 [1] subclause 6.6.3.1.1.1.2.

6.6.3.2.1.2 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~~-9~~ [6], are applied.

6.6.3.2.1.2.1 3,84 Mcps TDD option

The power of any spurious emission shall not exceed the maximum levels given in Table 6.30.

Table 6.30: BS Mandatory spurious emissions limits, Category B

Band	Maximum level	Measurement bandwidth	Note
9 kHz – 150 kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329-9 [6], s4.1
150 kHz – 30 MHz	-36 dBm	10 kHz	Bandwidth as in ITU-R SM.329-9 [6], s4.1
30 MHz – 1 GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329-9 [6], s4.1
1 GHz – Fc1 - 60 MHz or Fl - 10 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9 [6], s4.1
Fc1 - 60 MHz or Fl - 10 MHz *whichever is the higher* – Fc1 - 50 MHz or Fl -10 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [6], s4.3 and Annex 7
Fc1 - 50 MHz or Fl -10 MHz *whichever is the higher* – Fc2 + 50 MHz or Fu +10 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [6], s4.3 and Annex 7
Fc2 + 50 MHz or Fu + 10 MHz *whichever is the lower* – Fc2 + 60 MHz or Fu + 10 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [6], s4.3 and Annex 7
Fc2 + 60 MHz or Fu + 10 MHz *whichever is the lower* – 12,75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9 [6], s4.1. Upper frequency as in ITU-R SM.329-9 [6], s2.5 table 1

Fc1: Center frequency of emission of the first carrier transmitted by the BS

Fc2: Center frequency of emission of the last carrier transmitted by the BS

Fl : Lower frequency of the band in which TDD operates

Fu : Upper frequency of the band in which TDD operates

The normative reference for this requirement is TS 25.105 [1] subclause 6.6.3.1.2.1.1.

6.6.3.2.1.2.2 1,28 Mcps TDD option

The power of any spurious emission shall not exceed the maximum levels given in Table 6.30A.

Table 6.30A: BS Mandatory spurious emissions limits, Category B for 1,28 Mcps TDD

Band	Maximum Level	Measurement Bandwidth	Note
9kHz – 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU SM.329-9 [6], s4.1
150kHz – 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU SM.329-9 [6], s4.1
30MHz – 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU SM.329-9 [6], s4.1
1GHz ↔ Fc1-19,2 MHz or Fl –10 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU SM.329-9 [6], s4.1
Fc1 – 19,2 MHz or Fl -10 MHz *whichever is the higher* ↔ Fc1 - 16 MHz or Fl –10 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [6], s4.1
Fc1 - 16 MHz or Fl –10 MHz *whichever is the higher* ↔ Fc2 + 16 MHz or Fu +10 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [6], s4.1
Fc2 + 16 MHz or Fu + 10 MHz *whichever is the lower* ↔ Fc2 +19,2 MHz or Fu + 10 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9 [6], s4.1
Fc2 + 19,2 MHz or Fu +10 MHz *whichever is the lower* ↔ 12,75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9 [6], s4.1. Upper frequency as in ITU-R SM.329-9 [6], s2.5 table 1

Fc1: Center frequency of emission of the first carrier transmitted by the BS

Fc2: Center frequency of emission of the last carrier transmitted by the BS

Fl : Lower frequency of the band in which TDD operates

Fu : Upper frequency of the band in which TDD operates

The reference for this requirement is TS 25.105 subclause 6.6.3.1.2.1.2.

6.6.3.2.2 Co-existence with GSM 900

6.6.3.2.2.1 Operation in the same geographic area

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

The power of any spurious emission shall not exceed the maximum level given in Table 6.31.

Table 6.31: BS Spurious emissions limits for BS in geographic coverage area of GSM 900 MS and GSM 900 BTS receiver

Band	Maximum level	Measurement bandwidth	Note
876 MHz – 915 MHz	–61 dBm	100 kHz	
921 MHz – 960 MHz	-57 dBm	100 kHz	

The normative reference for this requirement is TS 25.105 [1] subclause 6.6.3.2.1.1.

6.6.3.2.2.2 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.

The power of any spurious emission shall not exceed the maximum level given in table 6.32.

Table 6.32: BS Spurious emissions limits for protection of the GSM 900 BTS receiver

Band	Maximum level	Measurement bandwidth	Note
876 MHz – 915 MHz	–98 dBm	100 kHz	

The normative reference for this requirement is TS 25.105 [1] subclause 6.6.3.2.2.1.

6.6.3.2.3 Co-existence with DCS 1800

6.6.3.2.3.1 Operation in the same geographic area

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

The power of any spurious emission shall not exceed the maximum level given in table 6.33.

Table 6.33: BS Spurious emissions limits for BS in geographic coverage area of DCS 1800 MS and DCS 1800 BTS receiver

Band	Maximum level	Measurement bandwidth	Note
1710 MHz – 1785 MHz	-61 dBm	100 kHz	
1805 MHz – 1880 MHz	-47 dBm	100 kHz	

The normative reference for this requirement is TS 25.105 [1] subclause 6.6.3.3.1.1.

6.6.3.2.3.2 Co-located base stations

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

The power of any spurious emission shall not exceed the maximum level given in table 6.34.

Table 6.34: BS Spurious emissions limits for BS co-located with DCS 1800 BTS

Band	Maximum level	Measurement bandwidth	Note
1710 MHz – 1785 MHz	-98 dBm	100 kHz	

The normative reference for this requirement is TS 25.105 [1] subclause 6.6.3.3.2.1.

6.6.3.2.4 Co-existence with UTRA FDD

6.6.3.2.4.1 Operation in the same geographic area

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

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 6.35. 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 the maximum level given in table 6.35.

Table 6.35: BS Spurious emissions limits for BS in geographic coverage area of UTRA FDD

BS Class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	1920 – 1980 MHz	-43 dBm (*)	3,84 MHz	
Wide Area BS	2110 – 2170 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	
Note *: For 3,84 Mcps TDD option base stations, the requirement shall be measured 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, the requirement shall be measured 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: The requirements for Wide Area BS in Table 6.35 are based on a coupling loss of 67 dB between the TDD and FDD base stations. The requirements for Local Area BS in Table 6.35 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 [9].

The normative reference for this requirement is TS 25.105 [1] subclause 6.6.3.4.1.1.

6.6.3.2.4.2 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.

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 6.36. 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 the maximum level given in table 6.36.

Table 6.36: BS Spurious emissions limits for BS co-located with UTRA FDD

BS Class	Band	Maximum Level	Measurement Bandwidth	Note
Wide Area BS	1920 – 1980 MHz	-80 dBm (*)	3,84 MHz	
Wide Area BS	2110 – 2170 MHz	-52 dBm	1 MHz	
Note *: For 3,84 Mcps TDD option base stations, the requirement shall be measured 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, the requirement shall be measured 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: The requirements in table 6.36 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.

The normative reference for this requirement is TS 25.105 [1] subclause 6.6.3.4.2.1.

6.6.3.2.5 Co-existence with unsynchronised TDD

6.6.3.2.5.1 Operation in the same geographic area

This requirement may be applied for the protection of TDD BS receivers in geographic areas in which unsynchronised TDD is deployed.

6.6.3.2.5.1.1 3,84 Mcps TDD option

The power of any spurious emission shall not exceed the maximum level given in table 6.36A.

Table 6.36A: 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
Local Area BS	1900 – 1920 MHz	–36 dBm	3,84 MHz
Local Area BS	2010 – 2025 MHz	–36 dBm	3,84 MHz

NOTE: The requirements in Table 6.36A for the Wide Area BS are based on a minimum coupling loss of 67 dB between unsynchronised TDD base stations. The requirements in Table 6.36A for the Local Area BS are based on a coupling loss of 70 dB between unsynchronised Wide Area and Local Area TDD base stations. The scenarios leading to these requirements are addressed in TR25.942 [9].

The normative reference for this requirement is TS 25.105 [1] subclause 6.6.3.5.1.1.1.

6.6.3.2.5.1.2 1,28 Mcps TDD option

In geographic areas where only 1,28 Mcps TDD is deployed, the power of any spurious emission shall not exceed the maximum level given in table 6.36B, otherwise the limits in table 6.36C shall apply.

Table 6.36B: BS Spurious emissions limits for operation in same geographic area with unsynchronised 1,28 Mcps TDD

BS Class	Band	Maximum Level	Measurement Bandwidth
Wide Area BS	1900 – 1920 MHz	–39 dBm	1,28 MHz
Wide Area BS	2010 – 2025 MHz	–39 dBm	1,28 MHz
Local Area BS	1900 – 1920 MHz	–36 dBm	1,28 MHz
Local Area BS	2010 – 2025 MHz	–36 dBm	1,28 MHz

Table 6.36C: 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
Local Area BS	1900 – 1920 MHz	–36 dBm	3,84 MHz
Local Area BS	2010 – 2025 MHz	–36 dBm	3,84 MHz

NOTE: The requirements in Table 6.36B and 6.36C for the Wide Area BS are based on a minimum coupling loss of 67 dB between unsynchronised TDD base stations. The requirements in Table 6.36B and 6.36C for the Local Area BS are based on a coupling loss of 70 dB between unsynchronised Wide Area and Local Area TDD base stations. The scenarios leading to these requirements are addressed in TR25.942 [9].

The normative reference for this requirement is TS 25.105 [1] subclause 6.6.3.5.1.1.2.

6.6.3.2.5.2 Co-located base stations

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

6.6.3.2.5.2.1 3,84 Mcps TDD option

The power of any spurious emission shall not exceed the maximum level given in table 6.36D.

Table 6.36D: 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
Local Area BS	1900 – 1920 MHz	–36 dBm	3,84 MHz
Local Area BS	2010 – 2025 MHz	–36 dBm	3,84 MHz

NOTE: The requirements in Table 6.36D for the Wide Area BS are based on a minimum coupling loss of 30 dB between unsynchronised TDD base stations. The requirements in Table 6.36D 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.

The normative reference for this requirement is TS 25.105 [1] subclause 6.6.3.5.2.1.1.

6.6.3.2.5.2.2 1,28 Mcps TDD option

In geographic areas where only 1,28 Mcps TDD is deployed, the power of any spurious emission in case of co-location shall not exceed the maximum level given in table 6.36E, otherwise the limits in table 6.36F shall apply.

Table 6.36E: BS Spurious emissions limits for co-location with unsynchronised 1,28 Mcps TDD

BS Class	Band	Maximum Level	Measurement Bandwidth
Wide Area BS	1900 – 1920 MHz	–76 dBm	1,28 MHz
Wide Area BS	2010 – 2025 MHz	–76 dBm	1,28 MHz
Local Area BS	1900 – 1920 MHz	–37 dBm	1,28 MHz
Local Area BS	2010 – 2025 MHz	–37 dBm	1,28 MHz

Table 6.36F: 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
Local Area BS	1900 – 1920 MHz	–36 dBm	3,84 MHz
Local Area BS	2010 – 2025 MHz	–36 dBm	3,84 MHz

NOTE: The requirements in Table 6.36E and 6.36F for the Wide Area BS are based on a minimum coupling loss of 30 dB between unsynchronised TDD base stations. The requirements in Table 6.36E and 6.36F 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.

The normative reference for this requirement is TS 25.105 [1] subclause 6.6.3.5.2.1.2.

6.6.3.3 Test purpose

6.6.3.3.1 3,84 Mcps TDD option

The test purpose is to verify the ability of the BS to limit the interference caused by unwanted transmitter effects to other systems operating at frequencies which are more than 12,5 MHz away from of the UTRA band used.

6.6.3.3.2 1,28 Mcps TDD option

The test purpose is to verify the ability of the BS to limit the interference caused by unwanted transmitter effects to other systems operating at frequencies which are more than 4 MHz away from of the UTRA band used.

6.6.3.4 Method of test

6.6.3.4.1 Initial conditions

For 3,84 Mcps BS supporting 16QAM, the spurious requirements shall be tested with the general test set up specified in section 6.6.3.4.1.1 and also with the special test set up for 16QAM capable BS specified in section 6.6.3.4.1.4.

For 1,28 Mcps BS supporting 16QAM, the spurious requirements shall be tested with the general test set up specified in section 6.6.3.4.1.2 and also with the special test set up for 16QAM capable BS specified in section 6.6.3.4.1.3.

6.6.3.4.1.0 General test conditions

Test environment: normal; see subclause 5.9.1.

RF channels to be tested: B, M and T with multiple carriers if supported; see subclause 5.3.

6.6.3.4.1.1 3,84 Mcps TDD option – General test set up

(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 6.37.

Table 6.37: Parameters of the BS transmitted signal for spurious emissions testing

Parameter	Value/description
TDD Duty Cycle	TS i; i = 0, 1, 2, ..., 14: transmit, if i is even; receive, if i is odd.
Time slot carrying SCH	TS0
Time slots under test	TS i, i even and non zero
BS output power setting	PRAT
Number of DPCH in each time slot under test	9
Power of each DPCH	1/9 of Base Station output power
Data content of DPCH	real life (sufficient irregular)

6.6.3.4.1.2 1,28 Mcps TDD option– General test set up

(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 6.37A.

Table 6.37A: Parameters of the BS transmitted signal for spurious emissions 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.
Time slots under test	TS4, TS5 and TS6
BS output power setting	PRAT
Number of DPCH in each each time slot under test	8
Power of each DPCH	1/8 of Base Station output power
Data content of DPCH	real life (sufficient irregular)

6.6.3.4.1.3 1,28 Mcps TDD option – Special test set up for 16QAM capable BS

This test set up only applies for 16QAM capable BS.

(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 6.37B.

Table 6.37B: Parameters of the BS transmitted signal for spurious emissions testing for 1,28 Mcps TDD – 16QAM capable BS

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.
Time slots under test	TS4, TS5 and TS6
BS output power setting	PRAT
HS-PDSCH modulation	16QAM
Number of HS-PDSCH in each time slot under test	8
Power of each HS-PDSCH	1/8 of Base Station output power
Data content of HS-PDSCH	real life (sufficient irregular)
Spreading factor	16

6.6.3.4.1.4 3,84 Mcps TDD option – Special test set up for 16QAM capable BS

This test set up only applies for 16QAM capable BS.

(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 6.37C.

Table 6.37C: Parameters of the BS transmitted signal for spurious emissions testing – 16QAM capable BS

Parameter	Value/description
TDD Duty Cycle	TS i; i = 0, 1, 2, ..., 14: transmit, if i is even; receive, if i is odd.
Time slot carrying SCH	TS0
Time slots under test	TS i, i even and non zero
BS output power setting	PRAT
HS-PDSCH modulation	16QAM
Number of HS-PDSCH in each time slot under test	9
Power of each HS-PDSCH	1/9 of Base Station output power
Data content of HS-PDSCH	real life (sufficient irregular)
Spreading factor	16

6.6.3.4.2 Procedure

Measure the power of the spurious emissions by applying measurement filters with bandwidths as specified in the relevant tables of subclause 6.6.3.2. The characteristic of the filters shall be approximately Gaussian (typical spectrum analyzer filters). The center frequency of the filter shall be stepped in contiguous steps over the frequency bands 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.

6.6.3.5 Test Requirements

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

The spurious emissions measured according to subclause 6.6.3.4.2 shall not exceed the limits specified in the relevant tables of 6.6.3.2.

For 3,84 Mcps TDD BS supporting 16QAM, the measured spurious emissions shall not exceed the limits specified for 3,84 Mcps TDD option in section 6.6.3.2.

For 1,28 Mcps TDD BS supporting 16QAM, the measured spurious emissions shall not exceed the limits specified for 1,28 Mcps TDD option in section 6.6.3.2.

6.7 Transmit intermodulation

3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030884**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.143** **CR** **038** ⌘ **rev** ⌘ Current version: **5.6.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Correction of references to ITU recommendations
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/11/2003
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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	ITU recommendation SM329 was updated and renamed: Previous version currently referenced in the specification are superseeded and cannot longer used as reference.
Summary of change:	⌘	References to SM329 are corrected.
Consequences if not approved:	⌘	**Isolated impact analysis:** The CR has no impact on repeater implementation as it corrects external references only.

Clauses affected:	⌘	2, 9.2.2.1

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	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/specs/CR.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.

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.

[1] 3GPP TS 25.104: "UTRA(BS) FDD; Radio transmission and Reception".

[2] 3GPP TS 25.942: "RF system scenarios".

[3] 3GPP TS 25.113: "Base station EMC".

[4] ITU-R recommendation SM.329~~-9~~: "~~Spurious emissions~~Unwanted emissions in the spurious domain".

[5] ITU-T recommendation O.153: "Basic parameters for the measurement of error performance at bit rates below the primary rate".

[6] IEC 60721-3-3 (1994): "Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 3: Stationary use at weather protected locations".

[7] IEC 60721-3-4 (1995): "Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 4: Stationary use at non-weather protected locations".

[8] IEC 60068-2-1 (1990): "Environmental testing - Part 2: Tests. Tests A: Cold".

[9] IEC 60068-2-2 (1974): "Environmental testing - Part 2: Tests. Tests B: Dry heat".

[10] IEC 60068-2-6 (1995): "Environmental testing - Part 2: Tests - Test Fc: Vibration (sinusoidal)".

[11] 3GPP TS 25.141: "Base station conformance testing (FDD)".

[12] 3GPP TS 25.106: "UTRA Repeater; Radio transmission and reception".

3 Definitions, symbols and abbreviations

--- NEXT CHANGED SECTION ---

9.2 Spurious emissions

9.2.1 Definition and applicability

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 Repeater output port.

The requirements of either subclause 9.2.2.1 or subclause 9.2.2.2 shall apply whatever the type of Repeater considered (one or several pass bands). It applies for all configurations foreseen by the manufacturer’s specification.

Either requirement applies at frequencies within the specified frequency ranges that are more than 12,5 MHz below the centre frequency of the first 5 MHz channel or more than 12,5 MHz above the centre frequency of the last 5 MHz channel in the pass band.

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

9.2.2 Minimum Requirements

In normal conditions as specified in section 5.4.1 the following requirements shall be met.

9.2.2.1 Spurious emission (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~~-9~~ [4], are applied.

At maximum Repeater gain, with WCDMA signals in the pass band of the Repeater, at levels that produce the maximum rated output power per channel, the power of any spurious emission shall not exceed the limits specified in Table 9.9.

When the power in all channels is increased by 10 dB the requirements shall still be met.

The requirement shall apply both with or without an input signal applied.

NOTE 1: If the pass band corresponds to two or more consecutive nominal 5 MHz channels, the requirement shall be met with any combination of two WCDMA modulated signals of equal power in the repeaters pass band.

Table 9.9: Up-link and down-link: General spurious emissions limits, Category A

Band	Maximum level	Measurement Bandwidth	Note
9kHz – 150kHz	-13 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
150kHz – 30MHz		10 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
30MHz – 1GHz		100 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
1GHz – 12,75 GHz		1 MHz	Upper frequency as in ITU-R SM.329 [4], s2.5 table 1

9.2.2.2 Spurious emission (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 [4], are applied.

At maximum Repeater gain, with WCDMA signals in the pass band of the Repeater, at levels that produce the maximum rated power output per channel, the power of any spurious emission shall not exceed the limits specified in Table 9.10 and Table 9.11 for the down- and up-link, respectively.

When the power in all channels is increased by 10 dB the requirements shall still be met.

The requirement shall apply both with or without an input signal applied.

NOTE 1: If the pass band corresponds to two or more consecutive nominal 5 MHz channels, the requirement shall be met with any combination of two WCDMA modulated signals of equal power in the repeaters pass band.

Table 9.10: Down-link: General spurious emissions limits, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
1GHz ↔ Fc1 - 60 MHz or 2100 MHz whichever is the higher	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1
Fc1 – 60 MHz or 2100 MHz whichever is the higher ↔ Fc1 – 50 MHz or 2100 MHz whichever is the higher	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc1 – 50 MHz or 2100 MHz whichever is the higher ↔ Fc2 + 50 MHz or 2180 MHz whichever is the lower	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 50 MHz or 2180 MHz whichever is the lower ↔ Fc2 + 60 MHz or 2180 MHz whichever is the lower	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 60 MHz or 2180 MHz whichever is the lower ↔ 12,75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1. Upper frequency as in ITU-R SM.329 [4], s2.5 table 1

Table 9.11: Up-link: General spurious emissions limits, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz ↔ 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
150kHz ↔ 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
30MHz ↔ 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329 [4], s4.1
1GHz ↔ Fc1 - 60 MHz or 1910 MHz whichever is the higher	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1
Fc1 – 60 MHz or 1910 MHz whichever is the higher ↔ Fc1 – 50 MHz or 1910 MHz whichever is the higher	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc1 – 50 MHz or 1910 MHz whichever is the higher ↔ Fc2 + 50 MHz or 1990 MHz whichever is the lower	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 50 MHz or 1990 MHz whichever is the lower ↔ Fc2 + 60 MHz or 1990 MHz whichever is the lower	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329 [4], s4.3 and Annex 7
Fc2 + 60 MHz or 1990 MHz whichever is the lower ↔ 12,75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329 [4], s4.1. Upper frequency as in ITU-R SM.329 [4], s2.5 table 1

Fc1: Centre frequency of emission of the first 5 MHz channel in an pass band.

Fc2: Centre frequency of emission of the last 5 MHz channel in an pass band.

9.2.2.3 Co-existence with UTRA-FDD BS

9.2.2.3.1 Operation in the same geographic area

This requirement shall be applied for the protection of UTRA-FDD BS receivers in geographic areas in which UTRA-FDD Repeater and UTRA-FDD BS are deployed. The requirement applies only to the down-link direction of the Repeater.

9.2.2.3.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 9.11A: UTRA Repeater Spurious emissions limits in geographic coverage area of UTRA FDD BS receiver

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	1920 - 1980MHz	-96 dBm	100 kHz	
II	1850 - 1910 MHz	-96 dBm	100kHz	

9.2.2.3.2 Co-location with UTRA-FDD BS

This requirement may be applied for the protection of UTRA-FDD BS receivers when UTRA-FDD Repeater and UTRA-FDD BS are co-located. The requirement applies only to the down-link direction of the Repeater.

9.2.2.3.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 9.12: UTRA Repeater Spurious emissions limits for protection of co-located UTRA FDD BS receiver

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	1920 - 1980MHz	-96 dBm	100 kHz	
II	1850-1910 MHz	-96 dBm	100kHz	

9.2.2.4 Co-existence with GSM 900

9.2.2.4.1 Operation in the same geographic area

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

9.2.2.4.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 9.13: UTRA Repeater Spurious emissions limits in geographic coverage area of GSM 900 MS receiver

Band	Maximum Level	Measurement Bandwidth	Note
876 - 915 MHz	-61 dBm	100 kHz	
921 - 960 MHz	-57 dBm	100 kHz	

9.2.2.4.2 Co-located Repeaters and GSM 900 base stations

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

9.2.2.4.2.1 Minimum requirement

The power of any spurious emission shall not exceed:

Table 9.14: UTRA Repeater Spurious emissions limits for Repeater co-located with GSM 900 BTS receiver

Band	Maximum Level	Measurement Bandwidth	Note
876-915 MHz	-98 dBm	100 kHz	

9.2.2.5 Co-existence with DCS 1800

9.2.2.5.1 Operation in the same geographic area

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

9.2.2.5.1.1 Minimum requirement

The power of any spurious emission shall not exceed:

Table 9.15: UTRA Repeater Spurious emissions limits in geographic coverage area of DCS 1800 MS receiver

Band	Maximum Level	Measurement Bandwidth	Note
1710 - 1785 MHz	-61 dBm	100 kHz	
1805 - 1880 MHz	-47 dBm	100 kHz	

9.2.2.5.2 Co-located Repeaters and DCS 1800 base stations

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

9.2.2.5.2.1 Minimum requirement

The power of any spurious emission shall not exceed:

Table 9.16: UTRA Repeater Spurious emissions limits for Repeater co-located with DCS 1800 BTS

Band	Maximum Level	Measurement Bandwidth	Note
1710 - 1785 MHz	-98 dBm	100 kHz	

9.2.2.6 Co-existence with PHS

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

9.2.2.6.1 Minimum requirement

The power of any spurious emission shall not exceed:

Table 9.17: UTRA Repeater Spurious emissions limits for in geographic coverage area of PHS

Band	Maximum Level	Measurement Bandwidth	Note
1893,5 - 1919,6 MHz	-41 dBm	300 kHz	

9.2.2.7 Co-existence with UTRA-TDD

9.2.2.7.1 Operation in the same geographic area

This requirement may be applied to geographic areas in which both UTRA-TDD and UTRA-FDD Repeaters are deployed. The requirement applies only to the down-link direction of the repeater.

9.2.2.7.1.1 Minimum requirement

The power of any spurious emission shall not exceed:

Table 9.18: UTRA Repeater Spurious emissions limits in geographic coverage area of UTRA-TDD

Band	Maximum Level	Measurement Bandwidth	Note
1900 - 1920 MHz	-52 dBm	1 MHz	
2010 - 2025 MHz	-52 dBm	1 MHz	

9.2.2.7.2 Co-located Repeaters and UTRA-TDD base stations

This requirement may be applied for the protection of UTRA-TDD BS receivers when UTRA-TDD BS and UTRA-FDD Repeater are co-located. The requirement applies only to the down-link direction of the repeater.

9.2.2.7.2.1 Minimum requirement

The power of any spurious emission shall not exceed:

Table 9.19: UTRA Repeater Spurious emissions limits for protection of co-located UTRA TDD BS receiver

Band	Maximum Level	Measurement Bandwidth	Note
1900 - 1920 MHz	-86 dBm	1 MHz	
2010 - 2025 MHz	-86 dBm	1 MHz	

9.2.3 Test purpose

This test measure conducted spurious emission from the Repeater transmitter antenna connector, while the Repeater is in operation.

9.2.4 Method of test

9.2.4.1 Initial conditions

1) Set-up the equipment as shown in annex A.
2) Connect a signal generator to the input port of the Repeater for tests of repeaters with apass band corresponding to one 5 MHz channel. If the pass band corresponds to two or more 5 MHz carriers, two signal generators with a combining circuit or one signal generator with the ability to generate several WCDMA carriers is connected to the input.
3) Detection mode: True RMS.

9.2.4.2 Procedures

1) Set the Repeater to maximum gain.
2) Set the signal generator(s) to generate signal(s) in accordance to test model 1, TS 25.141 subclause 6.2.1.1.1, at level(s) which produce the manufacturer specified maximum output power at maximum gain.
3) The detecting device shall be configured with a measurement bandwidth as stated in the tables.
4) Measure the emission at the specified frequencies with specified measurement bandwidth and note that the measured value does not exceed the specified value.
5) Increase the input power with 10 dB compare to the level obtained in step 2.
6) Measure the emission at the specified frequencies with specified measurement bandwidth and note that the measured value does not exceed the specified value.
7) If the pass band corresponds to two or more consecutive nominal 5 MHz channels, repeat step 1) to 6) with any combination of two WCDMA modulated signals of equal power in the repeaters pass band.
8) Measure the emission at the specified frequencies with specified measurement bandwidth and note that the measured value does not exceed the specified value.

9.2.5 Test requirements

In all measurements, the requirements according to subclause 9.2.2 shall be fulfilled.

10 Modulation accuracy