TSG RAN Meeting #24 **RP-040189**
Seoul, Korea, 2 - 4 June 2004

Title **CRs (Rel-4 and Rel-5/Rel-6 Category A) to TS 25.105 & TS 25.142 on "Clarification of measurement filter of spurious emission"**
Source **TSG RAN WG4**
Agenda Item **7.5.4**

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-040332	25.105	152		F	Rel-4	4.7.0	Clarification of measurement filter of spurious emission considering coexistence issue	TEI4
R4-040333	25.105	153		A	Rel-5	5.5.0	Clarification of measurement filter of spurious emission considering coexistence issue	TEI4
R4-040334	25.105	154		A	Rel-6	6.0.0	Clarification of measurement filter of spurious emission considering coexistence issue	TEI4
R4-040329	25.142	169	1	F	Rel-4	4.8.0	Clarification of measurement filter of spurious emission considering coexistence issue	TEI4
R4-040330	25.142	170	1	A	Rel-5	5.6.0	Clarification of measurement filter of spurious emission considering coexistence issue	TEI4
R4-040331	25.142	171	1	A	Rel-6	6.0.0	Clarification of measurement filter of spurious emission considering coexistence issue	TEI4

3GPP TSG RAN WG4 (Radio) Meeting #31 **R4-040332**

Beijing, China 10 - 14 May 2004

CR-Form-v7

CHANGE REQUEST

⌘ **25.105** **CR** **152** ⌘ **rev** ⌘ Current version: **4.7.0** ⌘

*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:	⌘	Clarification of measurement filter of spurious emission considering coexistence issue
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
Date:	⌘	24/05/2004
Category:	⌘	**F**
Release:	⌘	Rel-4

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:	⌘	Spurious emission requirements for co-existence with UTRA FDD and UTRA TDD are not clearly specified. As the intention of the specification is to protect the receivers of the other CDMA system, it is necessary to measure through the receiver filter, i.e. a RRC filter.
Summary of change:	⌘	Spurious emission power for co-existence with UTRA FDD and UTRA TDD is specified as RRC filtered mean power.
Consequences if not approved:	⌘	Co-existence with UTRA FDD and UTRA TDD cannot be guarantied. Isolated impact analysis: Implementationof the CR will not impact BS implementations behaving like indicated in the CR. No impact on UE implementations.

Clauses affected:	⌘	6.6.3.4 6.6.3.5			
Other specs affected:	⌘	Y / N ☐ / ☒	Other core specifications	⌘	25.142
		☒ / ☐	Test specifications		
		☐ / ☒	O&M Specifications		
Other comments:	⌘	Equivalent CRs in other Releases: CR153 cat. A to 25.105 v5.5.0, CR154 cat. A to 25.105 v6.0.0			

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.

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

Band	Maximum Level	Measurement Bandwidth
1920 – 1980 MHz	-43 dBm (*)	3,84 MHz
2110 – 2170 MHz	-52 dBm	1 MHz
NOTE*	For 3.84 Mcps TDD option base stations, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922.6 MHz or 15 MHz above the last TDD carrier used, whichever is higher. For 1.28 Mcps TDD option base stations, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922.6 MHz or 6.6 MHz above the last TDD carrier used, whichever is higher.	

NOTE: The requirements in Table 6.16 are based on a coupling loss of 67dB between the TDD and FDD 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

Band	Maximum Level	Measurement Bandwidth
1920 – 1980 MHz	-80 dBm (*)	3,84 MHz
2110 – 2170 MHz	-52 dBm	1 MHz
NOTE * For 3.84 Mcps TDD option base stations, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922.6 MHz or 15 MHz above the last TDD carrier used, whichever is higher. For 1.28 Mcps TDD option base stations, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922.6 MHz or 6.6 MHz above the last TDD carrier used, whichever is higher.		

NOTE: The requirements in Table 6.17 are based on a minimum coupling loss of 30 dB between base stations.

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

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

Band	Maximum Level	Measurement Bandwidth
1900 – 1920 MHz	–39 dBm	3,84 MHz
2010 – 2025 MHz	–39 dBm	3,84 MHz

NOTE: The requirements in Table 6.18 are based on a minimum coupling loss of 67 dB between unsynchronised 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 RRC filtered mean 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

Band	Maximum Level	Measurement Bandwidth
1900 – 1920 MHz	–39 dBm	1,28 MHz
2010 – 2025 MHz	–39 dBm	1,28 MHz

Table 6.20: BS Spurious emissions limits for operation in same geographic area with unsynchronised TDD

Band	Maximum Level	Measurement Bandwidth
1900 – 1920 MHz	–39 dBm	3,84 MHz
2010 – 2025 MHz	–39 dBm	3,84 MHz

NOTE: The requirements in Table 6.19 and 6.20 are based on a minimum coupling loss of 67 dB between unsynchronised 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 RRC filtered mean power of any spurious emission in case of co-location shall not exceed the limits specified in table 6.21.

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

Band	Maximum Level	Measurement Bandwidth
1900 – 1920 MHz	–76 dBm	3,84 MHz
2010 – 2025 MHz	–76 dBm	3,84 MHz

NOTE: The requirements in Table 6.21 are based on a minimum coupling loss of 30 dB between unsynchronised TDD base stations.

6.6.3.5.2.1.2 1,28 Mcps TDD option

In geographic areas where only 1,28 Mcps TDD is deployed, the RRC filtered mean 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

Band	Maximum Level	Measurement Bandwidth
1900 – 1920 MHz	–76 dBm	1,28 MHz
2010 – 2025 MHz	–76 dBm	1,28 MHz

Table 6.23: BS Spurious emissions limits for co-location with unsynchronised TDD

Band	Maximum Level	Measurement Bandwidth
1900 – 1920 MHz	–76 dBm	3,84 MHz
2010 – 2025 MHz	–76 dBm	3,84 MHz

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

3GPP TSG RAN WG4 (Radio) Meeting #31 **R4-040333**

Beijing, China 10 - 14 May 2004

CR-Form-v7

CHANGE REQUEST

⌘ **25.105** **CR** **153** ⌘ **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:	⌘	Clarification of measurement filter of spurious emission considering coexistence issue
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
Date:	⌘	24/05/2004
Category:	⌘	**A**
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:	⌘	Spurious emission requirements for co-existence with UTRA FDD and UTRA TDD are not clearly specified. As the intention of the specification is to protect the receivers of the other CDMA system, it is necessary to measure through the receiver filter, i.e. a RRC filter.
Summary of change:	⌘	Spurious emission power for co-existence with UTRA FDD and UTRA TDD is specified as RRC filtered mean power.
Consequences if not approved:	⌘	Co-existence with UTRA FDD and UTRA TDD cannot be guarantied. Isolated impact analysis: Implementationof the CR will not impact BS implementations behaving like indicated in the CR. No impact on UE implementations.
Clauses affected:	⌘	6.6.3.4 6.6.3.5

Other specs affected:	⌘	Y	N		⌘	
			X	Other core specifications		25.142
		X		Test specifications		
			X	O&M Specifications		

Other comments:	⌘	Equivalent CRs in other Releases: CR152 cat. F to 25.105 v4.7.0, CR154 cat. A to 25.105 v6.0.0

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.

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 RRC filtered mean power with the lowest center frequency of measurement at 1922.6 MHz or 15 MHz above the last TDD carrier used, whichever is higher. For 1.28 Mcps TDD option base stations, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922.6 MHz or 6.6 MHz above the last TDD carrier used, whichever is higher.

NOTE: 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 RRC filtered mean power with the lowest center frequency of measurement at 1922.6 MHz or 15 MHz above the last TDD carrier used, whichever is higher. For 1.28 Mcps TDD option base stations, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922.6 MHz or 6.6 MHz above the last TDD carrier used, whichever is higher.			

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

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

BS Class	Band	Maximum Level	Measurement Bandwidth
Wide Area BS	1900 – 1920 MHz	–39 dBm	3,84 MHz
Wide Area BS	2010 – 2025 MHz	–39 dBm	3,84 MHz
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 RRC filtered mean 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 RRC filtered mean power of any spurious emission in case of co-location shall not exceed the limits specified in table 6.21.

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

BS Class	Band	Maximum Level	Measurement Bandwidth
Wide Area BS	1900 – 1920 MHz	–76 dBm	3,84 MHz
Wide Area BS	2010 – 2025 MHz	–76 dBm	3,84 MHz
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 RRC filtered mean 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.

3GPP TSG RAN WG4 (Radio) Meeting #31 **R4-040334**

Beijing, China 10 - 14 May 2004

CR-Form-v7

CHANGE REQUEST

⌘ **25.105** **CR** **154** ⌘ **rev** ⌘ Current version: **6.0.0** ⌘

*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:	⌘	Clarification of measurement filter of spurious emission considering coexistence issue
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
Date:	⌘	24/05/2004
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:	⌘	Spurious emission requirements for co-existence with UTRA FDD and UTRA TDD are not clearly specified. As the intention of the specification is to protect the receivers of the other CDMA system, it is necessary to measure through the receiver filter, i.e. a RRC filter.
Summary of change:	⌘	Spurious emission power for co-existence with UTRA FDD and UTRA TDD is specified as RRC filtered mean power.
Consequences if not approved:	⌘	Co-existence with UTRA FDD and UTRA TDD cannot be guarantied. Isolated impact analysis: Implementationof the CR will not impact BS implementations behaving like indicated in the CR. No impact on UE implementations.

Clauses affected:	⌘	6.6.3.4 6.6.3.5

Other specs affected: ⌘	Y	N		⌘
		X	Other core specifications	25.142
	X		Test specifications	
		X	O&M Specifications	

Other comments:	⌘	Equivalent CRs in other Releases: CR152 cat. F to 25.105 v4.7.0, CR153 cat. A to 25.105 v5.5.0

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.

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 RRC filtered mean power with the lowest center frequency of measurement at 1922.6 MHz or 15 MHz above the last TDD carrier used, whichever is higher. For 1.28 Mcps TDD option base stations, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922.6 MHz or 6.6 MHz above the last TDD carrier used, whichever is higher.

NOTE: 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 RRC filtered mean power with the lowest center frequency of measurement at 1922.6 MHz or 15 MHz above the last TDD carrier used, whichever is higher. For 1.28 Mcps TDD option base stations, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922.6 MHz or 6.6 MHz above the last TDD carrier used, whichever is higher.			

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

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

BS Class	Band	Maximum Level	Measurement Bandwidth
Wide Area BS	1900 – 1920 MHz	–39 dBm	3,84 MHz
Wide Area BS	2010 – 2025 MHz	–39 dBm	3,84 MHz
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 RRC filtered mean 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 RRC filtered mean power of any spurious emission in case of co-location shall not exceed the limits specified in table 6.21.

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

BS Class	Band	Maximum Level	Measurement Bandwidth
Wide Area BS	1900 – 1920 MHz	–76 dBm	3,84 MHz
Wide Area BS	2010 – 2025 MHz	–76 dBm	3,84 MHz
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 RRC filtered mean 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.

3GPP TSG RAN WG4 (Radio) Meeting #31 R4-040329

Beijing, China 10 - 14 May 2004

CR-Form-v7

CHANGE REQUEST

⌘ 25.142 CR 169 ⌘rev 1 ⌘ Current version: 4.8.0 ⌘

*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:	⌘	Clarification of measurement filter of spurious emission considering coexistence issue
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
Date:	⌘	24/05/2004
Category:	⌘	F
Release:	⌘	Rel-4

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:	⌘	Gaussian measurement filter are specificed for all spurious emission measurements, however co-existence requirements in the core specification should be measured as RRC filtered mean power.
Summary of change:	⌘	Spurious emissions for co-existence are measured as RRC filtered mean power.
Consequences if not approved:	⌘	The measurement method will be in conflict to the specified requirement. Isolated Impact Analysis: Implementationof the CR will not impact BS implementations behaving like indicated in the CR. No impact on UE implementations.
Clauses affected:	⌘	6.6.3.4.2; 6.6.3.4.3; 6.6.3.4.5

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

Other comments:	⌘	Equivalent CRs in other Releases: CR170r1 cat. A to 25.142 v5.6.0, CR171r1 cat. A to 25.142 v6.0.0

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.

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

Band	Maximum Level	Measurement Bandwidth	Note
1920 – 1980 MHz	-43 dBm (*)	3,84 MHz	
2110 – 2170 MHz	-52 dBm	1 MHz	
Note *: For 3,84 Mcps TDD option base stations, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922,6 MHz or 15 MHz above the last TDD carrier used, whichever is higher. For 1,28 Mcps TDD option base stations, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922,6 MHz or 6,6 MHz above the last TDD carrier used, whichever is higher.			

NOTE: The requirements in table 6.35 are based on a coupling loss of 67dB between the TDD and FDD 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

Band	Maximum Level	Measurement Bandwidth	Note
1920 – 1980 MHz	-80 dBm (*)	3,84 MHz	
2110 – 2170 MHz	-52 dBm	1 MHz	
Note *: For 3,84 Mcps TDD option base stations, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922,6 MHz or 15 MHz above the last TDD carrier used, whichever is higher. For 1,28 Mcps TDD option base stations, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922,6 MHz or 6,6 MHz above the last TDD carrier used, whichever is higher.			

NOTE: The requirements in table 6.36 are based on a minimum coupling loss of 30 dB between base stations.

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 RRC filtered mean 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

Band	Maximum Level	Measurement Bandwidth
1900 – 1920 MHz	–39 dBm	3,84 MHz
2010 – 2025 MHz	–39 dBm	3,84 MHz

NOTE: The requirements in Table 6.36A are based on a minimum coupling loss of 67 dB between unsynchronised 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 RRC filtered mean 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

Band	Maximum Level	Measurement Bandwidth
1900 – 1920 MHz	–39 dBm	1,28 MHz
2010 – 2025 MHz	–39 dBm	1,28 MHz

Table 6.36C: BS Spurious emissions limits for operation in same geographic area with unsynchronised TDD

Band	Maximum Level	Measurement Bandwidth
1900 – 1920 MHz	–39 dBm	3,84 MHz
2010 – 2025 MHz	–39 dBm	3,84 MHz

NOTE: The requirements in Table 6.36B and 6.36C are based on a minimum coupling loss of 67 dB between unsynchronised 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 RRC filtered mean 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

Band	Maximum Level	Measurement Bandwidth
1900 – 1920 MHz	–76 dBm	3,84 MHz
2010 – 2025 MHz	–76 dBm	3,84 MHz

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

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 RRC filtered mean 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

Band	Maximum Level	Measurement Bandwidth
1900 – 1920 MHz	–76 dBm	1,28 MHz
2010 – 2025 MHz	–76 dBm	1,28 MHz

Table 6.36F: BS Spurious emissions limits for co-location with unsynchronised TDD

Band	Maximum Level	Measurement Bandwidth
1900 – 1920 MHz	–76 dBm	3,84 MHz
2010 – 2025 MHz	–76 dBm	3,84 MHz

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

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

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

(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

(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 time slot under test	8
Power of each DPCH	1/8 of Base Station output power
Data content of DPCH	real life (sufficient irregular)

6.6.3.4.2 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 characteristics of the measurement filter with the bandwidth 1,28 MHz or 3,84MHz shall be RRC with roll-off α = 0,22. The characteristics of the measurement filters with bandwidths 100 kHz and 1 MHz shall be approximately Gaussian (typical spectrum analyzer filter). ~~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.

3GPP TSG RAN WG4 (Radio) Meeting #31 **R4-040330**

Beijing, China 10 - 14 May 2004

CR-Form-v7

CHANGE REQUEST

⌘ **25.142** **CR** **170** ⌘ **rev** **1** ⌘ 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:	⌘	Clarification of measurement filter of spurious emission considering coexistence issue
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
Date:	⌘	24/05/2004
Category:	⌘	**A**
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:	⌘	Gaussian measurement filter are specificed for all spurious emission measurements, however co-existence requirements in the core specification should be measured as RRC filtered mean power.
Summary of change:	⌘	Spurious emissions for co-existence are measured as RRC filtered mean power.
Consequences if not approved:	⌘	The measurement method will be in conflict to the specified requirement. Isolated Impact Analysis: Implementationof the CR will not impact BS implementations behaving like indicated in the CR. No impact on UE implementations.
Clauses affected:	⌘	6.6.3.4.2; 6.6.3.4.3; 6.6.3.4.5

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

Other comments: ⌘ Equivalent CRs in other Releases: CR169r1 cat. F to 25.142 v4.8.0, CR171r1 cat. A to 25.142 v6.0.0

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.

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 RRC filtered mean power with the lowest center frequency of measurement at 1922,6 MHz or 15 MHz above the last TDD carrier used, whichever is higher. For 1,28 Mcps TDD option base stations, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922,6 MHz or 6,6 MHz above the last TDD carrier used, whichever is higher.				

NOTE: 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 RRC filtered mean power with the lowest center frequency of measurement at 1922,6 MHz or 15 MHz above the last TDD carrier used, whichever is higher. For 1,28 Mcps TDD option base stations, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922,6 MHz or 6,6 MHz above the last TDD carrier used, whichever is higher.				

NOTE: 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 RRC filtered mean 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 RRC filtered mean 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 RRC filtered mean 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 RRC filtered mean 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 characteristics of the measurement filter with the bandwidth 1,28 MHz or 3,84MHz shall be RRC with roll-off α = 0,22. The characteristics of the measurement filters with bandwidths 100 kHz and 1 MHz shall be approximately Gaussian (typical spectrum analyzer filter). ~~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.

3GPP TSG RAN WG4 (Radio) Meeting #31 **R4-040331**

Beijing, China 10 - 14 May 2004

CR-Form-v7

CHANGE REQUEST

⌘ **25.142** **CR** **171** ⌘ **rev** **1** ⌘ Current version: **6.0.0** ⌘

*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:	⌘	Clarification of measurement filter of spurious emission considering coexistence issue
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
Date:	⌘	24/05/2004
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:	⌘	Gaussian measurement filter are specificed for all spurious emission measurements, however co-existence requirements in the core specification should be measured as RRC filtered mean power.
Summary of change:	⌘	Spurious emissions for co-existence are measured as RRC filtered mean power.
Consequences if not approved:	⌘	The measurement method will be in conflict to the specified requirement. Isolated Impact Analysis: Implementationof the CR will not impact BS implementations behaving like indicated in the CR. No impact on UE implementations.
Clauses affected:	⌘	6.6.3.4.2; 6.6.3.4.3; 6.6.3.4.5

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

Other comments: ⌘ Equivalent CRs in other Releases: CR169r1 cat. F to 25.142 v4.8.0, CR170r1 cat. A to 25.142 v5.6.0

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.

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 RRC filtered mean power with the lowest center frequency of measurement at 1922,6 MHz or 15 MHz above the last TDD carrier used, whichever is higher. For 1,28 Mcps TDD option base stations, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922,6 MHz or 6,6 MHz above the last TDD carrier used, whichever is higher.				

NOTE: 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 RRC filtered mean power with the lowest center frequency of measurement at 1922,6 MHz or 15 MHz above the last TDD carrier used, whichever is higher. For 1,28 Mcps TDD option base stations, the requirement shall be measured RRC filtered mean power with the lowest center frequency of measurement at 1922,6 MHz or 6,6 MHz above the last TDD carrier used, whichever is higher.				

NOTE: 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 RRC filtered mean 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 RRC filtered mean 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 RRC filtered mean 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 RRC filtered mean 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 characteristics of the measurement filter with the bandwidth 1,28 MHz or 3,84MHz shall be RRC with roll-off α = 0,22. The characteristics of the measurement filters with bandwidths 100 kHz and 1 MHz shall be approximately Gaussian (typical spectrum analyzer filter). ~~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.