TSG RAN Meeting #25 **RP-040289**
Palm Springs, US, 7 - 9 September 2004

Title	**CRs (Rel-6) to TS25.106 & TS25.143 for the redrafting of co-existence tables**
Source	**TSG RAN WG4**
Agenda Item	**8.9**

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-040422	25.106	036		F	Rel-6	6.1.0	Spurious emissions: Redrafting of tables for co-existence	RInImp-REP
R4-040423	25.143	047		F	Rel-6	6.1.0	Spurious emissions: Redrafting of tables for co-existence	RInImp-REP

3GPP TSG RAN WG4 (Radio) Meeting #32 **R4-040422**

Prague, Czech Republic 16 - 20 August 2004

CR-Form-v7

CHANGE REQUEST

⌘ **25.106** **CR** **036** ⌘ **rev** ⌘ Current version: **6.1.0** ⌘

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

Title:	⌘	Spurious emissions: Redrafting of tables for co-existence
Source:	⌘	RAN WG4
Work item code:	⌘	RInImp-REP
Date:	⌘	30/08/2004
Category:	⌘	**F**
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 emissions: In clause 9.2 , there are a range of requirements for co-existence with FDD and other systems in other bands. Each system and band has its own clause and set of tables, making the specification complicated to read and update with new bands and requirements.
Summary of change:	⌘	The co-existence requirements are merged into a single set of tables, with one table for co-existence in the same area and one in case of co-location.
Consequences if not approved:	⌘	The specification will remain difficult to interpet and very complicated when updating with new bands and requirements

Clauses affected:	⌘	4.2, 9.2				
Other specs affected:	⌘	**Y**	**N**		⌘	
			X	Other core specifications		TS25.143
		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.

4.2 Regional requirements

Some requirements in TS 25.106 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
5.1	Frequency bands	Some bands may be applied regionally.
5.2	Up-link to down-link frequency Separation	The requirement is applied according to which frequency bands in Clause 5.2 that are supported by the Repeater.
6.1	Maximum output power	In certain regions, the minimum requirement for normal conditions may apply also for some conditions outside the ranges of conditions defined as normal.
9.1.1	Spectrum emission mask	The mask specified may be mandatory in certain regions. In other regions this mask may not be applied.
9.2.1.1	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 [1], are applied.
9.2.1.2	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 [1], are applied.
~~9.2.3.1~~	~~Spurious emissions: Co-existence with GSM900 - Operation in the same geographic area~~	~~This requirement may be applied for the protection of GSM900 MS and GSM 900 BTS in geographic areas in which both GSM900 and UTRA FDD Repeaters are deployed.~~
~~9.2.3.2~~	~~Spurious emissions: Co-existence with GSM900 - Co-location~~	~~This requirement may be applied for the protection of GSM900 BTS receivers when GSM900 BTS and UTRA FDD Repeaters are co-located.~~
~~9.2.4.1~~	~~Spurious emissions: Co-existence with DCS1800 - Operation in the same geographic area~~	~~This requirement may be applied for the protection of DCS1800 MS and DCS 1800 BTS in geographic areas in which both DCS1800 and UTRA FDD Repeaters are deployed.~~
~~9.2.4.2~~	~~Spurious emissions: Co-existence with DCS1800 - Co-location~~	~~This requirement may be applied for the protection of DCS1800 BTS receivers when DCS1800 BTS and UTRA FDD Repeaters are co-located.~~
9.2.3	Co-existence with other systems in the same geographical area	These requirements may apply in geographic areas in which both UTRA FDD Repeater and GSM900 and/or DCS1800 are deployed.
9.2.4	Co-existence with co-located and co-sited base stations	These requirements may be applied for the protection of other BS receivers when GSM900 and/or DCS1800 are co-located with a UTRA FDD Repeater.
9.2.5	Spurious emissions: 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.
11.2	Input Intermodulation: Co-location with GSM900 and/or DCS1800	The requirement may be applied when GSM900 BTS and/or DCS1800 BTS and UTRA-FDD Repeaters are co-located.

========== NEXT CHANGED SECTION ==========

9.2.2 Co-existence with UTRA-FDD BS

9.2.2.1 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.

9.2.2.1.1 Minimum Requirement

In the down link direction of the Repeater the power of any spurious emission shall not exceed:

Table 9.7A: UTRA Repeater Spurious emissions limits in geographic coverage area of UTRA FDD BS receiver for the down link direction of the Repeater

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

In the up link direction of the Repeater the power of any spurious emission shall not exceed:

Table 9.7B: UTRA Repeater Spurious emissions limits in geographic coverage area of UTRA FDD BS receiver for the up link direction of the Repeater

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	1920 – 1980 MHz	-53 dBm	100 kHz	
II	1850 - 1910 MHz	-53 dBm	100 kHz	

NOTE 1: These requirements in Table 9.7B for the up link direction of the Repeater reflect what can be achieved with present state of the art technology and are based on a coupling loss of 73 dB between a Repeater and a UTRA FDD BS receiver.

NOTE 2: The requirements shall be reconsidered when the state of the art technology progresses.

9.2.2.2 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.

9.2.2.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 9.8: 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	

9.2.3 Co-existence with GSM 900

9.2.3.1 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 Repeaters are deployed.

9.2.3.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 9.9: 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	

9.2.3.2 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.

9.2.3.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 9.10: 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	

9.2.4 Co-existence with DCS 1800

9.2.4.1 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 Repeaters are deployed.

9.2.4.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 9.11: 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	

~~9.2.4.2 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.~~

~~9.2.4.2.1 Minimum Requirement~~

~~The power of any spurious emission shall not exceed:~~

~~**Table 9.12: 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~~	

9.2.4 Co-existence with other systems in the same geographical area

These requirements may be applied for the protection of UE, MS and/or BS operating in other frequency bands in the same geographical area. The requirements may apply in geographic areas in which both UTRA FDD Repeater operating in frequency bands I to II and a system operating in another frequency band than the FDD operating band are deployed. The system operating in the other frequency band may be GSM900, DCS1800.

9.2.4.1 Minimum Requirements

The power of any spurious emission shall not exceed the limits of Table 9.9 for a UTRA FDD Repeater where requirements for co-existence with the system listed in the first column apply.

Table 9.9: UTRA Repeater Spurious emissions limits in geographic coverage area of systems operating in other frequency bands

System type operating in the same geographical area	Band for co-existence requirement	Maximum Level	Measurement Bandwidth	Note
GSM900	876 – 915 MHz	-61 dBm	100 kHz	
	921 - 960 MHz	-57 dBm	100 kHz	
DCS1800	1710 – 1785 MHz	-61 dBm	100 kHz	
	1805 - 1880 MHz	-47 dBm	100 kHz	

9.2.5 Co-existence with co-located and co-sited Repeaters

These requirements may be applied for the protection of other BS receivers when GSM900 and/or DCS1800 are co-located with a UTRA FDD Repeater.

9.2.5.1 Minimum Requirements

The power of any spurious emission shall not exceed the limits of Table 9.10 for a UTRA FDD Repeater where requirements for co-location with the system listed in the first column apply.

Table 9.10: UTRA Repeater Spurious emissions limits for Repeater co-located with another systems

Type of co-located system	Band for co-location requirement	Maximum Level	Measurement Bandwidth	Note
GSM900	876 - 915 MHz	-98 dBm	100 kHz	
DCS1800	1710 - 1785 MHz	-98 dBm	100 kHz	

9.2.5 Co-existence with PHS

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

9.2.5.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 9.13: 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	

9.2.6 Co-existence with UTRA-TDD

9.2.6.1 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.

9.2.6.1.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 9.14: 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	

9.2.6.2 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.

9.2.6.2.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Table 9.15: 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	

9.2.7 Co-existence with services in adjacent frequency bands

This requirement may be applied for the protection in bands adjacent to bands I or II, as defined in clause 5.1 in geographic areas in which both an adjacent band service and UTRA are deployed.

9.2.7.1 Minimum requirement

The power of any spurious emission shall not exceed:

Table 9.16: UTRA Repeater 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	

3GPP TSG RAN WG4 (Radio) Meeting #32 **R4-040423**

Prague, Czech Republic 16 - 20 August 2004

CR-Form-v7

CHANGE REQUEST

⌘ **25.143** **CR** **047** ⌘ **rev** ⌘ Current version: **6.1.0** ⌘

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

Title:	⌘	Spurious emissions: Redrafting of tables for co-existence
Source:	⌘	RAN WG4
Work item code:	⌘	RInImp-REP
Date:	⌘	30/08/2004
Category:	⌘	**F**
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 emissions: In clause 9.2 , there are a range of requirements for co-existence with FDD and other systems in other bands. Each system and band has its own clause and set of tables, making the specification complicated to read and update with new bands and requirements
Summary of change:	⌘	The co-existence requirements are merged into a single set of tables, with one table for co-existence in the same area and one in case of co-location.
Consequences if not approved:	⌘	The specification will remain difficult to interpet and very complicated when updating with new bands and requirements

Clauses affected:	⌘	5.6, 9.2.2			
Other specs affected:	⌘	**Y** / **N**	Other core specifications	⌘	TS25.106
		X /	Other core specifications		
		/ **X**	Test specifications		
		/ **X**	O&M Specifications		
Other comments:	⌘				

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5.6 Regional requirements

Some requirements in TS 25.143 may only apply in certain regions. Table 5.4 lists all requirements that may be applied differently in different regions.

Table 5.4: List of regional requirements

Sub-clause number	Requirement	Comments
4.1	Frequency bands	Some bands may be applied regionally.
4.2	Up-link to down-link frequency Separation	The requirement is applied according to what frequency bands in Clause 4.2 that are supported by the Repeater.
6.1	Maximum output power	In certain regions, the minimum requirement for normal conditions may apply also for some conditions outside the ranges of conditions defined as normal.
9.1.2	Spectrum emission mask	The mask specified may be mandatory in certain regions. In other regions this mask may not be applied.
9.2.2.1	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.
9.2.2.2	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.
9.2.2.3	Spurious emissions: Co-location with UTRA FDD	This requirement may be applied for the protection of UTRA FDD BS receivers when UTRA FDD BS and UTRA FDD Repeaters are co-located.
~~9.2.2.4.1~~	~~Spurious emissions: Co-existence with GSM 900 – 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 Repeaters are deployed.~~
~~9.2.2.4.2~~	~~Spurious emissions: Co-existence with GSM 900 - Co-location~~	~~This requirement may be applied for the protection of GSM 900 BTS receivers when GSM 900 BTS and UTRA FDD Repeaters are co-located.~~
~~9.2.2.5.1~~	~~Spurious emissions: Co-existence with DCS 1800 – 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 Repeaters are deployed.~~
~~9.2.2.5.2~~	~~Spurious emissions: Co-existence with DCS 1800 - Co-location~~	~~This requirement may be applied for the protection of DCS 1800 BTS receivers when DCS 1800 BTS and UTRA FDD Repeaters are co-located.~~
9.2.2.4	Co-existence with other systems in the same geographical area	These requirements may apply in geographic areas in which both UTRA FDD Repeater and GSM900 and/or DCS1800 are deployed.
9.2.2.5	Co-existence with co-located and co-sited base stations	These requirements may be applied for the protection of other BS receivers when GSM900 and/or DCS1800 are co-located with a UTRA FDD Repeater.
9.2.2.6	Spurious emissions: 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.
9.2.2.7.1	Spurious emissions: Co-existence with UTRA TDD–Operation in the same geographic area	This requirement may be applied for the protection of UTRA UE in geographic areas in which both UTRA TDD BS and UTRA FDD Repeaters are deployed.
9.2.2.7.2	Spurious emissions: Co-existence with UTRA TDD - Co-location	This requirement may be applied for the protection of UTRA TDD BS receivers when UTRA TDD BS and UTRA FDD Repeaters are co-located.
11.2	Input intermodulation: Co-existence with GSM 900 and/or DCS 1800	The requirement may be applied when GSM 900 BTS and/or DCS 1800 BTS and UTRA-FDD Repeaters are co-located.

========== NEXT CHANGED SECTION ==========

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.

9.2.2.3.1.1 Minimum Requirement

In the down link direction of the Repeater 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 for the down link direction of the Repeater

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

In the up link direction of the Repeater the power of any spurious emission shall not exceed:

Table 9.11B: UTRA Repeater Spurious emissions limits in geographic coverage area of UTRA FDD BS receiver for the up link direction of the Repeater

Operating Band	Band	Maximum Level	Measurement Bandwidth	Note
I	1920 – 1980 MHz	-53 dBm	100 kHz	
II	1850 - 1910 MHz	-53 dBm	100 kHz	

NOTE 1: These requirements in Table 9.11B for the up link direction of the Repeater reflect what can be achieved with present state of the art technology and are based on a coupling loss of 73 dB between a Repeater and a UTRA FDD BS receiver.

NOTE 2: The requirements shall be reconsidered when the state of the art technology progresses.

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~~	

9.2.2.4 Co-existence with other systems in the same geographical area

These requirements may be applied for the protection of UE, MS and/or BS operating in other frequency bands in the same geographical area. The requirements may apply in geographic areas in which both UTRA FDD Repeater operating in frequency bands I to II and a system operating in another frequency band than the FDD operating band are deployed. The system operating in the other frequency band may be GSM900, DCS1800.

9.2.2.4.1 Minimum Requirements

The power of any spurious emission shall not exceed the limits of Table 9.13 for a UTRA FDD Repeater where requirements for co-existence with the system listed in the first column apply.

Table 9.13: UTRA Repeater Spurious emissions limits in geographic coverage area of systems operating in other frequency bands

System type operating in the same geographical area	Band for co-existence requirement	Maximum Level	Measurement Bandwidth	Note
GSM900	876 – 915 MHz	-61 dBm	100 kHz	
	921 - 960 MHz	-57 dBm	100 kHz	
DCS1800	1710 – 1785 MHz	-61 dBm	100 kHz	
	1805 - 1880 MHz	-47 dBm	100 kHz	

9.2.2.5 Co-existence with co-located and co-sited Repeaters

These requirements may be applied for the protection of other BS receivers when GSM900 and/or DCS1800 are co-located with a UTRA FDD Repeater.

9.2.2.5.1 Minimum Requirements

The power of any spurious emission shall not exceed the limits of Table 9.14 for a UTRA FDD Repeater where requirements for co-location with the system listed in the first column apply.

Table 9.14: UTRA Repeater Spurious emissions limits for Repeater co-located with another systems

Type of co-located system	Band for co-location requirement	Maximum Level	Measurement Bandwidth	Note
GSM900	876 - 915 MHz	-98 dBm	100 kHz	
DCS1800	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	

9.2.2.8 Co-existence with services in adjacent frequency bands

This requirement may be applied for the protection in bands adjacent to bands I or II, as defined in clause 4.1 in geographic areas in which both an adjacent band service and UTRA are deployed.

9.2.2.8.1 Minimum requirement

The power of any spurious emission shall not exceed:

Table 9.20: UTRA Repeater 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	