TSG RAN Meeting #19 **RP-030036**
Birmingham, United Kingdom, 11 - 14 March, 2003

Title **CRs (Rel-4 and Rel-5 Category A) to TS 25.106 & TS 25.143 (Repeaters specifications) on "FDD - GSM co-existence in the same geographic area"**
Source **TSG RAN WG4**
Agenda Item **8.4.4**

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-020100	25.106	020		F	Rel-4	4.4.0	FDD GSM co-existence in the Same Geographic Area	RInImp-REP
R4-020101	25.106	021		A	Rel-5	5.3.0	FDD GSM co-existence in the Same Geographic Area	RInImp-REP
R4-020102	25.143	029		F	Rel-4	4.6.0	FDD GSM co-existence in the Same Geographic Area	RInImp-REP
R4-020103	25.143	030		A	Rel-5	5.3.0	FDD GSM co-existence in the Same Geographic Area	RInImp-REP

3GPP TSG RAN WG4 (Radio) Meeting #26 **R4-030100**

Madrid, Spain 17 - 22 February, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.106** **CR** **020** ⌘ **rev** ⌘ Current version: **4.4.0** ⌘

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

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

Title:	⌘	Spurious emission: FDD – GSM co-existence in the Same Geographic Area
Source:	⌘	RAN WG4
Work item code:	⌘	RInImp-REP
Date:	⌘	05/03/2003
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: ⌘
- Requirements to protect GSM BTS receiver (UL band) in case where FDD and GSM is deployed in the Same Geographic Area are missing.
- Allignment of limits (DL band) in case where FDD and GSM is deployed in the Same Geographic Area of Repeater specification with BS specification.
- Editorial flaws which appeared in the last version.

Summary of change: ⌘
- Requirements for FDD to protect GSM BTS receiver in case of deployment in the Same Geographic Area is introduced.
- Limits for FDD-GSM co-existance (DL band) in the same geograhic area are aligned with BS TS25.143.
- Correction of editorial flaws

Consequences if not approved: ⌘
- Co-existence of FDD and GSM in the Same Geographic Area can not be guaranteed based on the requirements in 3GPP specifications.
  A generic co-existence analysis of FDD and GSM is not possible as it is possible for other systems.
- When FDD and GSM is deployed in the Same Geographic Area Repeater would have to fullfill other requiremts as BS for the DL band.

Isolated Impact Analysis:
GSM network performance could be affected by to high FDD Spurious Emission if this CR is not approved.
Approval of this CR would not affect FDD implementation behaving like indicated in the CR.

Clauses affected: ⌘ 4.2, 9.2.3.2, 9.2.4.2, 6.1.1

Y **N**

Other specs affected:	⌘		X	Other core specifications	⌘	TS 25.143
		X		Test specifications		
			X	O&M Specifications		
Other comments:	⌘	Equivalent CRs in other Releases: CR021 cat. A to 25.106 v5.3.0				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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.329-8 [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.329-8 [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.
9.2.5	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 Section Changed –

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	-~~79~~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	-~~71~~47 dBm	100 kHz	

Editorial changes

- Next Section Changed –

6.1.1 Minimum Requirements

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Table 6.2: Repeater output power; extreme conditions

Rated output power	Limit
P ≥ 43 dBm	+2~~,~~,5 dB and -2~~,~~,5 dB
39 ≤ P < 43 dBm	+2~~,~~,5 dB and -2~~,~~,5 dB
31 ≤ P < 39 dBm	+2~~,~~,5 dB and -2~~,~~,5 dB
P < 31 dBm	+4 dB and -4 dB

3GPP TSG RAN WG4 (Radio) Meeting #26 **R4-030101**

Madrid, Spain 17 - 22 February, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.106** **CR** **021** ⌘ **rev** ⌘ Current version: **5.3.0** ⌘

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

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

Title:	⌘	Spurious emission: FDD – GSM co-existence in the Same Geographic Area
Source:	⌘	RAN WG4
Work item code:	⌘	RInImp-REP
Date:	⌘	05/03/2003
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: ⌘
- Requirements to protect GSM BTS receiver (UL band) in case where FDD and GSM is deployed in the Same Geographic Area are missing.
- Allignment of limits (DL band) in case where FDD and GSM is deployed in the Same Geographic Area of Repeater specification with BS specification.
- Editorial flaws which appeared up in the last version.

Summary of change: ⌘
- Requirements for FDD to protect GSM BTS receiver in case of deployment in the Same Geographic Area is introduced.
- Limits for FDD-GSM co-existance (DL band) in the same geograhic area are aligned with BS TS25.143.
- Correction of editorial flaws.

Consequences if not approved: ⌘
- Co-existence of FDD and GSM in the Same Geographic Area can not be guaranteed based on the requirements in 3GPP specifications.
  A generic co-existence analysis of FDD and GSM is not possible as it is possible for other systems.
- When FDD and GSM is deployed in the Same Geographic Area Repeater would have to fullfill other requiremts as BS for the DL band.

Isolated Impact Analysis:
GSM network performance could be affected by to high FDD Spurious Emission if this CR is not approved.
Approval of this CR would not affect FDD implementation behaving like indicated in the CR.

Clauses affected: ⌘ 4.2, 9.2.3.2, 9.2.4.2, 6.1.1, 11.3

Y | **N**

Other specs affected:	⌘		X	Other core specifications	⌘	TS 25.143
		X		Test specifications		
			X	O&M Specifications		
Other comments:	⌘	Equivalent CRs in other Releases: CR020 cat. F to 25.106 v4.4.0				

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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.
9.2.5	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 Section Changed –

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	-~~79~~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	-~~71~~47 dBm	100 kHz	

Editorial Changes

- Next Section Changed –

6.1.1 Minimum Requirements

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Table 6.2: Repeater output power; extreme conditions

Rated output power	Limit
P ≥ 43 dBm	+2~~.~~,5 dB and -2~~.~~,5 dB
39 ≤ P < 43 dBm	+2~~.~~,5 dB and -2~~.~~,5 dB
31 ≤ P < 39 dBm	+2~~.~~,5 dB and -2~~.~~,5 dB
P < 31 dBm	+4 dB and -4 dB

- Next Section Changed –

11.3 Co-existence with GSM 900 and/or DCS 1800

The following requirement may be applied when GSM 900 BTS and/or DCS 1800 BTS and UTRA-FDD Repeaters are co-exist~~located~~. The requirement shall bet met with the repeater operating at maximum gain.

3GPP TSG RAN WG4 (Radio) Meeting #26 **R4-030102**

Madrid, Spain 17 - 22 February, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.143** **CR** **029** ⌘ **rev** ⌘ Current version: **4.6.0** ⌘

*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:	⌘	Spurious emission: FDD – GSM co-existence in the Same Geographic Area
Source:	⌘	RAN WG4
Work item code:	⌘	RInImp-REP
Date:	⌘	05/03/2003
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: ⌘
- Requirements to protect GSM BTS receiver (UL band) in case where FDD and GSM is deployed in the Same Geographic Area are missing.
- Allignment of limits (DL band) in case where FDD and GSM is deployed in the Same Geographic Area of Repeater specification with BS specification.
- Wrong reference to table
- Editorial flaws which appeared in the last version.

Summary of change: ⌘
- Requirements for FDD to protect GSM BTS receiver in case of deployment in the Same Geographic Area is introduced.
- Limits for FDD-GSM co-existance (DL band) in the same geograhic area are aligned with BS TS25.143.
- Reference to table corrected.
- Correction of Editorial flaws.

Consequences if not approved: ⌘
- Co-existence of FDD and GSM in the Same Geographic Area can not be guaranteed based on the requirements in 3GPP specifications.
  A generic co-existence analysis of FDD and GSM is not possible as it is possible for other systems.
- When FDD and GSM is deployed in the Same Geographic Area Repeater would have to fullfill other requiremts as BS for the DL band.

Isolated Impact Analysis:
GSM network performance could be affected by to high FDD Spurious Emission if this CR is not approved.
Approval of this CR would not affect FDD implementation behaving like indicated in the CR.

Clauses affected: ⌘ 5.6, 9.2.2.4.1, 9.2.2.5.1, 5.9.2, 6.1.5

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	TS 25.106
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	Equivalent CRs in other Releases: CR030 cat. A to 25.143 v5.3.0

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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.329-8 [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.329-8 [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.
9.2.2.6	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 Section Changed –

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	~~-79~~-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	~~-71~~-47 dBm	100 kHz	

Editorial changes

Next Section Changed –

5.9.2 Combining of Repeaters

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Figure 5.~~1~~6: Example of repeater configuration

- Next Section Changed –

6.1.5 Test Requirements

In normal conditions as specified in section 5.4.1, the Repeater maximum output power shall remain within limits specified in Table 6.3 relative to the manufacturer's rated output power.

Table 6.3: Repeater output power; normal conditions

Rated output power	Limit
P ≥ 43 dBm	+2,7 dB and –2,7 dB
39 ≤ P < 43 dBm	+2,7 dB and –2,7 dB
31 ≤ P < 39 dBm	+2,7 dB and –2,7 dB
P < 31 dBm	+3,7 dB and –3,7 dB

In extreme conditions as specified in section 5.4.2 and 5.4.4, the Repeater maximum output power shall remain within limits specified in Table 6.~~2~~ 4 relative to the manufacturer's rated output power.

Table 6.4: Repeater output power; extreme conditions

Rated output power	Limit
P ≥ 43 dBm	+3,2 dB and –3,2 dB
39 ≤ P < 43 dBm	+3,2 dB and –3,2 dB
31 ≤ P < 39 dBm	+3,2 dB and –3,2 dB
P < 31 dBm	+4,7 dB and –4,7 dB

3GPP TSG RAN WG4 (Radio) Meeting #26 **R4-030103**

Madrid, Spain 17 - 22 February, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.143** **CR** **030** ⌘ **rev** ⌘ Current version: **5.3.0** ⌘

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

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

Title:	⌘	Spurious emission: FDD – GSM co-existence in the Same Geographic Area
Source:	⌘	RAN WG4
Work item code:	⌘	RInImp-REP
Date:	⌘	05/03/2003
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: ⌘
- Requirements to protect GSM BTS receiver (UL band) in case where FDD and GSM is deployed in the Same Geographic Area are missing.
- Allignment of limits (DL band) in case where FDD and GSM is deployed in the Same Geographic Area of Repeater specification with BS specification.
- Editorial flaws which appeared in the last version.

Summary of change: ⌘
- Requirements for FDD to protect GSM BTS receiver in case of deployment in the Same Geographic Area is introduced.
- Limits for FDD-GSM co-existance (DL band) in the same geograhic area are aligned with BS TS25.143.
- Correction of Editorial flaws.

Consequences if not approved: ⌘
- Co-existence of FDD and GSM in the Same Geographic Area can not be guaranteed based on the requirements in 3GPP specifications.
  A generic co-existence analysis of FDD and GSM is not possible as it is possible for other systems.
- When FDD and GSM is deployed in the Same Geographic Area Repeater would have to fullfill other requiremts as BS for the DL band.

Isolated Impact Analysis:
GSM network performance could be affected by to high FDD Spurious Emission if this CR is not approved.
Approval of this CR would not affect FDD implementation behaving like indicated in the CR.

Clauses affected: ⌘ 5.6, 9.2.2.4.1, 9.2.2.5.1, 5.9.2

Y **N**

Other specs affected:	⌘	X		Other core specifications	⌘ TS 25.106
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Equivalent CRs in other Releases: CR029 cat. F to 25.143 v4.6.0			

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.

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.
9.2.2.6	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 Section Changed –

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	~~-79~~-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	~~-71~~-47 dBm	100 kHz	

Editorial changes

Next Section Changed –

5.9.2 Combining of Repeaters

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Figure 5.~~1~~6: Example of repeater configuration