TSG RAN Meeting #17 **RP-020490**
Biarritz, France, 3 - 6 September, 2002

Title **CRs (Rel-5) to TS 25.102, TS 25.105, 25.142 and 34.124 "Update of the reference to ITU rec. SM329-9"**
Source **TSG RAN WG4**
Agenda Item **7.4.5**

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-021227	25.102	125		F	Rel-5	5.1.0	Update of reference to ITU-R recommendation SM.329-9	TEI5
R4-021228	25.105	126		F	Rel-5	5.1.0	Update of reference to ITU-R recommendation SM.329-9	TEI5
R4-021234	25.142	144		F	Rel-5	5.1.0	Update of reference to ITU-R recommendation SM.329-9	TEI5
R4-021237	34.124	8		F	Rel-5	5.0.0	Update of reference to ITU-R recommendation SM.329-9	LCRTDD-RF

3GPP TSR RAN WG4 Meeting #24 **R4-021227**

Helsinki, Finland 12 - 16 August 2002

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CHANGE REQUEST

⌘ **25.102** **CR** **125** ⌘ **rev** ⌘ Current version: **5.1.0** ⌘

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

Title:	⌘	Update of reference to ITU-R recommendation SM.329-9
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	21/08/2002
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The present document refers to ITU-R SM.329-8, which has been superseded recently by SM.329-9. No actual requirements are changed.
Summary of change:	⌘	The reference to SM.329 is updated throughout the document
Consequences if not approved:	⌘	There would be an uncertainty whether the 3GPP regulatory radio requirements are based on the latest ITU recommendations.

Clauses affected:	⌘	6.6.3			
Other specs affected:	⌘	**Y** / **N**	Other core specifications	⌘	TS25.105 in Cr126; TS34.124 in CR8
		X /	Test specifications		TS25.142 in CR144; TS34.122;
		/ **X**	O&M Specifications		
Other comments:	⌘				

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

6.6.3 Spurious emissions

Spurious emissions are emissions which are caused by unwanted transmitter effects such as harmonics emission, parasitic emission, intermodulation products and frequency conversion products, but exclude out of band emissions.

The frequency boundary and the detailed transitions of the limits between the requirement for out band emissions and spectrum emissions are based on ITU-R Recommendations SM.329-9~~8~~.

3GPP TSR RAN WG4 Meeting #24 **R4-021228**

Helsinki, Finland 12 - 16 August 2002

CR-Form-v7

CHANGE REQUEST

⌘ **25.105** **CR** **126** ⌘ **rev** ⌘ Current version: **5.1.0** ⌘

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

Title:	⌘	Update of reference to ITU-R recommendation SM.329-9
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	21/08/2002
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(addition of feature),*
- ***C*** *(functional modification of feature)*
- ***D*** *(editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The present document refers to ITU-R SM.329-8, which has been superseded recently by SM.329-9. No actual requirements are changed.
Summary of change:	⌘	The reference to SM.329 is updated throughout the document
Consequences if not approved:	⌘	There would be an uncertainty whether the 3GPP regulatory radio requirements are based on the latest ITU recommendations.

Clauses affected:	⌘	2, 4.3, 6.6.3

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	TS25.102 in Cr125; TS34.124 in CR8
		X		Test specifications		TS25.142 in CR144; TS34.122;
			X	O&M Specifications		

Other comments:	⌘	

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

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] ITU-R Recommendation SM.329-9~~8~~ "Spurious emissions".

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

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

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

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

---NEXT SECTION---

4.3 Regional requirements

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

Table 4.1: List of regional requirements.

Clause number	Requirement	Comments
5.2	Frequency bands	Some bands may be applied regionally.
6.2.1	Base station maximum output power	In certain regions, the minimum requirement for normal conditions may apply also for some conditions outside the range of conditions defined as normal.
6.6.2.1	Spectrum emission mask	The mask specified may be mandatory in certain regions. In other regions this mask may not be applied.
6.6.3.1.1	Spurious emissions (Category A)	These requirements shall be met in cases where Category A limits for spurious emissions, as defined in ITU-R Recommendation SM.329-9~~8~~ [1], are applied.
6.6.3.1.2	Spurious emissions (Category B)	These requirements shall be met in cases where Category B limits for spurious emissions, as defined in ITU-R Recommendation SM.329-9~~8~~ [1], are applied.
6.6.3.2.1	Co-existence with GSM900 – Operation in the same geographic area	This requirement may be applied for the protection of GSM 900 MS in geographic areas in which both GSM 900 and UTRA are deployed.
6.6.3.2.2	Co-existence with GSM900 – Co-located base stations	This requirement may be applied for the protection of GSM 900 BTS receivers when GSM 900 BTS and UTRA BS are co-located.
6.6.3.3.1	Co-existence with DCS1800 – Operation in the same geographic area	This requirement may be applied for the protection of DCS 1800 MS in geographic areas in which both DCS 1800 and UTRA are deployed.
6.6.3.3.2	Co-existence with DCS1800 – Co-located base stations	This requirement may be applied for the protection of DCS 1800 BTS receivers when DCS 1800 BTS and UTRA BS are co-located.
6.6.3.4.1	Co-existence with UTRA FDD – Operation in the same geographic area	This requirement may be applied to geographic areas in which both UTRA-TDD and UTRA-FDD are deployed.
6.6.3.4.2	Co-existence with UTRA FDD – Co-located base stations	This requirement may be applied for the protection of UTRA-FDD BS receivers when UTRA-TDD BS and UTRA FDD BS are co-located.
7.5	Blocking characteristic	The requirement is applied according to what frequency bands in Clause 5.2 that are supported by the BS.
7.5.1	Blocking characteristic Co-location with GSM900 and/or DCS 1800	This requirement may be applied for the protection of UTRA TDD BS receivers when UTRA TDD BS and GSM 900/DCS1800 BS are co-located.

---NEXT SECTION---

6.6.3 Spurious emissions

Spurious emissions are emissions which are caused by unwanted transmitter effects such as harmonics emission, parasitic emission, intermodulation products and frequency conversion products, but exclude out of band emissions. This is measured at the base station RF output port.

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

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

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

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

6.6.3.1 Mandatory Requirements

The requirements of either subclause 6.6.3.1.1 or subclause 6.6.3.1.2 shall apply.

6.6.3.1.1 Spurious emissions (Category A)

The following requirements shall be met in cases where Category A limits for spurious emissions, as defined in ITU-R Recommendation SM.329-~~9~~8 [1], are applied.

6.6.3.1.1.1 Minimum Requirement

6.6.3.1.1.1.1 3,84 Mcps TDD Option

The power of any spurious emission shall not exceed:

Table 6.10: BS Mandatory spurious emissions limits, Category A

Band	Minimum requirement	Measurement Bandwidth	Note
9kHz – 150kHz	-13 dBm	1 kHz	Bandwidth as in ITU SM.329-~~9~~8, s4.1
150kHz – 30MHz		10 kHz	Bandwidth as in ITU SM.329-~~9~~8, s4.1
30MHz – 1GHz		100 kHz	Bandwidth as in ITU SM.329-~~9~~8, s4.1
1GHz – 12.75 GHz		1 MHz	Upper frequency as in ITU SM.329-~~9~~8, s2.5 table 1

6.6.3.1.1.1.2 1,28 Mcps TDD Option

The power of any spurious emission shall not exceed:

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

Band	Minimum requirement	Measurement Bandwidth	Note
9kHz – 150kHz	-13 dBm	1 kHz	Bandwidth as in ITU SM.329-9~~8~~, s4.1
150kHz – 30MHz		10 kHz	Bandwidth as in ITU SM.329-9~~8~~, s4.1
30MHz – 1GHz		100 kHz	Bandwidth as in ITU SM.329-9~~8~~, s4.1
1GHz – 12.75 GHz		1 MHz	Upper frequency as in ITU SM.329-9~~8~~, s2.5 table 1

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

6.6.3.1.2 Spurious emissions (Category B)

The following requirements shall be met in cases where Category B limits for spurious emissions, as defined in ITU-R Recommendation SM.329-9~~8~~ [1], are applied.

6.6.3.1.2.1 Minimum Requirement

6.6.3.1.2.1.1 3,84 Mcps TDD Option

The power of any spurious emission shall not exceed:

Table 6.11: BS Mandatory spurious emissions limits, Category B

Band	Maximum Level	Measurement Bandwidth	Note
9kHz – 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU SM.329-9~~8~~, s4.1
150kHz – 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU SM.329-9~~8~~, s4.1
30MHz – 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU SM.329-9~~8~~, s4.1
1GHz ↔ Fc1-60 MHz or Fl -10 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU SM.329-9~~8~~, s4.1
Fc1 - 60 MHz or Fl -10 MHz *whichever is the higher* ↔ Fc1 - 50 MHz or Fl -10 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9~~8~~, s4.3 and Annex 7
Fc1 - 50 MHz or Fl -10 MHz *whichever is the higher* ↔ Fc2 + 50 MHz or Fu +10 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9~~8~~, s4.3 and Annex 7
Fc2 + 50 MHz or Fu + 10 MHz *whichever is the lower* ↔ Fc2 + 60 MHz or Fu + 10 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9~~8~~, s4.3 and Annex 7
Fc2 + 60 MHz or Fu + 10 MHz *whichever is the lower* ↔ 12,75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9~~8~~, s4.3 and Annex 7. Upper frequency as in ITU-R SM.329-9~~8~~, s2.5 table 1

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

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

Fl : Lower frequency of the band in which TDD operates

Fu : Upper frequency of the band in which TDD operates

6.6.3.1.2.1.2 1,28 Mcps TDD Option

The power of any spurious emission shall not exceed:

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

Band	Maximum Level	Measurement Bandwidth	Note
9kHz – 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU SM.329-9~~8~~, s4.1
150kHz – 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU SM.329-9~~8~~, s4.1
30MHz – 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU SM.329-9~~8~~, s4.1
1GHz ↔ Fc1-19.2 MHz or Fl –10 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU SM.329-9~~8~~, s4.1
Fc1 – 19.2 MHz or Fl -10MHz *whichever is the higher* ↔ Fc1 - 16 MHz or Fl –10 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9~~8~~, s4.1
Fc1 - 16 MHz or Fl –10 MHz *whichever is the higher* ↔ Fc2 + 16 MHz or Fu +10 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9~~8~~, s4.1
Fc2 + 16 MHz or Fu + 10MHz *whichever is the lower* ↔ Fc2 +19.2 MHz or Fu + 10MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9~~8~~, s4.1
Fc2 + 19.2 MHz or Fu +10 MHz *whichever is the lower* ↔ 12,5 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9~~8~~, s4.1. Upper frequency as in ITU-R SM.329-9~~8~~, s2.5 table 1

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

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

Fl : Lower frequency of the band in which TDD operates

Fu : Upper frequency of the band in which TDD operates

3GPP TSR RAN WG4 Meeting #24 **R4-021234**

Helsinki, Finland 12 - 16 August 2002

CR-Form-v7

CHANGE REQUEST

⌘ **25.142** **CR** **144** ⌘ **rev** ⌘ Current version: **5.1.0** ⌘

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

Title:	⌘	Update of reference to ITU-R recommendation SM.329-9
Source:	⌘	RAN WG4
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Release:	⌘	Rel-5

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Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The present document refers to ITU-R SM.329-8, which has been superseded recently by SM.329-9. No actual requirements are changed.
Summary of change:	⌘	The reference to SM.329 is updated throughout the document
Consequences if not approved:	⌘	There would be an uncertainty whether the 3GPP regulatory radio requirements are based on the latest ITU recommendations.

Clauses affected:	⌘	2, 5.7.1, 5.17, 6.6.3			
Other specs affected:	⌘	**Y** / **N**	Other core specifications	⌘	TS25.105 in Cr126;
		X /	Other core specifications		
		/ **X**	Test specifications		
		/ **X**	O&M Specifications		
Other comments:	⌘				

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2 References

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

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

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

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

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

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

[6] Recommendation ITU-R SM.329-9~~8~~: "Spurious emissions".

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

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

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

---NEXT SECTION---

5.7 Tx spurious emissions

5.7.1 Category of spurious emissions limit

The manufacturer shall declare one of the following:

a) the BS shall be tested against Category A limits for spurious emissions, as defined in ITU-R Recommendation SM.329-~~9~~8 [6].

or

b) the BS shall be tested against Category B limits for spurious emissions, as defined in ITU-R Recommendation SM.329-~~9~~8 [6].

If the manufacturer declares Category A limits to be applicable, conformance with the spurious emissions requirements specified in subclause 6.6.3.2.1.1 is mandatory, and the requirements specified in subclause 6.6.3.2.1.2 need not to be tested.

If the manufacturer declares Category B limits to be applicable, conformance with the spurious emissions requirements specified in subclause 6.6.3.2.1.2 is mandatory, and the requirements specified in subclause 6.6.3.2.1.1 need not to be tested.

---NEXT SECTION---

5.17 Regional requirements

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

Table 5.12: List of regional requirements

Subclause number	Requirement	Comments
4.2	Frequency bands	Some bands may be applied regionally.
6.2.2	Maximum output power	In certain regions, the minimum requirement for normal conditions may apply also for some conditions outside the ranges defined for the Normal test environment in subclause 5.8.1
6.6.2.1.	Spectrum emission mask	The mask specified may be mandatory in certain regions. In other regions this mask may not be applied.
6.6.3.2.1.1	Spurious emissions (Category A)	These requirements shall be met in cases where Category A limits for spurious emissions, as defined in ITU-R Recommendation SM.329-9~~8~~ [6], are applied.
6.6.3.2.1.2	Spurious emissions (Category B)	These requirements shall be met in cases where Category B limits for spurious emissions, as defined in ITU-R Recommendation SM.329-9~~8~~ [6], are applied.
6.6.3.2.2.1	Co-existence with GSM900 – Operation in the same geographic area	This requirement may be applied for the protection of GSM 900 MS in geographic areas in which both GSM 900 and UTRA are deployed.
6.6.3.2.2.2	Co-existence with GSM900 – Co-located base stations	This requirement may be applied for the protection of GSM 900 BTS receivers when GSM 900 BTS and UTRA BS are co-located.
6.6.3.2.3.1	Co-existence with DCS1800 – Operation in the same geographic area	This requirement may be applied for the protection of DCS 1800 MS in geographic areas in which both DCS 1800 and UTRA are deployed.
6.6.3.2.3.2	Co-existence with DCS1800 – Co-located base stations	This requirement may be applied for the protection of DCS 1800 BTS receivers when DCS 1800 BTS and UTRA BS are co-located.
6.6.3.2.4.1	Co-existence with UTRA FDD – Operation in the same geographic area	This requirement may be applied to geographic areas in which both UTRA-TDD and UTRA-FDD are deployed.
6.6.3.2.4.2	Co-existence with UTRA FDD – Co-located base stations	This requirement may be applied for the protection of UTRA-FDD BS receivers when UTRA-TDD BS and UTRA FDD BS are co-located.
7.5	Blocking characteristic	The requirement is applied according to what frequency bands in subclause 4.2 that are supported by the BS.
7.5	Blocking characteristics	This requirement may be applied for the protection of UTRA TDD BS receivers when UTRA TDD BS and GSM 900/DCS1800 BS are co-located.

---NEXT SECTION---

6.6.3 Spurious emissions

6.6.3.1 Definition and applicability

Spurious emissions are emissions which are caused by unwanted transmitter effects such as harmonics emission, parasitic emission, intermodulation products and frequency conversion products, but exclude out of band emissions. This is measured at the base station RF output port.

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

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

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

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

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

6.6.3.2 Minimum Requirements

6.6.3.2.1 Mandatory requirements

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

6.6.3.2.1.1 Spurious emissions (Category A)

The following requirements shall be met in cases where Category A limits for spurious emissions, as defined in ITU-R Recommendation SM.329-~~9~~8 [6], are applied.

6.6.3.2.1.1.1 3,84 Mcps TDD option

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

Table 6.29: BS Mandatory spurious emissions limits, Category A

Band	Maximum level	Measurement bandwidth	Note
9 kHz – 150 kHz	-13 dBm	1 kHz	Bandwidth as in ITU-R SM.329-~~9~~8, s4.1
150 kHz – 30 MHz		10 kHz	Bandwidth as in ITU-R SM.329-~~9~~8, s4.1
30 MHz – 1 GHz		100 kHz	Bandwidth as in ITU-R SM.329-~~9~~8, s4.1
1 GHz – 12,75 GHz		1 MHz	Upper frequency as in ITU-R SM.329-~~9~~8, s2.5 table 1

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

6.6.3.2.1.1.2 1,28 Mcps TDD option

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

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

Band	Maximum level	Measurement bandwidth	Note
9 kHz – 150 kHz	-13 dBm	1 kHz	Bandwidth as in ITU-R SM.329-9~~8~~, s4.1
150 kHz – 30 MHz		10 kHz	Bandwidth as in ITU-R SM.329-9~~8~~, s4.1
30 MHz – 1 GHz		100 kHz	Bandwidth as in ITU-R SM.329-9~~8~~, s4.1
1 GHz – 12,75 GHz		1 MHz	Upper frequency as in ITU-R SM.329-9~~8~~, s2.5 table 1

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

6.6.3.2.1.2 Spurious emissions (Category B)

The following requirements shall be met in cases where Category B limits for spurious emissions, as defined in ITU-R Recommendation SM.329-9~~8~~ [6], are applied.

6.6.3.2.1.2.1 3,84 Mcps TDD option

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

Table 6.30: BS Mandatory spurious emissions limits, Category B

Band	Maximum level	Measurement bandwidth	Note
9 kHz – 150 kHz	-36 dBm	1 kHz	Bandwidth as in ITU-R SM.329-9~~8~~, s4.1
150 kHz – 30 MHz	-36 dBm	10 kHz	Bandwidth as in ITU-R SM.329-9~~8~~, s4.1
30 MHz – 1 GHz	-36 dBm	100 kHz	Bandwidth as in ITU-R SM.329-9~~8~~, s4.1
1 GHz – Fc1 - 60 MHz or Fl - 10 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9~~8~~, s4.1
Fc1 - 60 MHz or Fl - 10 MHz *whichever is the higher* – Fc1 - 50 MHz or Fl -10 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9~~8~~, s4.3 and Annex 7
Fc1 - 50 MHz or Fl -10 MHz *whichever is the higher* – Fc2 + 50 MHz or Fu +10 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9~~8~~, s4.3 and Annex 7
Fc2 + 50 MHz or Fu + 10 MHz *whichever is the lower* – Fc2 + 60 MHz or Fu + 10 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9~~8~~, s4.3 and Annex 7
Fc2 + 60 MHz or Fu + 10 MHz *whichever is the lower* – 12,75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9~~8~~, s4.1. Upper frequency as in ITU-R SM.329-9~~8~~, s2.5 table 1

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

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

Fl : Lower frequency of the band in which TDD operates

Fu : Upper frequency of the band in which TDD operates

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

6.6.3.2.1.2.2 1,28 Mcps TDD option

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

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

Band	Maximum Level	Measurement Bandwidth	Note
9kHz – 150kHz	-36 dBm	1 kHz	Bandwidth as in ITU SM.329-9~~8~~, s4.1
150kHz – 30MHz	- 36 dBm	10 kHz	Bandwidth as in ITU SM.329-9~~8~~, s4.1
30MHz – 1GHz	-36 dBm	100 kHz	Bandwidth as in ITU SM.329-9~~8~~, s4.1
1GHz ↔ Fc1-19,2 MHz or Fl –10 MHz *whichever is the higher*	-30 dBm	1 MHz	Bandwidth as in ITU SM.329-9~~8~~, s4.1
Fc1 – 19,2 MHz or Fl -10 MHz *whichever is the higher* ↔ Fc1 - 16 MHz or Fl –10 MHz *whichever is the higher*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9~~8~~, s4.1
Fc1 - 16 MHz or Fl –10 MHz *whichever is the higher* ↔ Fc2 + 16 MHz or Fu +10 MHz *whichever is the lower*	-15 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9~~8~~, s4.1
Fc2 + 16 MHz or Fu + 10 MHz *whichever is the lower* ↔ Fc2 +19,2 MHz or Fu + 10 MHz *whichever is the lower*	-25 dBm	1 MHz	Specification in accordance with ITU-R SM.329-9~~8~~, s4.1
Fc2 + 19,2 MHz or Fu +10 MHz *whichever is the lower* ↔ 12,75 GHz	-30 dBm	1 MHz	Bandwidth as in ITU-R SM.329-9~~8~~, s4.1. Upper frequency as in ITU-R SM.329-9~~8~~, s2.5 table 1

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

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

Fl : Lower frequency of the band in which TDD operates

Fu : Upper frequency of the band in which TDD operates

The reference for this requirement is TS 25.105 subclause 6.6.3.1.2.1.2.

3GPP TSR RAN WG4 Meeting #24 **R4-021237**

Helsinki, Finland 12 - 16 August 2002

CR-Form-v7

CHANGE REQUEST

⌘ **34.124** **CR** **8** ⌘ **rev** ⌘ Current version: **5.0.0** ⌘

*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:	⌘	Update of reference to ITU-R recommendation SM.329-9
Source:	⌘	RAN WG4
Work item code:	⌘	LCRTDD-RF
Date:	⌘	21/08/2002
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The present document refers to ITU-R SM.329-8, which has been superseded by recently by SM.329-9. No actual requirements are changed. The header of subcluase 8.2.3.1 is missing
Summary of change:	⌘	The references to SM.329 are updated throughout the document Missing header added
Consequences if not approved:	⌘	There would be an uncertainty whether the 3GPP regulatory radio requirements are based on the latest ITU recommendations.

Clauses affected:	⌘	2, 3.1, 7.1, 8.2.2, 8.2.3, 8.2.3.2			
Other specs affected:	⌘	**Y** / **N**	Other core specifications	⌘	TS25.102 in Cr125;
		X /	Test specifications		TS34.122;
		/ **X**	O&M Specifications		
Other comments:	⌘				

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

2 References

The following documents contain provisions, which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific;
- for a specific reference, subsequent revisions do not apply;
- for a non-specific reference, subsequent revisions do apply. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TS 25.113: "3rd Generation Partnership Project; Technical Specification Group (TSG) RAN WG4; Base station EMC".

[2] 3GPP TS 34.121: "3rd Generation Partnership Project; Technical Specification Group (TSG) T WG1; Terminal Conformance Specification; Radio transmission and reception (FDD)".

[3] 3GPP TS 34.122: "3rd Generation Partnership Project; Technical Specification Group (TSG) T WG1; Terminal Conformance Specification; Radio transmission and reception (TDD)".

[4] IEC 61000-6-1 (1997): "Electromagnetic compatibility (EMC) – Part 6: Generic standards - Section 1: Immunity standard for residential, commercial and light-industrial environments".

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

[6] ISO 7637-1 (1990): "Road vehicles - Electrical disturbance by conduction and coupling - Part 1: Passenger cars and light commercial vehicles with nominal 12 V supply voltage - Electrical transient conduction along supply lines only".

[7] ISO 7637-2 (1990): "Road vehicles - Electrical disturbance by conduction and coupling - Part 2: Commercial vehicles with nominal 24 V supply voltage - Electrical transient conduction along supply lines only".

[8] 3GPP TR 25.990; 3rd Generation Partnership Project; Technical Specification Group Radio Access Network (RAN); Vocabulary
3GPP TR 21 905: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Vocabulary for 3GPP specifications".

[9] IEC 60050(161) (1998): "International Electrotechnical Vocabulary - Chapter 161: Electromagnetic compatibility".

[10] 3GPP TS 34.108: "3rd Generation Partnership Project (3GPP); Technical Specification Group (TSG) Terminal; Common test environments for user equipment (UE). Conformance Testing".

[11] ITU-R Recommendation SM.329-~~8~~9: "Spurious emissions".

[12] 3GPP TS 25.101: "3rd Generation Partnership Project (3GPP); Technical Specification Group (TSG) RAN WG4; UTRA (UE) FDD; Radio transmission and Reception".

[13] 3GPP TS 25.102: "3rd Generation Partnership Project (3GPP); Technical Specification Group (TSG) RAN WG4; UTRA (UE) TDD; Radio transmission and Reception".

[14] IEC CISPR publication 22; 3rd edition (1997-11): "Information technology equipment; Radio disturbance characteristics – Limits and methods of measurement".

[15] 3GPP TS 34.109: "3rd Generation Partnership Project (3GPP); Technical Specification Group (TSG) Terminal. Terminal Logical Test Interface; Special conformance testing functions".

[16] IEC CISPR publication 16-1; (1993); Radio disturbance and immunity measuring apparatus"; Am.1 (1997): "Specification for radio disturbance and immunity measuring apparatus and methods".

[17] IEC 61000-3-2; (1995-03): "Electromagnetic compatibility; Part 3 - Limits; section 2 – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)"; Am.1 (1997-09)".

[18] IEC 61000-3-3; (1994-12): "Electromagnetic compatibility; Part 3 - Limits; section 2 – Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current ≤ 16 A"

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

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

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

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

[23] IEC 61000-4-6: "Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – section 6: immunity to conducted disturbances induced by radio frequency fields".

[24] IEC 61000-4-11: "Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – section 11:Voltage dips, short interruptions, and voltage variations immunity test".

[25] ETR 027 (1991): "Radio Equipment and Systems (RES); Methods of measurement for private mobile radio equipment".

[26] ITU-T Recommendation P.64: "Telephone transmission quality, Telephone installations, Local line networks, Objective electro-acoustical measurements. Determination of sensitivity/frequency characteristics of local telephone systems".

[27] ITU-T Recommendation P.76: "Telephone transmission quality, Measurements related to speech loudness, Determination of loudness ratings; Fundamental principles, Annex A".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply.

Ancillary equipment: Equipment (apparatus), used in connection with a user equipment (UE) is considered as an ancillary equipment (apparatus) if:

- the equipment is intended for use in conjunction with a UE to provide additional operational and/or control features to the UE, (e.g. to extend control to another position or location); and
- the equipment cannot be used on a stand alone basis to provide user functions independently of a UE; and
- the UE to which it is connected, is capable of providing some intended operation such as transmitting and/or receiving without the ancillary equipment (i.e. it is not a sub-unit of the main equipment essential to the main equipment basic functions).

BLER (BLock Error Ratio): BLER is block error ratio. The BLER calculation shall be based on evaluating the CRC on each transport block .

Camped on a cell: The UE is in idle mode and has completed the cell selection/reselection process and has chosen a cell. The UE monitors system information and (in most cases) paging information. Note that the services may be limited, and that the PLMN may not be aware of the existence of the UE within the chosen cell.

Continuous phenomena (continuous disturbance): Electromagnetic disturbance, the effects of which on a particular device or equipment cannot be resolved into a succession of distinct effects (IEC 60050-161 [9]).

Data application ancillary: ancillary which provides send and/or receive data access to UMTS services via UE

Enclosure port: physical boundary of the apparatus through which electromagnetic fields may radiate or impinge. In the case of integral antenna equipment, this port is inseparable from the antenna port.

End- User data: Manufacturer defined data patterns for data transfer testing. Represents EUT´s typical user application (eg. photo, video, textfile, message) in its characteristics.

Idle mode: Idle mode is the state of User Equipment (UE) when switched on but with no Radio Resource Control (RRC) connection.

Integral antenna: antenna designed to be connected directly to the equipment with or without the use of an external connector and considered to be part of the equipment. An integral antenna may be fitted internally or externally to the equipment.

Maximum average power: The average transmitter output power obtained over any specified time interval, including periods with no transmission, when the transmit time slots are at the maximum power setting.

Necessary bandwidth: For a given class of emission, the width of the frequency band which is just sufficient to ensure the transmission of information at the rate and with the quality required under specified conditions.

Out of band emissions: Emission on a frequency or frequencies immediately outside the necessary bandwidth, which results from, the modulation process, but excluding spurious emissions.

NOTE: Any unwanted emission which falls at frequencies separated from the centre frequency of the emission by less than 250% of the necessary bandwidth of the emission will generally be considered out-of-band emission.

Port: particular interface, of the specified equipment (apparatus), with the electromagnetic environment. For example, any connection point on an equipment intended for connection of cables to or from that equipment is considered as a port (see figure 1).

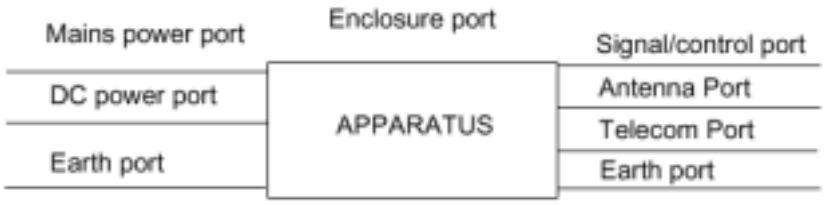

Figure 1: Examples of ports

Spurious emission from ITU-R SM 329-~~8~~9 [11]: Emission on a frequency, or frequencies, which are outside the necessary bandwidth and the level of which may be reduced without affecting the corresponding transmission of information. Spurious emissions include harmonic emissions, parasitic emissions, intermodulation products and frequency conversion products but exclude out-of-band emissions.

NOTE: For the purpose of this Recommendation all emissions, including intermodulation products, conversion products and parasitic emissions, which fall at frequencies separated from the centre frequency of the emission by 250% or more of the necessary bandwidth of the emission will generally be considered spurious emissions.

Telecommunication port: ports which are intended to be connected to telecommunication networks (e.g. public switched telecommunication networks, integrated services digital networks), local area networks (e.g. Ethernet, Token Ring) and similar networks (see CISPR 22 [14]).

Transient phenomena: Pertaining to or designating a phenomena or a quantity which varies between two consecutive steady states during a time interval short compared with the time-scale of interest (IEC 60050-161 [9])

Traffic mode: is the state of User Equipment (UE) when switched on and with Radio Resource Control (RRC) connection established.

Universal mobile telecommunications system (UMTS): The telecommunications system, incorporating mobile cellular and other functionality, that is the subject of specifications produced by 3GPP

User equipment (UE): is a "Mobile Station" (MS) which is an entity capable of accessing a set of UMTS services via one or more radio interfaces. This entity may be stationary or in motion within the UMTS service area while accessing the UMTS services, and may simultaneously serve one or more users.

Next changed section

7 Applicability overview tables

7.1 Emission

Table 1: Emission applicability

		Equipment test requirement				
Phenomenon	**Application**	**Equipment connected to fixed AC or DC power installations**	**Equipment connected to vehicular DC supplies**	**Equipment powered by integral battery**	**Reference subclause in the present document**	**Reference Standard**
Radiated emission	Enclosure	applicable	applicable	applicable	8.2	ITU-R SM.329-~~8~~9 1997 [11] TS25.101 [12]
Conducted emission	DC power input/output port	applicable	applicable	not applicable	8.3	CISPR 22 [14], CISPR 16-1 [16]
Conducted emission	AC mains input/output port	applicable	not applicable	not applicable	8.4	CISPR 22 [14],
Harmonic current emissions	AC mains input port	applicable	not applicable	not applicable	8.5	IEC 61000-3-2 [17]
Voltage fluctuations and flicker	AC mains input port	applicable	not applicable	not applicable	8.6	IEC 61000-3-3 [18]

Next changed section

8.2 Radiated Emission

This test is applicable to radio communications equipment and ancillary equipment.

This test shall be performed on the radio equipment and/or a representative configuration of the ancillary equipment.

8.2.1 Definition

This test assesses the ability of radio equipment and ancillary equipment to limit unwanted emissions from the enclosure port.

8.2.2 Test method

Whenever possible the site shall be a fully anechoic chamber (FAC) simulating the free-space conditions. EUT shall be placed on a non-conducting support. Maximum average power of any spurious components shall be detected by the test antenna and measuring receiver (e.g. a spectrum analyser).

At each frequency at which a component is detected, the EUT shall be rotated to obtain maximum response, and the effective radiated power (e.r.p.) of that component determined by a substitution measurement, which shall be the reference method. The measurement shall be repeated with the test antenna in the orthogonal polarization plane.

NOTE: Effective radiated power e.r.p. refers to the radiation of a half wave tuned dipole instead of an isotropic antenna. There is a constant difference of 2.15 dB between e.i.r.p. and e.r.p.

e.r.p. (dBm) = e.i.r.p. (dBm) – 2.15 Ref. ITU-R SM. 329-~~8~~9 ANNEX 1 [11]

Measurements are made with a tuned dipole antenna or a reference antenna with a known gain referenced to an isotropic antenna.

If a different test site or method is used, this shall be stated in the test report. The results shall be converted to the reference method values and the validity of the conversion shall be demonstrated.

8.2.3 Limits

The references for these requirements are ITU-R SM 329-~~8~~9 [11] and TS 25.101 subclauses 6.6.3.1. and 7.9.1. [12] and TS 25.102 subclauses 6.6.3 and 7.9. respectively.

8.2.3.1 FDD and 3,84 Mcps TDD option

The frequency boundary and reference bandwidths for the detailed transitions of the limits between the requirements for out of band emissions and spurious emissions are based on ITU-R SM 329-~~8~~9 [11].

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

Table 3: Radiated Spurious emissions requirements

Frequency	Minimum requirement (e.r.p.)/ Reference Bandwidth Idle mode	Minimum requirement (e.r.p.) / Reference Bandwidth Traffic mode
30 MHz ≤ f < 1000 MHz	-57dBm / 100 kHz	-36 dBm / 100 kHz
1 GHz ≤ f < 12.75 GHz fc – 12.5 MHz < f < fc + 12.5 MHz	-47dBm / 1MHz Not defined	-30 dBm / 100 kHz Not defined

NOTE: fc is the centre frequency of the TCH. The frequency range fc ± 12.5 MHz are covered by the "Out of Band" emission requirements of TS 34.121[2] and TS 34.122 [3].

8.2.3.2 1,28 Mcps TDD option

The frequency boundary and reference bandwidths for the detailed transitions of the limits between the requirements for out of band emissions and spurious emissions are based on ITU-R SM 329-~~8~~9 [11].

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

Table 3.1: Radiated Spurious emissions requirements

Frequency	Minimum requirement (e.r.p.)/ Reference Bandwidth Idle mode	Minimum requirement (e.r.p.) / Reference Bandwidth Traffic mode
30 MHz ≤ f < 1000 MHz	-57dBm / 100 kHz	-36 dBm / 100 kHz
1 GHz ≤ f < 12.75 GHz fc – 4 MHz < f < fc + 4 MHz	-47dBm / 1MHz Not defined	-30 dBm / 1 MHz Not defined

NOTE: fc is the centre frequency of the TCH. The frequency range fc ± 4 MHz are covered by the "Out of Band" emission requirements of TS 34.121[2] and TS 34.122 [3] .