

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

RP-040192

Title CRs (Rel-4 and Rel-5/Rel-6 Category A) to TS 25.104 & TS 25.141 for the introduction of new requirement: Adjacent Channel Rejection Ratio for Repeaters

Source TSG RAN WG4

Agenda Item 7.5.4

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-040380	25.106	033	1	F	Rel-4	4.7.0	New Adjacent Channel Rejection Ratio for Repeaters	RInImp-REP
R4-040381	25.106	034	1	A	Rel-5	5.7.0	New Adjacent Channel Rejection Ratio for Repeaters	RInImp-REP
R4-040382	25.106	035	1	A	Rel-6	6.0.0	New Adjacent Channel Rejection Ratio for Repeaters	RInImp-REP
R4-040383	25.143	044	1	F	Rel-4	4.9.0	New Adjacent Channel Rejection Ratio for Repeaters	RInImp-Rep
R4-040384	25.143	045	1	A	Rel-5	5.7.0	New Adjacent Channel Rejection Ratio for Repeaters	RInImp-Rep
R4-040385	25.143	046	1	A	Rel-6	6.0.0	New Adjacent Channel Rejection Ratio for Repeaters	RInImp-Rep

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CHANGE REQUEST⌘ **25.106 CR 033** ⌘ rev **1** ⌘ Current version: **4.7.0** ⌘For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.Proposed change affects: UICC apps ⌘ ME Radio Access Network Core Network

Title:	⌘ New Adjacent Channel Rejection Ratio Requirement for Repeater		
Source:	⌘ RAN WG4		
Work item code:	⌘ RInImp-REP	Date:	⌘ 24/05/2004
Category:	⌘ F	Release:	⌘ Rel-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ An Adjacent Channel Rejection Ratio Requirement for Repeater is missing.
Summary of change:	⌘ An Adjacent Channel Rejection Ratio Requirement for Repeater is added
Consequences if not approved:	⌘ An Adjacent Channel Rejection Ratio Requirement for Repeater is missing. Isolated Impact Analysis: UTRA FDD network performance in the adjacent channel of the Repeater could be affected, if this CR is not approved. Approval of this CR would not affect FDD implementation behaving like indicated in the CR.

Clauses affected:	⌘ New clause.										
Other specs affected:	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications Test specifications O&M Specifications	⌘ TS25.143
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input checked="" type="checkbox"/>	<input type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
Other comments:	⌘ Equivalent CRs in other Releases: CR034r1 cat. A to 25.106 v5.7.0, CR035r1 cat. A to 25.106 v6.0.0										

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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.

xx Adjacent Channel Rejection Ratio (ACRR)

xx.1 Definitions and applicability

Adjacent Channel Rejection Ratio (ACRR) is the ratio of the RRC ~~filtered mean power amplification~~ weighted gain per carrier of the repeater in the pass band to the RRC ~~filtered mean power amplification~~ weighted gain of the repeater on an adjacent channel.

The ~~measurements~~ requirement shall apply to the Uplink and Downlink of Repeater where the donor link is maintained via antennas (over the air Repeater).

xx.2~~1~~ Minimum Requirements

In normal conditions the ACRR shall be higher than the value specified in the Table xx.1.

Table xx.1: Repeater ACRR

<u>Repeater maximum output power as in 9.1.1</u>	<u>Channel offset from the centre frequency of the first or last 5 MHz channel within the pass band.</u>	<u>ACRR limit</u>
<u>$P \geq 31$ dBm</u>	<u>5 MHz</u>	<u>33dB</u>
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<u>$P \leq 31$ dBm</u>	<u>5 MHz</u>	<u>20dB</u>
<u>$P \leq 31$ dBm</u>	<u>10 MHz</u>	<u>20dB</u>

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CHANGE REQUEST⌘ **25.106 CR 034** ⌘ rev **1** ⌘ Current version: **5.7.0** ⌘For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.Proposed change affects: UICC apps ⌘ ME Radio Access Network Core Network

Title:	⌘ New Adjacent Channel Rejection Ratio Requirement for Repeater		
Source:	⌘ RAN WG4		
Work item code:	⌘ RInImp-REP	Date:	⌘ 24/05/2004
Category:	⌘ A	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
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Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input checked="" type="checkbox"/>	<input type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
Other comments:	⌘ Equivalent CRs in other Releases: CR033r1 cat. F to 25.106 v4.7.0, CR035r1 cat. A to 25.106 v6.0.0										

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CHANGE REQUEST⌘ **25.106 CR 035** ⌘ rev **1** ⌘ Current version: **6.0.0** ⌘For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ New Adjacent Channel Rejection Ratio Requirement for Repeater		
Source:	⌘ RAN WG4		
Work item code:	⌘ RInImp-REP	Date:	⌘ 24/05/2004
Category:	⌘ A	Release:	⌘ Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
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Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
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Other comments:	⌘ Equivalent CRs in other Releases: CR033r1 cat. F to 25.106 v4.7.0, CR034r1 cat. A to 25.106 v5.7.0										

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<u>$P \leq 31$ dBm</u>	<u>10 MHz</u>	<u>20dB</u>

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CHANGE REQUEST⌘ **25.143 CR 044** ⌘ rev **1** ⌘ Current version: **4.9.0** ⌘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:	⌘ New Adjacent Channel Rejection Ratio Requirement for Repeater		
Source:	⌘ RAN WG4		
Work item code:	⌘ RInImp-Rep	Date:	⌘ 24/05/2004
Category:	⌘ F	Release:	⌘ Rel-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
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			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ An Adjacent Channel Rejection Ratio Requirement for Repeater the corresponding Uncertainty and Test Tolerance is missing.
Summary of change:	⌘ An Adjacent Channel Rejection Ratio Requirement for Repeater the corresponding Uncertainty and Test Tolerance is added.
Consequences if not approved:	⌘ An Adjacent Channel Rejection Ratio Requirement for Repeater is missing. Isolated Impact Analysis: UTRA FDD network performance in the adjacent channel of the Repeater could be affected, if this CR is not approved. Approval of this CR would not affect FDD implementation behaving like indicated in the CR.

Clauses affected:	⌘ New clause, 5.1.2, 5.2										
Other specs affected:	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table>	Y	N	X			X		X	Other core specifications	⌘ TS25.106
Y	N										
X											
	X										
	X										
		Test specifications									
		O&M Specifications									
Other comments:	⌘ Equivalent CRs in other Releases: CR045r1 cat. A to 25.143 v5.7.0, CR046r1 cat. A to 25.143 v6.0.0										

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xx.2 Minimum Requirements

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Table xx.1: Repeater ACRR

<u>Repeater maximum output power as in 9.1.1</u>	<u>Channel offset from the centre frequency of the first or last 5 MHz channel within the pass band.</u>	<u>ACRR limit</u>
<u>$P \geq 31$ dBm</u>	<u>5 MHz</u>	<u>33dB</u>
<u>$P \geq 31$ dBm</u>	<u>10 MHz</u>	<u>33dB</u>
<u>$P \leq 31$ dBm</u>	<u>5 MHz</u>	<u>20dB</u>
<u>$P \leq 31$ dBm</u>	<u>10 MHz</u>	<u>20dB</u>

xx.3 Test purpose

To verify that the Repeater ACRR requirement shall be met as specified in subclause xx.1.

xx.4 Method of test

xx.4.1 Initial conditions

- 1) Set-up the equipment as shown in annex A.
- 2) Connect the signal generator equipment to the Repeater input port.
- 3) Connect the power measuring equipment to the Repeater output port.
- 4) The measurement device characteristics shall be:
 - measurement filter bandwidth: defined in subclause xx.1;
 - detection mode: true RMS voltage or true average power.

xx.4.2 Procedure

- 1) Set the signal generator to transmit a signal modulated with a combination of PCCPCH, SCCPCH and Dedicated Physical Channels specified as test model 1 in TS 25.141 at the first or last 5 MHz channel within the pass band.
- 2) Adjust the input power to the Repeater to create the maximum nominal Repeater output power at maximum gain
- 3) Measure the RRC filtered mean power at the RF output port over a certain slot.
- 4) Set the signal generator to transmit the same signal and the same input power at one of the channel offsets according to Table xx.1.

- 5) Measure the RRC filtered mean power at the RF output port over a certain slot.
- 6) Calculate the ratio of the measured power in the pass band to the measured power at the channel offset.
- 7) Repeat step 4) to 6) until all channel offsets in Table xx.1 are measured.

xx.4.3 Test Requirements

In normal conditions as specified in section 5.4.1, the ACRR shall be higher than the value specified in the Table xx.2.

Table xx.2: Repeater ACRR

<u>Repeater maximum output power as in 9.1.1.1</u>	<u>Channel offset from the centre frequency of the first or last 5 MHz channel within the pass band.</u>	<u>ACRR limit</u>
<u>$P_{\text{max}} \geq 31 \text{ dBm}$</u>	<u>5 MHz</u>	<u>32,3dB</u>
<u>$P_{\text{max}} \geq 31 \text{ dBm}$</u>	<u>10 MHz</u>	<u>32,3dB</u>
<u>$P_{\text{max}} \leq 31 \text{ dBm}$</u>	<u>5 MHz</u>	<u>19,3dB</u>
<u>$P_{\text{max}} \leq 31 \text{ dBm}$</u>	<u>10 MHz</u>	<u>19,3dB</u>

Next changed section

5.1.2 Measurements of Repeater

Table 5.1: Maximum Test System Uncertainty

Subclause	Maximum Test System Uncertainty	Range over which Test System Uncertainty applies
6.1 Maximum output power	$\pm 0,7$ dB	
7 Frequency error	± 12 Hz	Measurement results of ± 500 Hz
8 Out of band gain	$\pm 0,5$ dB Calibration of test set-up shall be made without D.U.T. in order to achieve the accuracy	
9.1 Spectrum emission mask	$\pm 1,5$ dB Due to carrier leakage for measurements specified in a 1MHz bandwidth close to the carrier (4 MHz to 8 MHz), integration of the measurement using several narrower bandwidth measurements may be necessary in order to achieve the above accuracy. The interference from the signal generator ACLR shall be minimum 10 dB below that of a Base Station according to TS25.141	
9.2 Spurious emissions	In UTRA and coexistence receive bands: for results > -60 dBm $\pm 2,0$ dB for results < -60 dBm $\pm 3,0$ dB Outside above range: emission power $f \leq 2,2$ GHz $\pm 1,5$ dB; $2,2$ GHz $< f \leq 4$ GHz $\pm 2,0$ dB; $f > 4$ GHz $\pm 4,0$ dB. The interference from the signal generator ACLR shall be minimum 10 dB below that of a Base Station according to TS25.141	
10.1 Error vector magnitude	$\pm 2,5$ % (single code applied) ($\pm 2,5$ % measurement error for single code). 5,0 % EVM in the stimulus signal (single code) will shift the EVM maximum value 0,7% to 18,2%. (RSS repeater EVM and Stimulus EVM.)	Measurement results from 12,5% to 22,5% at signal power = $P_{\max} - 3$ dB to $P_{\max} - 18$ dB
10.2 Peak code domain error	$\pm 1,1$ dB Formula: RSS measurement error and impedance mismatch error (using $\pm 1,0$ dB measurement error and $\pm 0,5$ dB impedance mismatch error (stimulus side) assuming 14 dB return loss)	Measurement results from -36 dB to -30 dB, at signal power = $P_{\max} - 3$ dB to $P_{\max} - 18$ dB
11 Input intermodulation Characteristics	$\pm 1,2$ dB Formula: RSS CW1 level error, 2 x CW2 level error, and measurement error (using all errors = $\pm 0,5$ dB)	
12 Output Intermodulation	$\pm 2,1$ dB Spectrum emission Formula: RSS 2x Interference signal level error and Spectrum emission measurement level error. (1 dB interference signal level error is assumed.) Due to carrier leakage for measurements specified in a 1MHz bandwidth close to the carrier (4 MHz to 8 MHz), integration of the measurement using several narrower bandwidth measurements may be necessary in order to achieve the above accuracy. The interference from the signal generator ACLR	

	<p>shall be minimum 10 dB below that of a Base Station</p> <p>For spurious emission:</p> <p>In UTRA and coexistence receive bands: for results > -60 dBm $\pm 2,0$ dB for results < -60 dBm $\pm 3,0$ dB</p> <p>Outside above range: emission power f \leq 2,2 GHz $\pm 1,5$ dB; 2,2 GHz < f \leq 4 GHz $\pm 2,0$ dB; f > 4 GHz $\pm 4,0$ dB.</p> <p>The interference signal must have a spurious emission level at least 10 dB below the spurious levels required in 9.2.</p>	
xx Adjacent Channel Rejection Ratio	±0,7 dB	

5.2 Repeater test tolerances (informative)

The Test Tolerances defined in this subclause have been used to relax the Minimum Requirements in this specification to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.)

Table 5.2: Test Tolerance

Subclause	Test Tolerance	Notes
6.1 Maximum output power	0,7 dB	
9.1 Spectrum emission mask	1,5 dB	
9.2 Spurious emissions	0 dB	
7 Frequency error	12 Hz	
10.1 Error vector magnitude	0 %	Target value is shifted due to stimulus EVM
10.2 Peak code domain error	1,1 dB	
8 Out of band gain	0,5dB	
11 Input intermodulation Characteristics	1,2dB	
12 Output intermodulation	1,5 dB for spectrum emission 0 dB for spurious emission	
xx Adjacent Channel Rejection Ratio	0,7 dB	

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CHANGE REQUEST⌘ **25.143 CR 045** ⌘ rev **1** ⌘ Current version: **5.7.0** ⌘For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.Proposed change affects: UICC apps ME Radio Access Network Core Network

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	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
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	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ An Adjacent Channel Rejection Ratio Requirement for Repeater the corresponding Uncertainty and Test Tolerance is missing.
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Clauses affected:	⌘ New Clause, 5.1.2, 5.2										
Other specs affected:	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table>	Y	N	X			X		X	Other core specifications	⌘ TS25.106
Y	N										
X											
	X										
	X										
		Test specifications									
		O&M Specifications									
Other comments:	⌘ Equivalent CRs in other Releases: CR044r1 cat. F to 25.143 v4.9.0, CR046r1 cat. A to 25.143 v6.0.0										

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xx Adjacent Channel Rejection Ratio (ACRR)

xx.1 Definitions and applicability

Adjacent Channel Rejection Ratio (ACRR) is the ratio of the RRC ~~filtered mean power amplification~~ weighted gain per carrier of the repeater in the pass band to the RRC ~~filtered mean power amplification~~ weighted gain of the repeater on an adjacent channel.

The ~~measurements~~ requirement shall apply to the Uplink and Downlink of Repeater where the donor link is maintained via antennas (over the air Repeater).

xx.2 Minimum Requirements

In normal conditions the ACRR shall be higher than the value specified in the Table xx.1.

Table xx.1: Repeater ACRR

<u>Repeater maximum output power as in 9.1.1</u>	<u>Channel offset from the centre frequency of the first or last 5 MHz channel within the pass band.</u>	<u>ACRR limit</u>
<u>$P \geq 31$ dBm</u>	<u>5 MHz</u>	<u>33dB</u>
<u>$P \geq 31$ dBm</u>	<u>10 MHz</u>	<u>33dB</u>
<u>$P \leq 31$ dBm</u>	<u>5 MHz</u>	<u>20dB</u>
<u>$P \leq 31$ dBm</u>	<u>10 MHz</u>	<u>20dB</u>

xx.3 Test purpose

To verify that the Repeater ACRR requirement shall be met as specified in subclause xx.1.

xx.4 Method of test

xx.4.1 Initial conditions

- 1) Set-up the equipment as shown in annex A.
- 2) Connect the signal generator equipment to the Repeater input port.
- 3) Connect the power measuring equipment to the Repeater output port.
- 4) The measurement device characteristics shall be:
 - measurement filter bandwidth: defined in subclause xx.1;
 - detection mode: true RMS voltage or true average power.

xx.4.2 Procedure

- 1) Set the signal generator to transmit a signal modulated with a combination of PCCPCH, SCCPCH and Dedicated Physical Channels specified as test model 1 in TS 25.141 at the first or last 5 MHz channel within the pass band.
- 2) Adjust the input power to the Repeater to create the maximum nominal Repeater output power at maximum gain
- 3) Measure the RRC filtered mean power at the RF output port over a certain slot.
- 4) Set the signal generator to transmit the same signal and the same input power at one of the channel offsets according to Table xx.1.

- 5) Measure the RRC filtered mean power at the RF output port over a certain slot.
- 6) Calculate the ratio of the measured power in the pass band to the measured power at the channel offset.
- 7) Repeat step 4) to 6) until all channel offsets in Table xx.1 are measured.

xx.4.3 Test Requirements

In normal conditions as specified in section 5.4.1, the ACRR shall be higher than the value specified in the Table xx.2.

Table xx.2: Repeater ACRR

<u>Repeater maximum output power as in 9.1.1.1</u>	<u>Channel offset from the centre frequency of the first or last 5 MHz channel within the pass band.</u>	<u>ACRR limit</u>
<u>$P_{\geq} 31$ dBm</u>	<u>5 MHz</u>	<u>32,3dB</u>
<u>$P_{\geq} 31$ dBm</u>	<u>10 MHz</u>	<u>32,3dB</u>
<u>$P_{\leq} 31$ dBm</u>	<u>5 MHz</u>	<u>19,3dB</u>
<u>$P_{\leq} 31$ dBm</u>	<u>10 MHz</u>	<u>19,3dB</u>

Next changed section

5.1.2 Measurements of Repeater

Table 5.1: Maximum Test System Uncertainty

Subclause	Maximum Test System Uncertainty	Range over which Test System Uncertainty applies
6.1 Maximum output power	$\pm 0,7$ dB	
7 Frequency error	± 12 Hz	Measurement results of ± 500 Hz
8 Out of band gain	$\pm 0,5$ dB Calibration of test set-up shall be made without D.U.T. in order to achieve the accuracy	
9.1 Spectrum emission mask	$\pm 1,5$ dB Due to carrier leakage for measurements specified in a 1MHz bandwidth close to the carrier (4 MHz to 8 MHz), integration of the measurement using several narrower bandwidth measurements may be necessary in order to achieve the above accuracy. The interference from the signal generator ACLR shall be minimum 10 dB below that of a Base Station according to TS25.141	
9.2 Spurious emissions	In UTRA and coexistence receive bands: for results > -60 dBm $\pm 2,0$ dB for results < -60 dBm $\pm 3,0$ dB Outside above range: emission power $f \leq 2,2$ GHz $\pm 1,5$ dB; $2,2$ GHz $< f \leq 4$ GHz $\pm 2,0$ dB; $f > 4$ GHz $\pm 4,0$ dB. The interference from the signal generator ACLR shall be minimum 10 dB below that of a Base Station according to TS25.141	
10.1 Error vector magnitude	$\pm 2,5$ % (single code applied) ($\pm 2,5$ % measurement error for single code). 5,0 % EVM in the stimulus signal (single code) will shift the EVM maximum value 0,7% to 18,2%. (RSS repeater EVM and Stimulus EVM.)	Measurement results from 12,5% to 22,5% at signal power = $P_{\max} - 3$ dB to $P_{\max} - 18$ dB
10.2 Peak code domain error	$\pm 1,1$ dB Formula: RSS measurement error and impedance mismatch error (using $\pm 1,0$ dB measurement error and $\pm 0,5$ dB impedance mismatch error (stimulus side) assuming 14 dB return loss)	Measurement results from -36 dB to -30 dB, at signal power = $P_{\max} - 3$ dB to $P_{\max} - 18$ dB
11 Input intermodulation Characteristics	$\pm 1,2$ dB Formula: RSS CW1 level error, 2 x CW2 level error, and measurement error (using all errors = $\pm 0,5$ dB)	
12 Output Intermodulation	$\pm 2,1$ dB Spectrum emission Formula: RSS 2x Interference signal level error and Spectrum emission measurement level error. (1 dB interference signal level error is assumed.) Due to carrier leakage for measurements specified in a 1MHz bandwidth close to the carrier (4 MHz to 8 MHz), integration of the measurement using several narrower bandwidth measurements may be necessary in order to achieve the above accuracy. The interference from the signal generator ACLR	

	<p>shall be minimum 10 dB below that of a Base Station</p> <p>For spurious emission:</p> <p>In UTRA and coexistence receive bands: for results > -60 dBm ±2,0 dB for results < -60 dBm ±3,0 dB</p> <p>Outside above range: emission power f ≤ 2,2 GHz ±1,5 dB; 2,2 GHz < f ≤ 4 GHz ±2,0 dB; f > 4 GHz ±4,0 dB.</p> <p>The interference signal must have a spurious emission level at least 10 dB below the spurious levels required in 9.2.</p>	
13 Adjacent Channel Rejection Ratio	±0,7 dB	

5.2 Repeater test tolerances (informative)

The Test Tolerances defined in this subclause have been used to relax the Minimum Requirements in this specification to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.)

Table 5.2: Test Tolerance

Subclause	Test Tolerance	Notes
6.1 Maximum output power	0,7 dB	
9.1 Spectrum emission mask	1,5 dB	
9.2 Spurious emissions	0 dB	
7 Frequency error	12 Hz	
10.1 Error vector magnitude	0 %	Target value is shifted due to stimulus EVM
10.2 Peak code domain error	1,1 dB	
8 Out of band gain	0,5dB	
11 Input intermodulation Characteristics	1,2dB	
12 Output intermodulation	1,5 dB for spectrum emission 0 dB for spurious emission	
13 Adjacent Channel Rejection Ratio	0,7 dB	

Beijing, China 10 - 14 May 2004

CR-Form-v7

CHANGE REQUEST⌘ **25.143 CR 046** ⌘ rev **1** ⌘ Current version: **6.0.0** ⌘For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ New Adjacent Channel Rejection Ratio Requirement for Repeater		
Source:	⌘ RAN WG4		
Work item code:	⌘ RInImp-Rep	Date:	⌘ 24/05/2004
Category:	⌘ A	Release:	⌘ Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
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			Rel-6 (Release 6)

Reason for change:	⌘ An Adjacent Channel Rejection Ratio Requirement for Repeater the corresponding Uncertainty and Test Tolerance is missing.
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xx Adjacent Channel Rejection Ratio (ACRR)

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xx.3 Test purpose

To verify that the Repeater ACRR requirement shall be met as specified in subclause xx.1.

xx.4 Method of test

xx.4.1 Initial conditions

- 1) Set-up the equipment as shown in annex A.
- 2) Connect the signal generator equipment to the Repeater input port.
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- 4) The measurement device characteristics shall be:
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- 1) Set the signal generator to transmit a signal modulated with a combination of PCCPCH, SCCPCH and Dedicated Physical Channels specified as test model 1 in TS 25.141 at the first or last 5 MHz channel within the pass band.
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xx.4.3 Test Requirements

In normal conditions as specified in section 5.4.1, the ACRR shall be higher than the value specified in the Table xx.2.

Table xx.2: Repeater ACRR

<u>Repeater maximum output power as in 9.1.1.1</u>	<u>Channel offset from the centre frequency of the first or last 5 MHz channel within the pass band.</u>	<u>ACRR limit</u>
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11 Input intermodulation Characteristics	1,2dB	
12 Output intermodulation	1,5 dB for spectrum emission 0 dB for spurious emission	
13 Adjacent Channel Rejection Ratio	0,7 dB	