TSG RAN Meeting #19 **RP-030035**
Birmingham, United Kingdom, 11 - 14 March, 2003

Title **CRs (Rel-4 and Rel-5/Rel-6 Category A) to TS 25.104 & TS 25.141 on "Correction to external equipment definition"**
Source **TSG RAN WG4**
Agenda Item **8.4.4**

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-020141	25.104	180		F	Rel-4	4.6.0	Correction to external equipment definition	TEI4
R4-020142	25.104	181		A	Rel-5	5.5.0	Correction to external equipment definition	TEI4
R4-020143	25.104	182		A	Rel-6	6.0.0	Correction to external equipment definition	TEI4
R4-020148	25.105	148		F	Rel-4	4.6.0	Correction to external equipment definition	TEI4
R4-020149	25.105	149		A	Rel-5	5.3.0	Correction to external equipment definition	TEI4
R4-020144	25.141	286		F	Rel-4	4.7.0	Correction to external equipment definition	TEI4
R4-020145	25.141	287		A	Rel-5	5.5.0	Correction to external equipment definition	TEI4
R4-020146	25.141	288		A	Rel-6	6.0.0	Correction to external equipment definition	TEI4
R4-020150	25.142	163		F	Rel-4	4.7.0	Correction to external equipment definition	TEI4
R4-020151	25.142	164		A	Rel-5	5.3.0	Correction to external equipment definition	TEI4

3GPP TSG RAN WG4 (Radio) Meeting #26 **R4-030141**

Madrid, Spain 17 - 22 February, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.104** **CR** **180** ⌘ **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:	⌘	Correction to external equipment definition
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
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:	⌘	The definition of external equipment is not harmonised between FDD and TDD specifications 25.104, 25.105, 25.141 and 25.142. The term diplexer is used in FDD specifications but it is not defined in current 3GPP specifications. Therefore it is proposed to align external equipment definition between all related specifications. Sections 6.1 and 7.1 in 25.104 are defining the external equipment and test ports A and B. To align specifications the term diplexer can be removed from FDD specifications. The actual definition " any external apparatus " already covers all posibilities including diplexers. The part in the definition " ... such as a TX amplifier... " can be interpreted as an example of external device and the figure illustrates a sample configuration as well.
Summary of change:	⌘	The definition of external equipment is specified generic in order to include all types of external equipment. - term diplexer is removed from the text - in figures 6.1 and 7.1 the term “external diplexer” is replaced by “external device”
Consequences if not approved:	⌘	Specifications are not harmonised. There exist differences (diplexer) between the "FDD specs" 25.104/25.141 and the "TDD specs" 25.105/25.142. **Isolated impact analysis:** This change does not impact Node-B implementation or Node-B – UE interworking as it harmonise the external equipment definition.

Clauses affected:	⌘	6.1; 7.1

		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
		X		Test specifications		25.141
			X	O&M Specifications		
Other comments:	⌘	The CR is linked to - 25.105 CRs 148 for Rel4, 149 for Rel5 - 25.142 CRs 163 for Rel4, 164 for Rel5 - 25.141 CRs 286 for Rel4, 287 for Rel5, 288 for Rel6 - Equivalent CRs in other Releases: CR181 cat. A to 25.104 v5.5.0, CR182 cat. A to 25.104 v6.0.0				

How to create CRs using this form:

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

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

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

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

5.4.2 Channel raster

The channel raster is 200 kHz, which means that the center frequency must be an integer multiple of 200 kHz.

5.4.3 Channel number

The carrier frequency is designated by the UTRA Absolute Radio Frequency Channel Number (UARFCN). The value of the UARFCN in the IMT2000 band is defined as follows:

Table 5.1: UTRA Absolute Radio Frequency Channel Number

Uplink	$N_u = 5 * F_{uplink}$	0.0 MHz ≤ F_{uplink} ≤ 3276.6 MHz where F_{uplink} is the uplink frequency in MHz
Downlink	$N_d = 5 * F_{downlink}$	0.0 MHz ≤ $F_{downlink}$ ≤ 3276.6 MHz where $F_{downlink}$ is the downlink frequency in MHz

Table 5.1A: UARFCN definition (Band b, region 2, Additional Channels)

Uplink	$N_u = 5 * ((F_{uplink} – 100khz) – 1850)$	1852.5, 1857.5, 1862.5, 1867.5, 1872.5, 1877.5, 1882.5, 1887.5, 1892.5, 1897.5, 1902.5, 1907.5
Downlink	$N_d = 5 * ((F_{downlink} – 100khz) – 1850)$	1932.5, 1937.5, 1942.5, 1947.5, 1952.5, 1957.5, 1962.5, 1967.5, 1972.5, 1977.5, 1982.5, 1987.5

6 Transmitter characteristics

6.1 General

Unless otherwise stated, the transmitter characteristics are specified at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a TX amplifier, ~~a diplexer,~~ a filter or the combination of such devices is used, requirements apply at the far end antenna connector (port B).

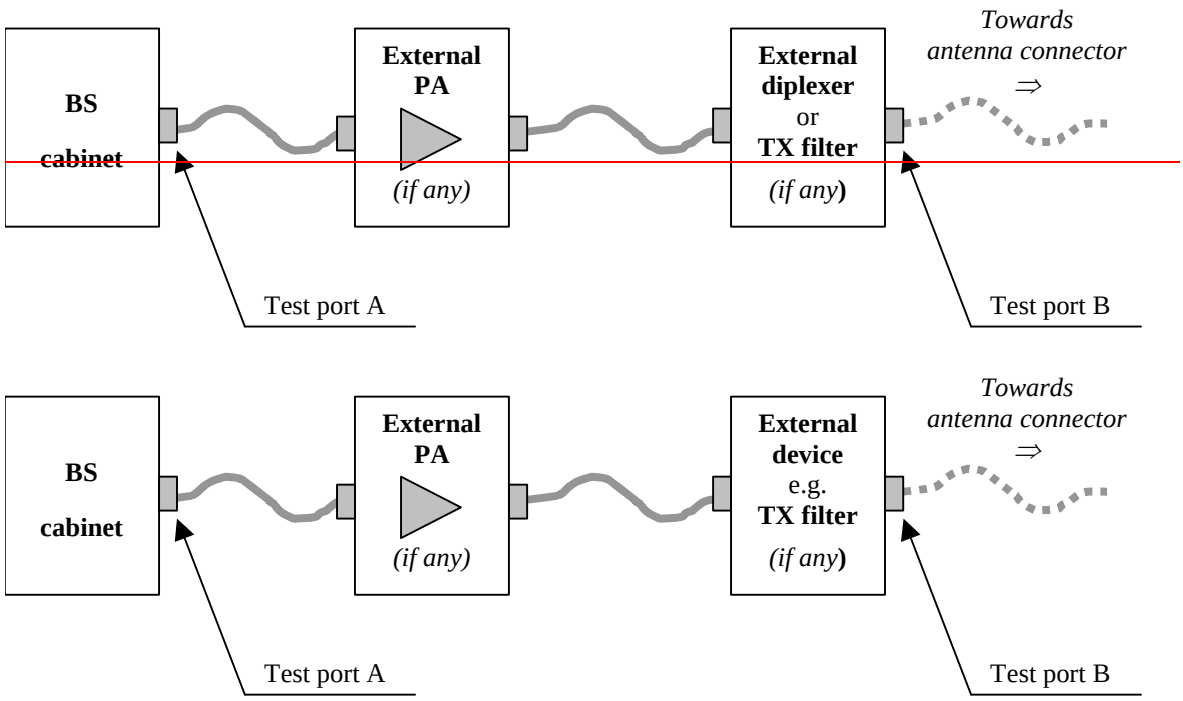

Figure 6.1: Transmitter test ports

--- next changed section ---

$$RC_0(t) = \frac{\sin\left(\pi \frac{t}{T_C}(1-\alpha)\right) + 4\alpha \frac{t}{T_C}\cos\left(\pi \frac{t}{T_C}(1+\alpha)\right)}{\pi \frac{t}{T_C}\left(1-\left(4\alpha \frac{t}{T_C}\right)^2\right)}$$

Where the roll-off factor α = 0.22 and the chip duration:

$$T_C = \frac{1}{chiprate} \approx 0.26042\mu s$$

6.8.2 Error Vector Magnitude

The Error Vector Magnitude is a measure of the difference between the reference waveform and the measured waveform. This difference is called the error vector. Both waveforms pass through a matched Root Raised Cosine filter with bandwidth 3.84 MHz and roll-off α =0.22. Both waveforms are then further modified by selecting the frequency, absolute phase, absolute amplitude and chip clock timing so as to minimise the error vector. The EVM result is defined as the square root of the ratio of the mean error vector power to the mean reference power expressed as a %. The measurement interval is one timeslot as defined by the C-PICH (when present) otherwise the measurement interval is one timeslot starting with the beginning of the SCH. The requirement is valid over the total power dynamic range as specified in subclause 6.4.3.

6.8.2.1 Minimum requirement

The Error Vector Magnitude shall not be worse than 17.5 %.

6.8.3 Peak code Domain error

The Peak Code Domain Error is computed by projecting the power of the error vector (as defined in 6.8.2) onto the code domain at a specified spreading factor. The Code Domain Error for every code in the domain is defined as the ratio of the mean power of the projection onto that code, to the mean power of the composite reference waveform. This ratio is expressed in dB. The Peak Code Domain Error is defined as the maximum value for the Code Domain Error for all codes. The measurement interval is one timeslot as defined by the C-PICH (when present) otherwise the measurement interval is one timeslot starting with the beginning of the SCH.

6.8.3.1 Minimum requirement

The peak code domain error shall not exceed -33 dB at spreading factor 256.

7 Receiver characteristics

7.1 General

The requirements in Section 7 assume that the receiver is not equipped with diversity. For receivers with diversity, the requirements apply to each antenna connector separately, with the other one(s) terminated or disabled .The requirements are otherwise unchanged.

Unless otherwise stated, the receiver characteristics are specified at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a RX amplifier, ~~a diplexer,~~ a filter or the combination of such devices is used, requirements apply at the far end antenna connector (port B).

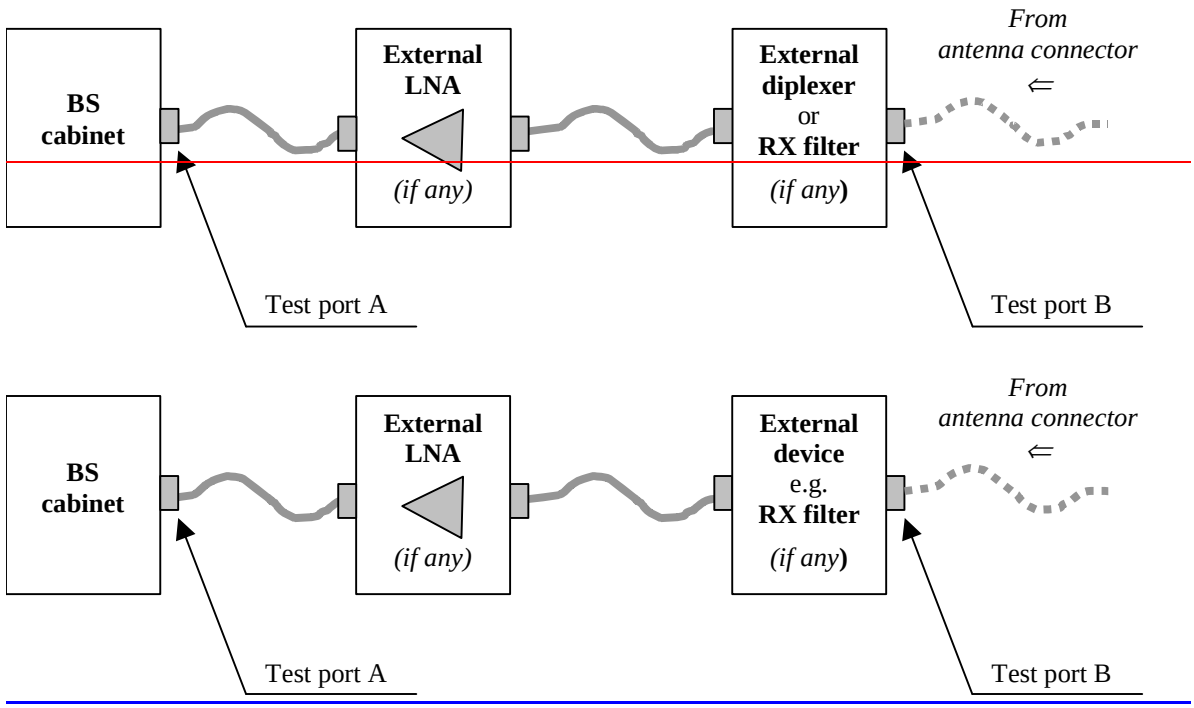

Figure 7.1: Receiver test ports

3GPP TSG RAN WG4 (Radio) Meeting #26 **R4-030142**

Madrid, Spain 17 - 22 February, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.104** **CR** **181** ⌘ **rev** ⌘ Current version: **5.5.0** ⌘

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

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

Title:	⌘	Correction to external equipment definition
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
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:	⌘	The definition of external equipment is not harmonised between FDD and TDD specifications 25.104, 25.105, 25.141 and 25.142. The term diplexer is used in FDD specifications but it is not defined in current 3GPP specifications. Therefore it is proposed to align external equipment definition between all related specifications. Sections 6.1 and 7.1 in 25.104 are defining the external equipment and test ports A and B. To align specifications the term diplexer can be removed from FDD specifications. The actual definition " any external apparatus " already covers all posibilities including diplexers. The part in the definition " ... such as a TX amplifier... " can be interpreted as an example of external device and the figure illustrates a sample configuration as well.
Summary of change:	⌘	The definition of external equipment is specified generic in order to include all types of external equipment. - term diplexer is removed from the text - in figures 6.1 and 7.1 the term “external diplexer” is replaced by “external device”
Consequences if not approved:	⌘	Specifications are not harmonised. There exist differences (diplexer) between the "FDD specs" 25.104/25.141 and the "TDD specs" 25.105/25.142. **Isolated impact analysis:** This change does not impact Node-B implementation or Node-B – UE interworking as it harmonise the external equipment definition.

Clauses affected:	⌘	6.1; 7.1

		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
		X		Test specifications		25.141
			X	O&M Specifications		
Other comments:	⌘	The CR is linked to - 25.105 CRs 148 for Rel4, 149 for Rel5 - 25.142 CRs 163 for Rel4, 164 for Rel5 - 25.141 CRs 286 for Rel4, 287 for Rel5, 288 for Rel6 - Equivalent CRs in other Releases: CR180 cat. F to 25.104 v4.6.0, CR182 cat. A to 25.104 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.

5.4.3 Channel number

The carrier frequency is designated by the UTRA Absolute Radio Frequency Channel Number (UARFCN). The UARFCN values are defined as follows:

Table 5.1: UTRA Absolute Radio Frequency Channel Number

	UARFCN	Carrier frequency [MHz]
Uplink	$N_u = 5 * F_{uplink}$	0.0 MHz ≤ F_{uplink} ≤ 3276.6 MHz where F_{uplink} is the uplink frequency in MHz
Downlink	$N_d = 5 * F_{downlink}$	0.0 MHz ≤ $F_{downlink}$ ≤ 3276.6 MHz where $F_{downlink}$ is the downlink frequency in MHz

Table 5.1A: UARFCN definition (Band II additional channels)

	UARFCN	Carrier frequency [MHz]
Uplink	$N_u = 5 *(F_{uplink} – 1850.1$ MHz)	F_{uplink} = 1852.5, 1857.5, 1862.5, 1867.5, 1872.5, 1877.5, 1882.5, 1887.5, 1892.5, 1897.5, 1902.5, 1907.5
Downlink	$N_u = 5 *(F_{downlink} – 1850.1$ MHz)	$F_{downlink}$ = 1932.5, 1937.5, 1942.5, 1947.5, 1952.5, 1957.5, 1962.5, 1967.5, 1972.5, 1977.5, 1982.5, 1987.5

6 Transmitter characteristics

6.1 General

Unless otherwise stated, the requirements in Section 6 assume that the transmitter is not equipped with diversity. For transmitters with diversity, the requirements apply to each antenna connector separately, with the other one terminated or disabled .The requirements are otherwise unchanged.

Unless otherwise stated, the transmitter characteristics are specified at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a TX amplifier, ~~a diplexer,~~ a filter or the combination of such devices is used, requirements apply at the far end antenna connector (port B).

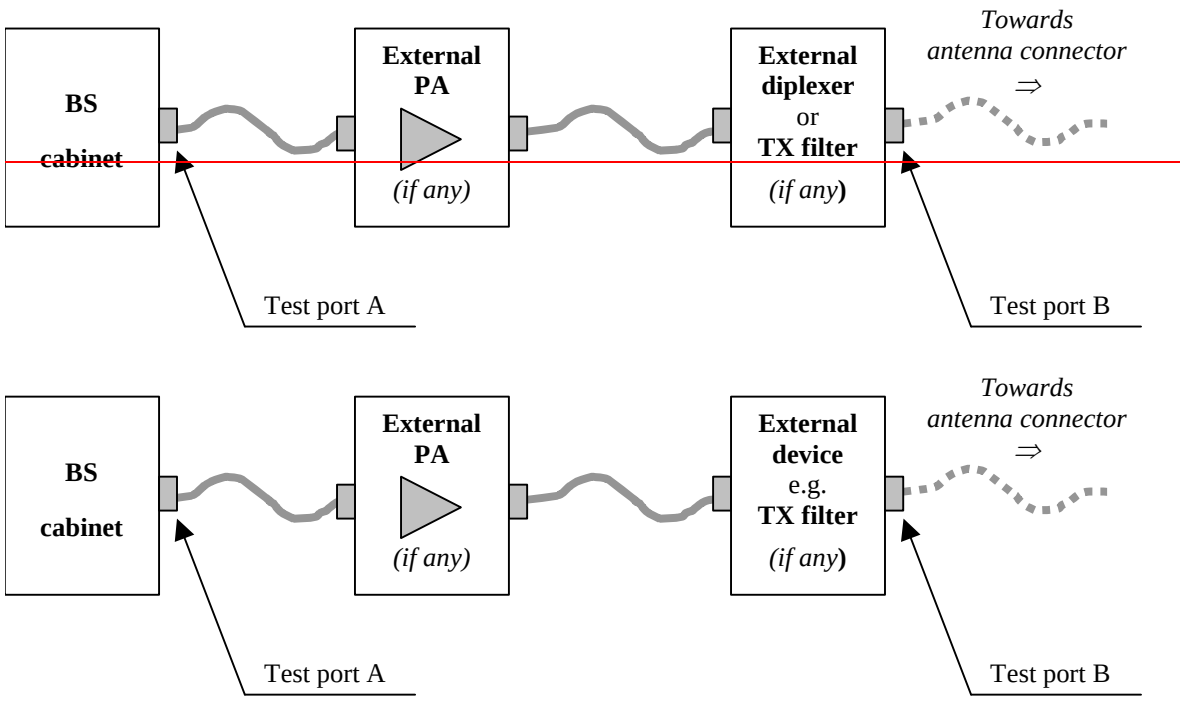

Figure 6.1: Transmitter test ports

--- next changed section ---

The Error Vector Magnitude shall not be worse than 12.5 % when the base station is transmitting a composite signal that includes 16QAM modulation.

6.8.3 Peak code Domain error

The Peak Code Domain Error is computed by projecting the power of the error vector (as defined in 6.8.2) onto the code domain at a specified spreading factor. The Code Domain Error for every code in the domain is defined as the ratio of the mean power of the projection onto that code, to the mean power of the composite reference waveform. This ratio is expressed in dB. The Peak Code Domain Error is defined as the maximum value for the Code Domain Error for all codes. The measurement interval is one timeslot as defined by the C-PICH (when present) otherwise the measurement interval is one timeslot starting with the beginning of the SCH.

6.8.3.1 Minimum requirement

The peak code domain error shall not exceed -33 dB at spreading factor 256.

6.8.4 Time alignment error in Tx Diversity

In Tx Diversity, signals are transmitted from two antennas. These signals shall be aligned. The time alignment error in Tx Diversity is specified as the delay between the signals from the two diversity antennas at the antenna ports.

6.8.4.1 Minimum Requirement

The time alignment error in Tx Diversity shall not exceed ¼ T_c.

7 Receiver characteristics

7.1 General

The requirements in Section 7 assume that the receiver is not equipped with diversity. For receivers with diversity, the requirements apply to each antenna connector separately, with the other one(s) terminated or disabled .The requirements are otherwise unchanged.

Unless otherwise stated, the receiver characteristics are specified at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a RX amplifier, ~~a diplexer,~~ a filter or the combination of such devices is used, requirements apply at the far end antenna connector (port B).

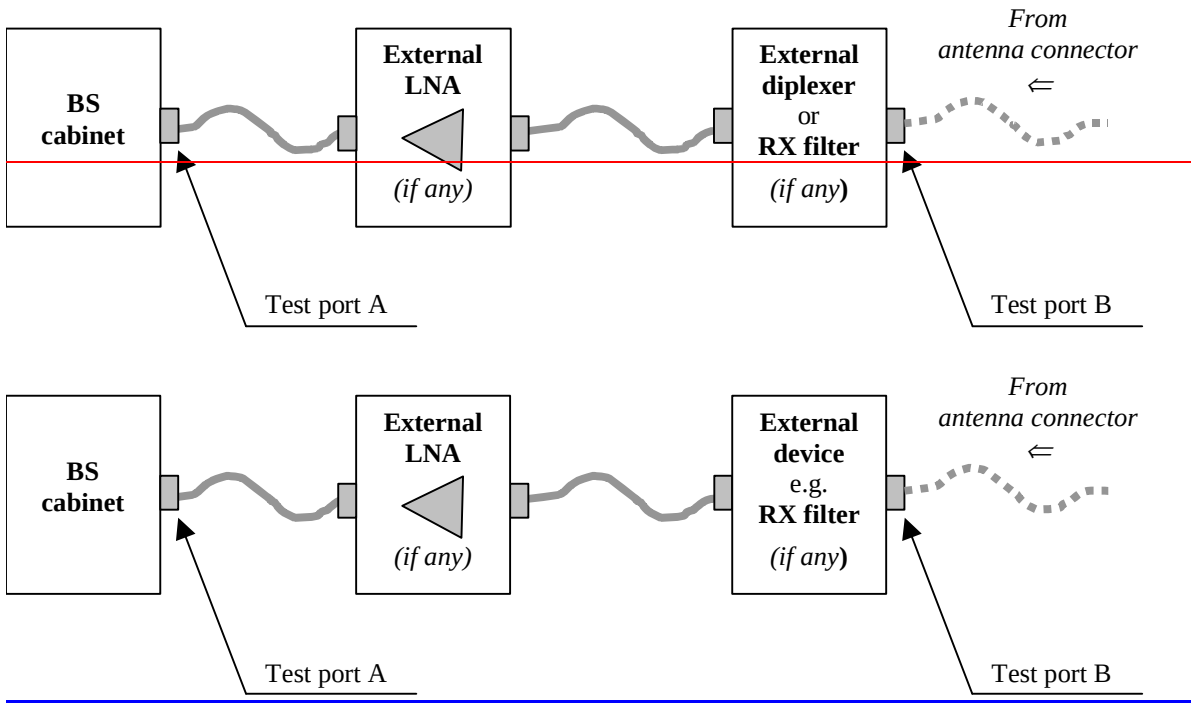

Figure 7.1: Receiver test ports

3GPP TSG RAN WG4 (Radio) Meeting #26 **R4-030143**

Madrid, Spain 17 - 22 February, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.104** **CR** **182** ⌘ **rev** ⌘ Current version: **6.0.0** ⌘

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

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

Title:	⌘	Correction to external equipment definition
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
Date:	⌘	05/03/2003
Category:	⌘	**A**
Release:	⌘	Rel-6

Use one of the following categories:
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R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The definition of external equipment is not harmonised between FDD and TDD specifications 25.104, 25.105, 25.141 and 25.142. The term diplexer is used in FDD specifications but it is not defined in current 3GPP specifications. Therefore it is proposed to align external equipment definition between all related specifications. Sections 6.1 and 7.1 in 25.104 are defining the external equipment and test ports A and B. To align specifications the term diplexer can be removed from FDD specifications. The actual definition " any external apparatus " already covers all posibilities including diplexers. The part in the definition " ... such as a TX amplifier... " can be interpreted as an example of external device and the figure illustrates a sample configuration as well.
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Consequences if not approved:	⌘	Specifications are not harmonised. There exist differences (diplexer) between the "FDD specs" 25.104/25.141 and the "TDD specs" 25.105/25.142. **Isolated impact analysis:** This change does not impact Node-B implementation or Node-B – UE interworking as it harmonise the external equipment definition.

Clauses affected:	⌘	6.1; 7.1

		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
		X		Test specifications		25.141
			X	O&M Specifications		
Other comments:	⌘	The CR is linked to - 25.105 CRs 148 for Rel4, 149 for Rel5 - 25.142 CRs 163 for Rel4, 164 for Rel5 - 25.141 CRs 286 for Rel4, 287 for Rel5, 288 for Rel6 - Equivalent CRs in other Releases: CR180 cat. F to 25.104 v4.6.0, CR181 cat. A to 25.104 v5.5.0				

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5.4.3 Channel number

The carrier frequency is designated by the UTRA Absolute Radio Frequency Channel Number (UARFCN). The UARFCN values are defined as follows:

Table 5.1: UTRA Absolute Radio Frequency Channel Number

	UARFCN	Carrier frequency [MHz]
Uplink	$N_u = 5 * F_{uplink}$	0.0 MHz ≤ F_{uplink} ≤ 3276.6 MHz where F_{uplink} is the uplink frequency in MHz
Downlink	$N_d = 5 * F_{downlink}$	0.0 MHz ≤ $F_{downlink}$ ≤ 3276.6 MHz where $F_{downlink}$ is the downlink frequency in MHz

Table 5.1A: UARFCN definition (Band II additional channels)

	UARFCN	Carrier frequency [MHz]
Uplink	$N_u = 5 *(F_{uplink} – 1850.1$ MHz)	F_{uplink} = 1852.5, 1857.5, 1862.5, 1867.5, 1872.5, 1877.5, 1882.5, 1887.5, 1892.5, 1897.5, 1902.5, 1907.5
Downlink	$N_u = 5 *(F_{downlink} – 1850.1$ MHz)	$F_{downlink}$ = 1932.5, 1937.5, 1942.5, 1947.5, 1952.5, 1957.5, 1962.5, 1967.5, 1972.5, 1977.5, 1982.5, 1987.5

6 Transmitter characteristics

6.1 General

Unless otherwise stated, the requirements in Section 6 assume that the transmitter is not equipped with diversity. For transmitters with diversity, the requirements apply to each antenna connector separately, with the other one terminated or disabled .The requirements are otherwise unchanged.

Unless otherwise stated, the transmitter characteristics are specified at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a TX amplifier, ~~a diplexer,~~ a filter or the combination of such devices is used, requirements apply at the far end antenna connector (port B).

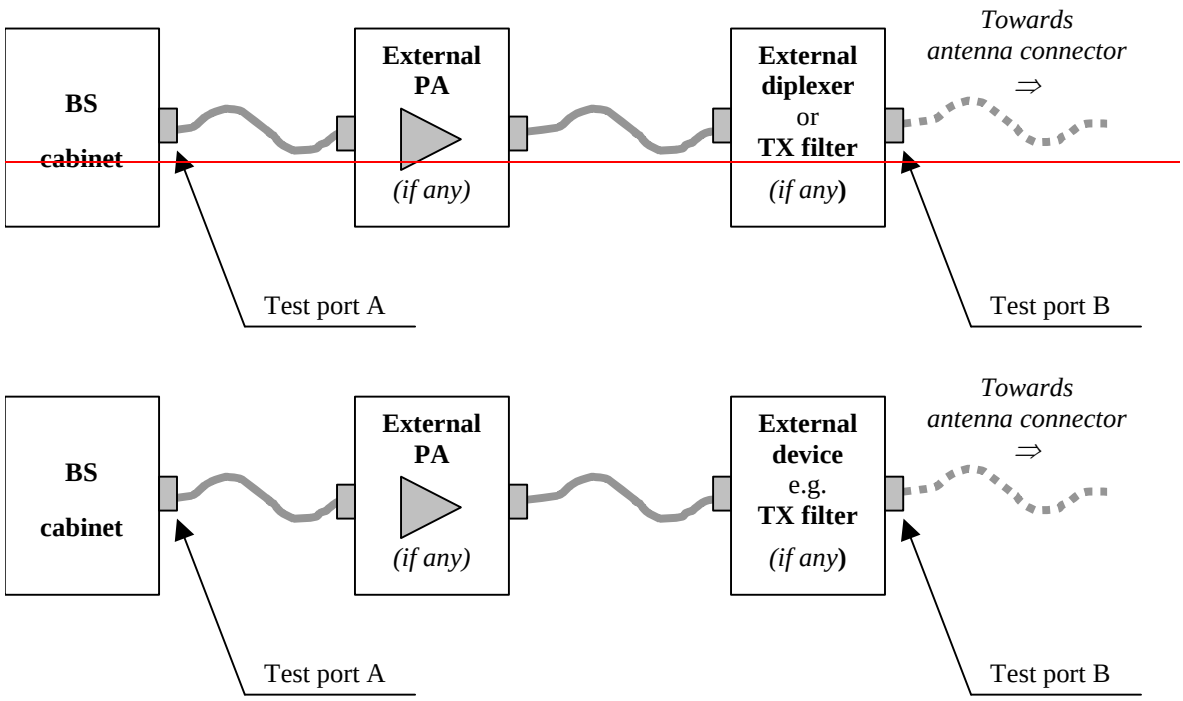

Figure 6.1: Transmitter test ports

--- next changed section ---

The Error Vector Magnitude shall not be worse than 12.5 % when the base station is transmitting a composite signal that includes 16QAM modulation.

6.8.3 Peak code Domain error

The Peak Code Domain Error is computed by projecting the power of the error vector (as defined in 6.8.2) onto the code domain at a specified spreading factor. The Code Domain Error for every code in the domain is defined as the ratio of the mean power of the projection onto that code, to the mean power of the composite reference waveform. This ratio is expressed in dB. The Peak Code Domain Error is defined as the maximum value for the Code Domain Error for all codes. The measurement interval is one timeslot as defined by the C-PICH (when present) otherwise the measurement interval is one timeslot starting with the beginning of the SCH.

6.8.3.1 Minimum requirement

The peak code domain error shall not exceed -33 dB at spreading factor 256.

6.8.4 Time alignment error in Tx Diversity

In Tx Diversity, signals are transmitted from two antennas. These signals shall be aligned. The time alignment error in Tx Diversity is specified as the delay between the signals from the two diversity antennas at the antenna ports.

6.8.4.1 Minimum Requirement

The time alignment error in Tx Diversity shall not exceed ¼ T_c.

7 Receiver characteristics

7.1 General

The requirements in Section 7 assume that the receiver is not equipped with diversity. For receivers with diversity, the requirements apply to each antenna connector separately, with the other one(s) terminated or disabled .The requirements are otherwise unchanged.

Unless otherwise stated, the receiver characteristics are specified at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a RX amplifier, ~~a diplexer,~~ a filter or the combination of such devices is used, requirements apply at the far end antenna connector (port B).

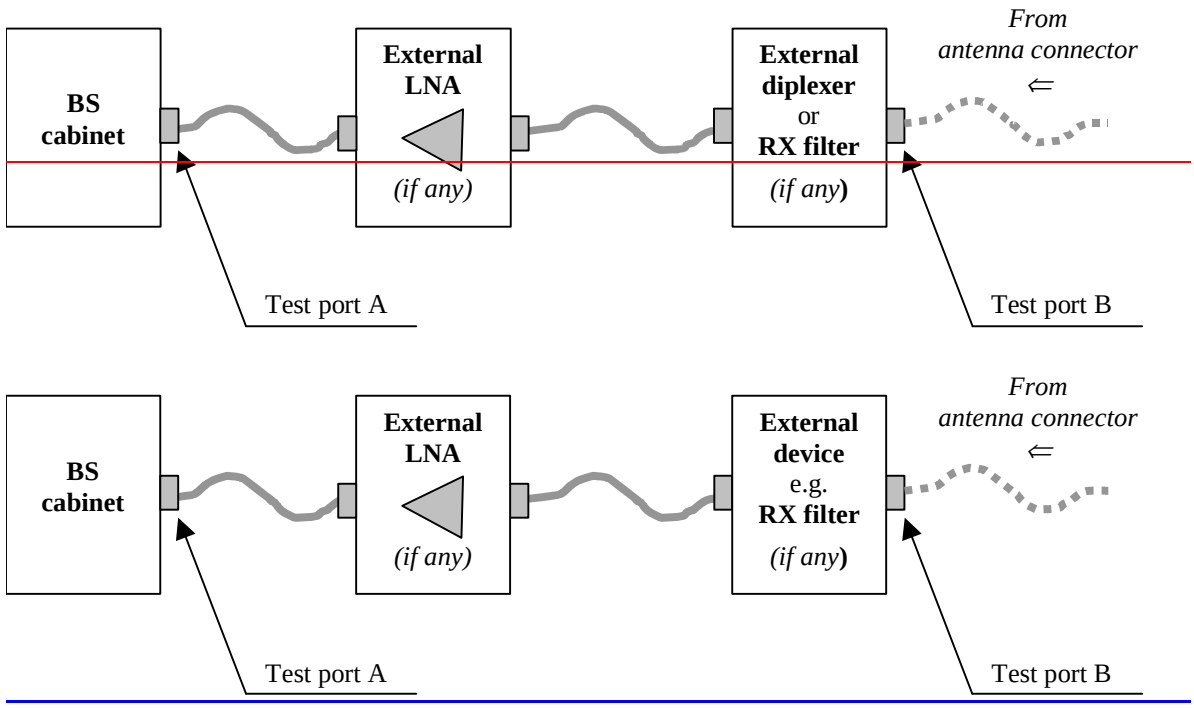

Figure 7.1: Receiver test ports

3GPP TSG RAN WG4 (Radio) Meeting #26 **R4-030148**

Madrid, Spain 17 - 22 February, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.105** **CR** **148** ⌘ **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:	⌘	Correction to external equipment definition
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
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)*
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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:	⌘	Sections 6.1 and 7.1 in 25.105 are defining the external equipment and test ports A and B. The actual definition " any external apparatus " already covers all possible external devices but the figures limit external devices to external amplifiers and filters only. This leads to an ambiguous definition of test ports.
Summary of change:	⌘	The definition of external equipment is specified generic in order to include all types of external equipment as “external device” in figures 6.0 and 7.1.
Consequences if not approved:	⌘	Requirements may be tested at the incorrect port leading to inconsistent test results. **Isolated impact analysis:** This change does not impact Node-B implementation or Node-B – UE interworking as it specifies the external equipment definition.

Clauses affected:	⌘	6.1; 7.1

Other specs affected: ⌘	Y	N		⌘
		X	Other core specifications	CR 163 to 25.142
	X		Test specifications	
		X	O&M Specifications	

Other comments:	⌘	The CR is linked to CR 180 to 25.104 and CR 286 to 25.141. Equivalent CRs in other Releases: CR149 cat. A to 25.105 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.

6 Transmitter characteristics

6.1 General

Unless otherwise stated the transmitter characteristics are specified at the antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a TX amplifier, a filter or the combination of such devices is used, requirements apply at the far end antenna connector. (port B).

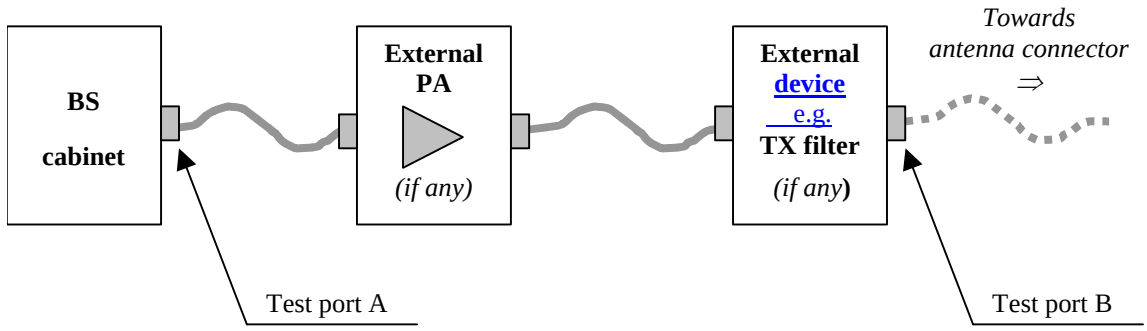

Figure 6.0: Transmitter test ports

--- next changed section ---

7 Receiver characteristics

7.1 General

The requirements in this clause 7 assume that the receiver is not equipped with diversity. For receivers with diversity, the requirements apply to each antenna connector separately, with the other one(s) terminated or disabled .The requirements are otherwise unchanged.

Unless otherwise stated, the receiver characteristics are specified at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a RX amplifier, a filter or the combination of such devices is used, requirements apply at the far end antenna connector (port B).

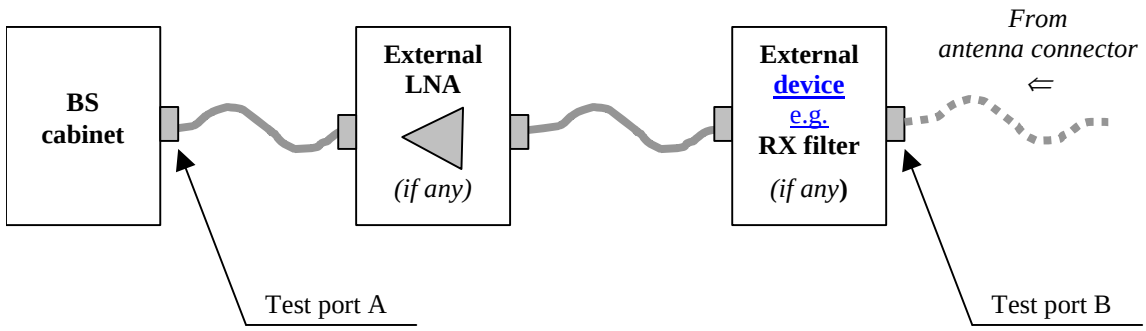

Figure 7.1: Receiver test ports

3GPP TSG RAN WG4 (Radio) Meeting #26 **R4-030149**

Madrid, Spain 17 - 22 February, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.105** **CR** **149** ⌘ **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:	⌘	Correction to external equipment definition
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
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:	⌘	Sections 6.1 and 7.1 in 25.105 are defining the external equipment and test ports A and B. The actual definition " any external apparatus " already covers all possible external devices but the figures limit external devices to external amplifiers and filters only. This leads to an ambiguous definition of test ports.
Summary of change:	⌘	The definition of external equipment is specified generic in order to include all types of external equipment as “external device” in figures 6.0 and 7.1.
Consequences if not approved:	⌘	Specifications are not harmonised. Requirements may be tested at the incorrect port leading to inconsistent test results. **Isolated impact analysis:** This change does not impact Node-B implementation or Node-B – UE interworking as it specifies the external equipment definition.

Clauses affected:	⌘	6.1; 7.1

Other specs affected:	⌘	Y	N		⌘	
			X	Other core specifications		CR 164 to 25.142
		X		Test specifications		
			X	O&M Specifications		

Other comments:	⌘	The CR is linked to CR 181 to 25.104 and CR 287 to 25.141. Equivalent CRs in other Releases: CR148 cat. F to 25.105 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.

6 Transmitter characteristics

6.1 General

Unless otherwise stated the transmitter characteristics are specified at the antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a TX amplifier, a filter or the combination of such devices is used, requirements apply at the far end antenna connector (port B).

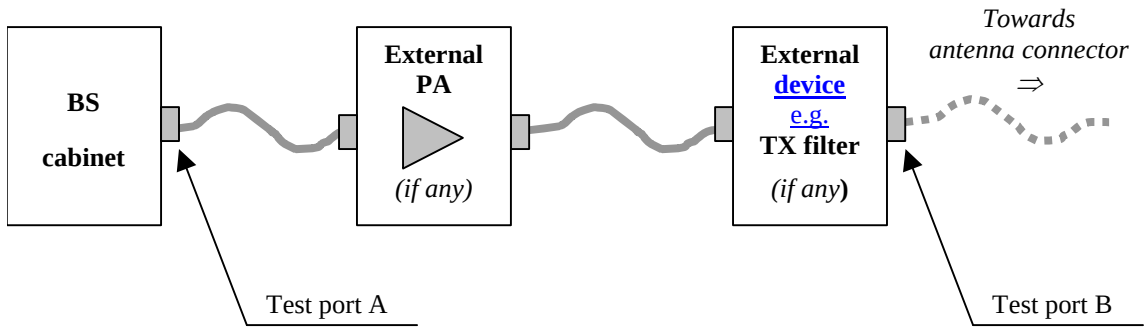

Figure 6.0: Transmitter test ports

--- next changed section ---

7 Receiver characteristics

7.1 General

The requirements in this clause 7 assume that the receiver is not equipped with diversity. For receivers with diversity, the requirements apply to each antenna connector separately, with the other one(s) terminated or disabled .The requirements are otherwise unchanged.

Unless otherwise stated, the receiver characteristics are specified at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a RX amplifier, a filter or the combination of such devices is used, requirements apply at the far end antenna connector (port B).

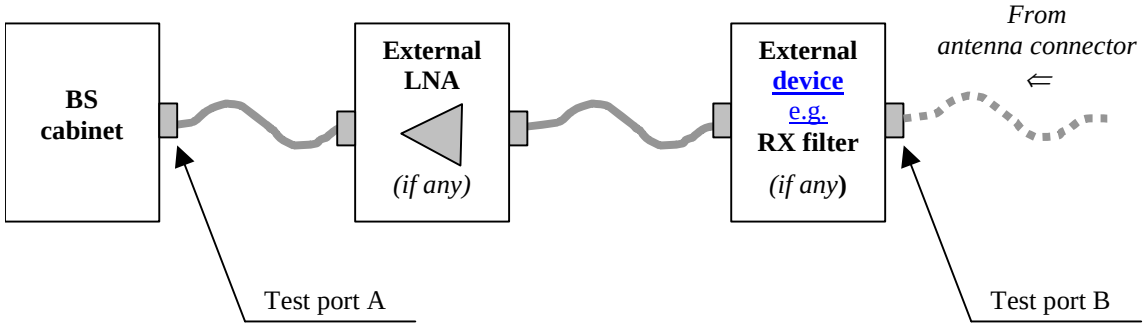

Figure 7.1: Receiver test ports

3GPP TSG RAN WG4 (Radio) Meeting #26 **R4-030144**

Madrid, Spain 17 - 22 February, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.141** **CR** **286** ⌘ **rev** ⌘ Current version: **4.7.0** ⌘

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

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

Title:	⌘	Correction to external equipment definition
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
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:	⌘	The definition of external equipment is not harmonised between FDD and TDD specifications 25.104, 25.105, 25.141 and 25.142. The term diplexer is used in FDD specifications but it is not defined in current 3GPP specifications. Therefore it is proposed to align external equipment definition between all related specifications. Sections 6.1 and 7.1 in 25.141 are defining the external equipment and test ports A and B. To align specifications the term diplexer can be removed from FDD specifications. The actual definition " any external apparatus " already covers all posibilities including diplexers. The part in the definition " ... such as a TX amplifier... " can be interpreted as an example of external device and the figure illustrates a sample configuration as well.
Summary of change:	⌘	The definition of external equipment is specified generic in order to include all types of external equipment. - term diplexer is removed from the text - in figures 6.1 and 7.1 the term “external diplexer” is replaced by “external device”
Consequences if not approved:	⌘	Specifications are not harmonised. There exist differences (diplexer) between the "FDD specs" 25.104/25.141 and the "TDD specs" 25.105/25.142. **Isolated impact analysis:** This change does not impact Node-B implementation or Node-B – UE interworking as it harmonise the external equipment definition.

Clauses affected:	⌘	6.1; 7.1

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	25.104
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	The CR is linked to - 25.105 CRs 148 for Rel4, 149 for Rel5 - 25.142 CRs 163 for Rel4, 164 for Rel5 - 25.104 CRs 180 for Rel4, 181 for Rel5, 182 for Rel6 - Equivalent CRs in other Releases: CR287 cat. A to 25.141 v5.5.0, CR288 cat. A to 25.141 v6.0.0				

How to create CRs using this form:

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

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

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

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

This subclause describes the steps necessary to perform the test and provides further details of the test definition like point of access (e.g. antenna port), domain (e.g. frequency-span), range, weighting (e.g. bandwidth), and algorithms (e.g. averaging).

X.5 Test Requirement

This subclause defines the pass/fail criteria for the equipment under test. See subclause 4.3 Interpretation of measurement results.

6 Transmitter

6.1 General

Unless otherwise stated, all tests in this clause shall be performed at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a TX amplifier, ~~a diplexer,~~ a filter or the combination of such devices is used, the tests according to subclauses 4.6.2 and/or 4.6.4, depending on the device added, shall be performed to ensure that the requirements are met at test port B.

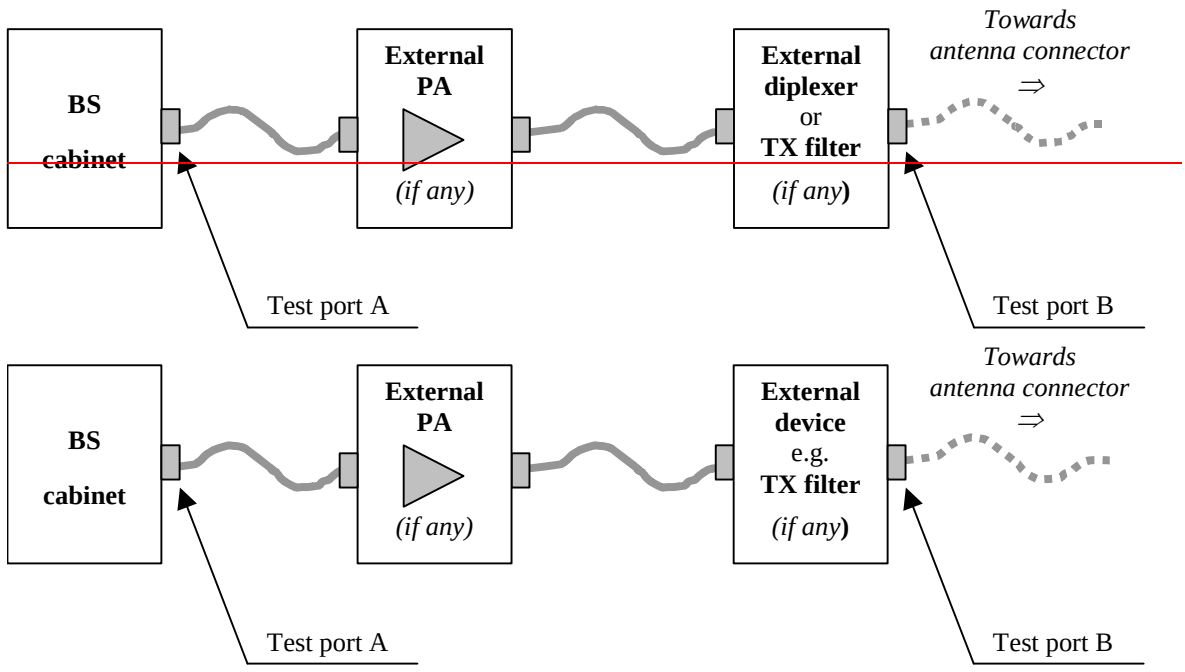

Figure 6.1: Transmitter test ports

Power levels are expressed in dBm.

--- next changed section ---

measurement interval is one timeslot as defined by the C-PICH (when present), otherwise the measurement interval is one timeslot starting with the beginning of the SCH. See Annex E of this specification for further details.

6.7.2.2 Minimum requirement

The peak code domain error shall not exceed -33 dB at spreading factor 256.

The normative reference for this requirement is in TS 25.104[1] subclause 6.8.3.

6.7.2.3 Test Purpose

It is the purpose of this test to discover and limit inter-code cross-talk.

6.7.2.4 Method of test

6.7.2.4.1 Initial conditions

Test environment: normal; see subclause 4.4.1.

RF channels to be tested: B, M and T; see subclause 4.8

1) Connect the measurement equipment to the BS antenna connector as shown in Figure B.2 annex B.
2) Channel configuration defined in subclause 6.1.1.3 Test model 3 shall be used.
3) Set BS frequency.
4) Start BS transmission at maximum output power.

6.7.2.4.2 Procedure

1) Measure Peak code domain error according to annex E.

6.7.2.5 Test requirement

The peak code domain error shall not exceed -32 dB at spreading factor 256.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in subclause 4.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in Annex F.

7 Receiver characteristics

7.1 General

Unless otherwise stated, all tests in this clause shall be performed at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a RX amplifier, ~~a diplexer,~~ a filter or the combination of such devices is used, the tests according to subclauses 4.6.2 and/or 4.6.4, depending on the device added, shall be performed to ensure that the requirements are met at test port B.

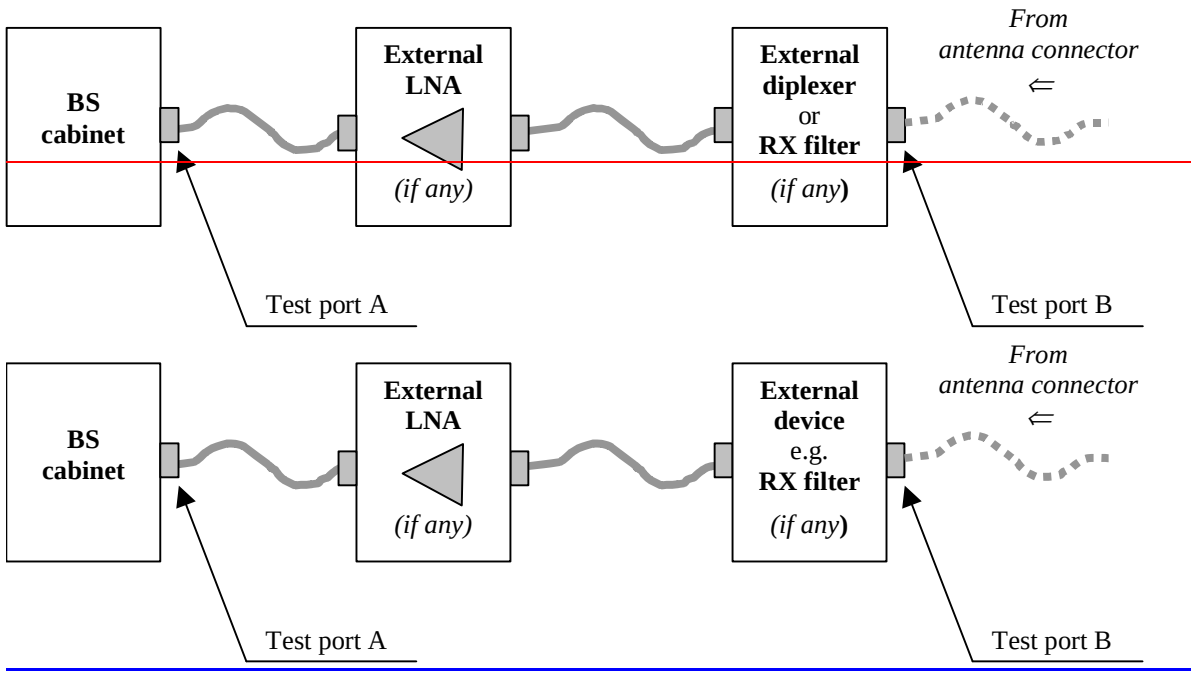

Figure 7.1: Receiver test ports

3GPP TSG RAN WG4 (Radio) Meeting #26 **R4-030145**

Madrid, Spain 17 - 22 February, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.141** **CR** **287** ⌘ **rev** ⌘ Current version: **5.5.0** ⌘

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

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

Title:	⌘	Correction to external equipment definition
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
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:	⌘	The definition of external equipment is not harmonised between FDD and TDD specifications 25.104, 25.105, 25.141 and 25.142. The term diplexer is used in FDD specifications but it is not defined in current 3GPP specifications. Therefore it is proposed to align external equipment definition between all related specifications. Sections 6.1 and 7.1 in 25.141 are defining the external equipment and test ports A and B. To align specifications the term diplexer can be removed from FDD specifications. The actual definition " any external apparatus " already covers all posibilities including diplexers. The part in the definition " ... such as a TX amplifier... " can be interpreted as an example of external device and the figure illustrates a sample configuration as well.
Summary of change:	⌘	The definition of external equipment is specified generic in order to include all types of external equipment. - term diplexer is removed from the text - in figures 6.1 and 7.1 the term “external diplexer” is replaced by “external device”
Consequences if not approved:	⌘	Specifications are not harmonised. There exist differences (diplexer) between the "FDD specs" 25.104/25.141 and the "TDD specs" 25.105/25.142. **Isolated impact analysis:** This change does not impact Node-B implementation or Node-B – UE interworking as it harmonise the external equipment definition.
Clauses affected:	⌘	6.1; 7.1

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	25.104
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	The CR is linked to - 25.105 CRs 148 for Rel4, 149 for Rel5 - 25.142 CRs 163 for Rel4, 164 for Rel5 - 25.104 CRs 180 for Rel4, 181 for Rel5, 182 for Rel6 - Equivalent CRs in other Releases: CR286 cat. F to 25.141 v4.7.0, CR288 cat. A to 25.141 v6.0.0				

How to create CRs using this form:

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

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

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

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

5 Format and interpretation of tests

Each test in the following clauses has a standard format:

X Title

All tests are applicable to all equipment within the scope of the present document, unless otherwise stated.

X.1 Definition and applicability

This subclause gives the general definition of the parameter under consideration and specifies whether the test is applicable to all equipment or only to a certain subset.

X.2 Minimum Requirement

This subclause is an informative copy of the Minimum Requirement defined by the core specification.

In addition, this subclause contains the reference to the subclause to the 3GPP reference (or core) specification which defines the Minimum Requirement.

X.3 Test purpose

This subclause defines the purpose of the test.

X.4 Method of test

X.4.1 Initial conditions

This subclause defines the initial conditions for each test, including the test environment, the RF channels to be tested and the basic measurement set-up.

X.4.2 Procedure

This subclause describes the steps necessary to perform the test and provides further details of the test definition like point of access (e.g. antenna port), domain (e.g. frequency-span), range, weighting (e.g. bandwidth), and algorithms (e.g. averaging).

X.5 Test Requirement

This subclause defines the pass/fail criteria for the equipment under test. See subclause 4.3 Interpretation of measurement results.

6 Transmitter

6.1 General

Unless otherwise stated, all tests in this clause shall be performed at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a TX amplifier, ~~a diplexer,~~ a filter or the combination of such devices is used, the tests according to subclauses 4.6.2 and/or 4.6.4, depending on the device added, shall be performed to ensure that the requirements are met at test port B.

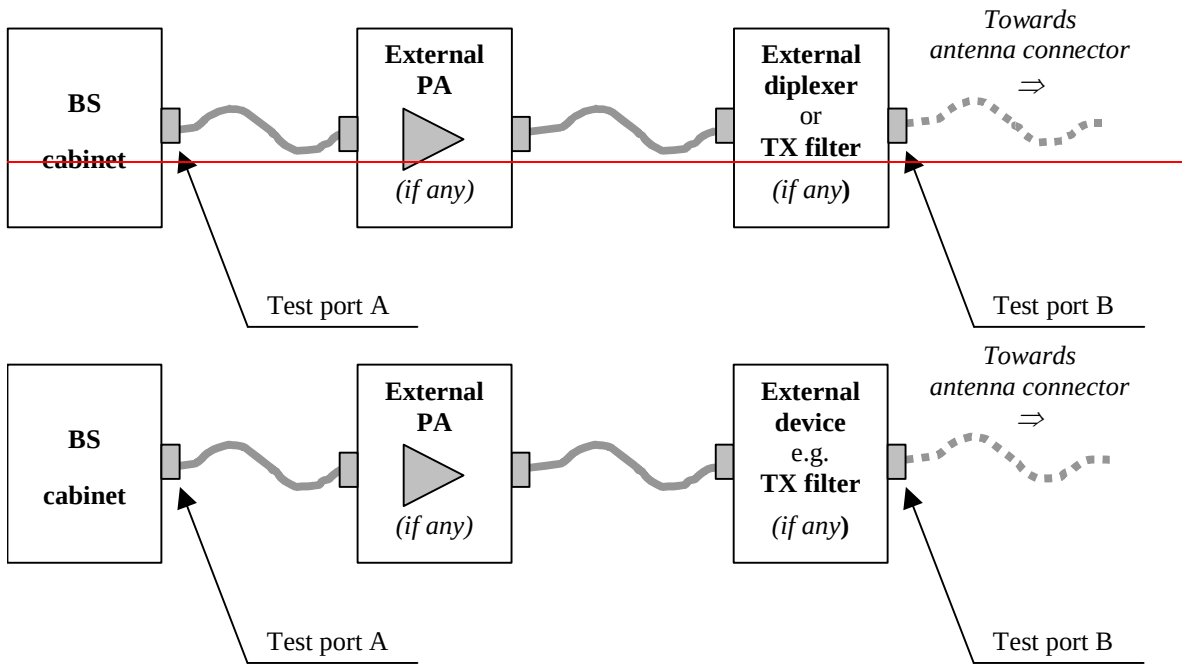

Figure 6.1: Transmitter test ports

Power levels are expressed in dBm.

--- next changed section ---

RF channels to be tested: B, M and T; see subclause 4.8

1) Connect the measurement equipment to the BS antenna connector as shown in Figure B.2 annex B.
2) Channel configuration defined in subclause 6.1.1.3 Test model 3 shall be used.
3) Set BS frequency.
4) Start BS transmission at maximum output power.

6.7.2.4.2 Procedure

1) Measure Peak code domain error according to annex E.

6.7.2.5 Test requirement

The peak code domain error shall not exceed -32 dB at spreading factor 256.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in subclause 4.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in Annex F.

7 Receiver characteristics

7.1 General

Unless otherwise stated, all tests in this clause shall be performed at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a RX amplifier, ~~a diplexer,~~ a filter or the combination of such devices is used, the tests according to subclauses 4.6.2 and/or 4.6.4, depending on the device added, shall be performed to ensure that the requirements are met at test port B.

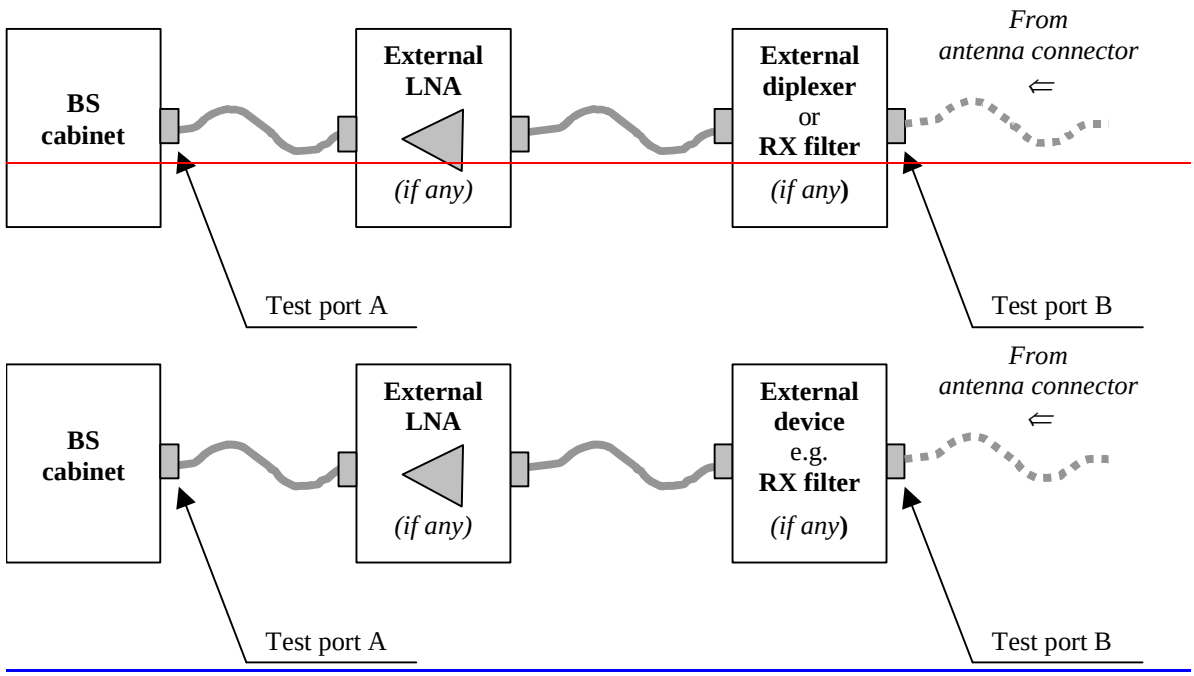

Figure 7.1: Receiver test ports

3GPP TSG RAN WG4 (Radio) Meeting #26 **R4-030146**

Madrid, Spain 17 - 22 February, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.141** **CR** **288** ⌘ **rev** ⌘ Current version: **6.0.0** ⌘

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

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

Title:	⌘	Correction to external equipment definition
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
Date:	⌘	05/03/2003
Category:	⌘	**A**
Release:	⌘	Rel-6

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

Use one of the following releases:

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

Reason for change:	⌘	The definition of external equipment is not harmonised between FDD and TDD specifications 25.104, 25.105, 25.141 and 25.142. The term diplexer is used in FDD specifications but it is not defined in current 3GPP specifications. Therefore it is proposed to align external equipment definition between all related specifications. Sections 6.1 and 7.1 in 25.141 are defining the external equipment and test ports A and B. To align specifications the term diplexer can be removed from FDD specifications. The actual definition " any external apparatus " already covers all posibilities including diplexers. The part in the definition " ... such as a TX amplifier... " can be interpreted as an example of external device and the figure illustrates a sample configuration as well.
Summary of change:	⌘	The definition of external equipment is specified generic in order to include all types of external equipment. - term diplexer is removed from the text - in figures 6.1 and 7.1 the term “external diplexer” is replaced by “external device”
Consequences if not approved:	⌘	Specifications are not harmonised. There exist differences (diplexer) between the "FDD specs" 25.104/25.141 and the "TDD specs" 25.105/25.142. **Isolated impact analysis:** This change does not impact Node-B implementation or Node-B – UE interworking as it harmonise the external equipment definition.
Clauses affected:	⌘	6.1; 7.1

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	25.104
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	The CR is linked to - 25.105 CRs 148 for Rel4, 149 for Rel5 - 25.142 CRs 163 for Rel4, 164 for Rel5 - 25.104 CRs 180 for Rel4, 181 for Rel5, 182 for Rel6 - Equivalent CRs in other Releases: CR286 cat. F to 25.141 v4.7.0, CR287 cat. A to 25.141 v5.5.0

How to create CRs using this form:

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

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

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

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

When a test is performed by a test laboratory, the UARFCNs to be used for RF channels B, M and T shall be specified by the laboratory. The laboratory may consult with operators, the manufacturer or other bodies.

When a test is performed by a manufacturer, the UARFCNs to be used for RF channels B, M and T may be specified by an operator.

5 Format and interpretation of tests

Each test in the following clauses has a standard format:

X Title

All tests are applicable to all equipment within the scope of the present document, unless otherwise stated.

X.1 Definition and applicability

This subclause gives the general definition of the parameter under consideration and specifies whether the test is applicable to all equipment or only to a certain subset.

X.2 Minimum Requirement

This subclause is an informative copy of the Minimum Requirement defined by the core specification.

In addition, this subclause contains the reference to the subclause to the 3GPP reference (or core) specification which defines the Minimum Requirement.

X.3 Test purpose

This subclause defines the purpose of the test.

X.4 Method of test

X.4.1 Initial conditions

This subclause defines the initial conditions for each test, including the test environment, the RF channels to be tested and the basic measurement set-up.

X.4.2 Procedure

This subclause describes the steps necessary to perform the test and provides further details of the test definition like point of access (e.g. antenna port), domain (e.g. frequency-span), range, weighting (e.g. bandwidth), and algorithms (e.g. averaging).

X.5 Test Requirement

This subclause defines the pass/fail criteria for the equipment under test. See subclause 4.3 Interpretation of measurement results.

6 Transmitter

6.1 General

Unless otherwise stated, all tests in this clause shall be performed at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a TX amplifier, ~~a diplexer,~~ a filter or the combination of such devices is used, the tests according to subclauses 4.6.2 and/or 4.6.4, depending on the device added, shall be performed to ensure that the requirements are met at test port B.

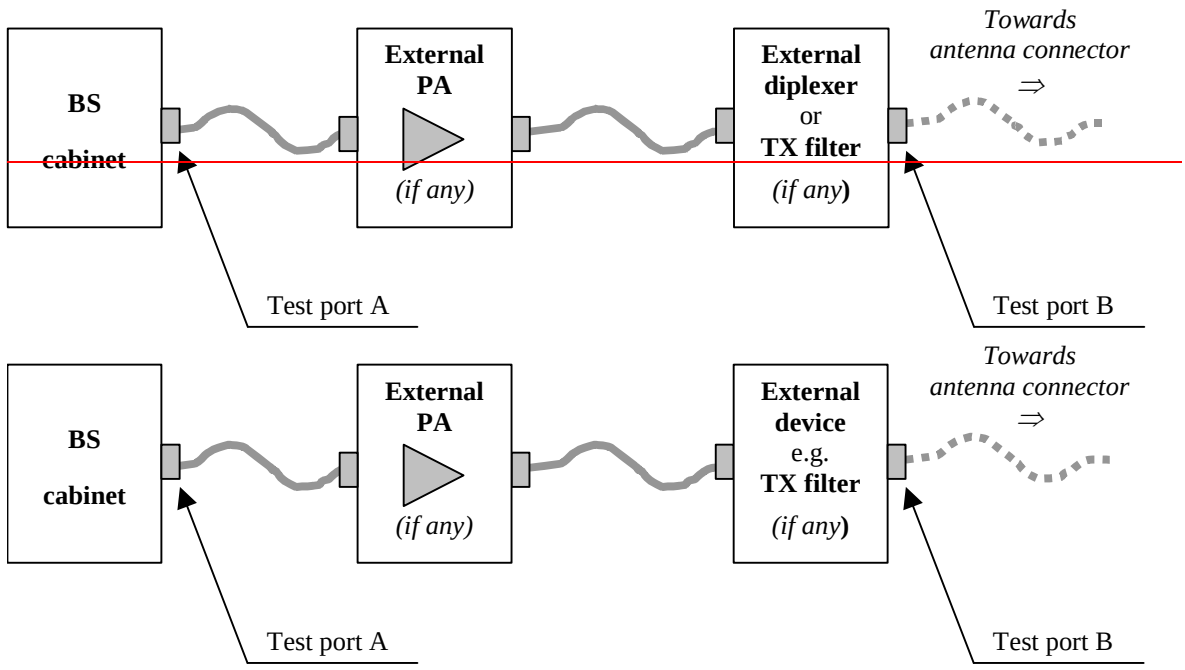

Figure 6.1: Transmitter test ports

Power levels are expressed in dBm.

--- next changed section ---

1) Connect both base station RF antenna ports to the measurement equipment according to figure B.6.

2) Set the base station to transmit Test Model 1 according to subclause 6.1.1.1 using TX diversity.

3) Set BS frequency.

6.7.3.4.2 Procedure

1) Start BS transmission at Pmax.

2) Measure the time alignment error between the CPICH on the main antenna port and the CPICH on the diversity antenna port.

6.7.3.5 Test Requirement

The time alignment error shall be less than 0.35 T_c.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in subclause 4.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in Annex F.

7 Receiver characteristics

7.1 General

Unless otherwise stated, all tests in this clause shall be performed at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a RX amplifier, ~~a diplexer,~~ a filter or the combination of such devices is used, the tests according to subclauses 4.6.2 and/or 4.6.4, depending on the device added, shall be performed to ensure that the requirements are met at test port B.

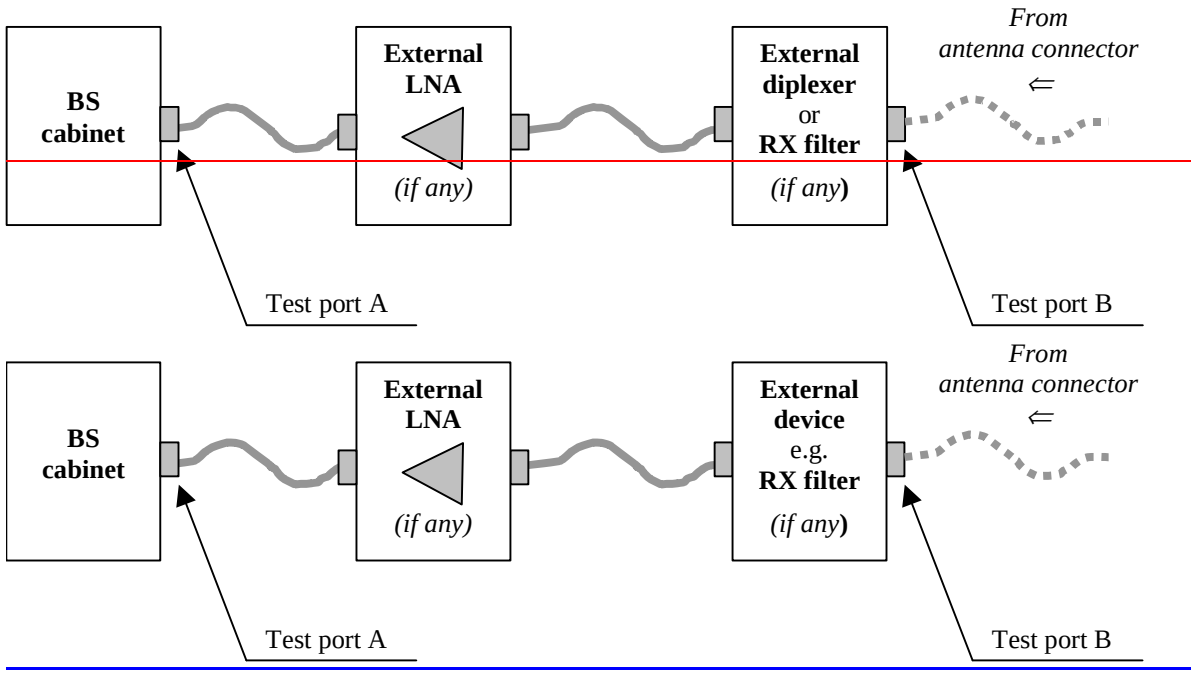

Figure 7.1: Receiver test ports

3GPP TSG RAN WG4 (Radio) Meeting #26 **R4-030150**

Madrid, Spain 17 - 22 February, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.142** **CR** **163** ⌘ **rev** ⌘ Current version: **4.7.0** ⌘

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

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

Title:	⌘	Correction to external equipment definition
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
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:	⌘	Sections 6.1 and 7.1 in 25.142 are defining the external equipment and test ports A and B. The actual definition " any external apparatus " already covers all possible external devices but the figures limit external devices to external amplifiers and filters only. This leads to an ambiguous definition of test ports.
Summary of change:	⌘	The definition of external equipment is specified generic in order to include all types of external equipment as “external device” in figures 6.0 and 7.1.
Consequences if not approved:	⌘	Specifications are not harmonised. Requirements may be tested at the incorrect port leading to inconsistent test results. **Isolated impact analysis:** This change does not impact Node-B implementation or Node-B – UE interworking as it specifies the external equipment definition.

Clauses affected:	⌘	6.1; 7.1
Other specs affected:	⌘	Y N ☐ ☒ Other core specifications ☐ ☒ Test specifications ☐ ☒ O&M Specifications
Other comments:	⌘	The CR is linked to CR 180 to 25.104, CR 148 to 25.105 and CR 286 to 25.141. Equivalent CRs in other Releases: CR164 cat. A to 25.142 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.

6 Transmitter characteristics

6.1 General

Unless otherwise stated, all measurements shall be made at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a TX amplifier, a filter or the combination of such devices is used, the tests according to subclauses 5.14.4 shall be performed to ensure that the requirements are met at test port B.

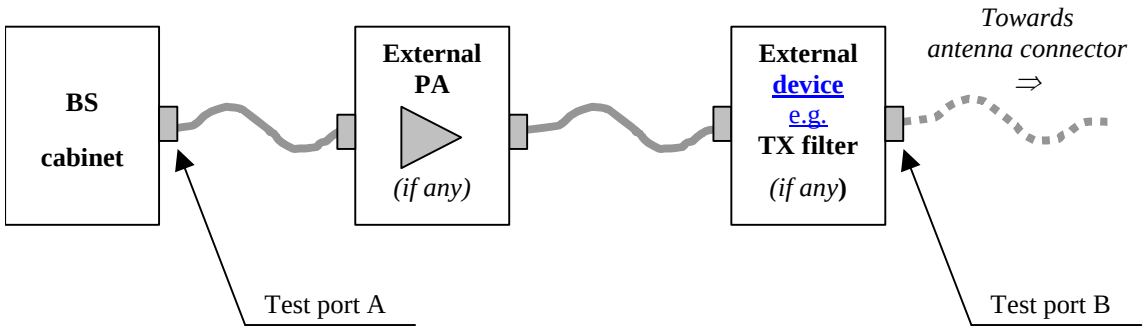

Figure 6.0: Transmitter test ports

--- next changed section ---

7 Receiver characteristics

7.1 General

All tests unless otherwise stated in this subclause shall be conducted on Base Station Systems fitted with a full complement of Transceivers for the configuration. The manufacturer shall provide appropriate logical or physical test access to perform all tests in this subclause. Measurements shall include any RX multicoupler.

The tests in clause 7 assume that the receiver is not equipped with diversity. Unless otherwise stated, the tests for receiver with diversity shall be performed by applying the specified signals to one of the receiver inputs, and terminating or disabling the other(s). The tests and requirements are otherwise unchanged.

In all the relevant subclauses in this clause all Bit Error Ratio (BER), Residual BER (RBER) and Frame Erasure Ratio (FER) measurements shall be carried out according to the general rules for statistical testing.

Unless detailed the receiver characteristic are specified at each antenna connector of the BS.

Unless otherwise stated, all tests in this clause shall be performed at the BS antenna connector (test port A).If any external apparatus such as a RX amplifier, a filter or the combination of such devices is used, the tests according to subclause 5.14.4 shall be performed to ensure that the requirements are met at test port B.

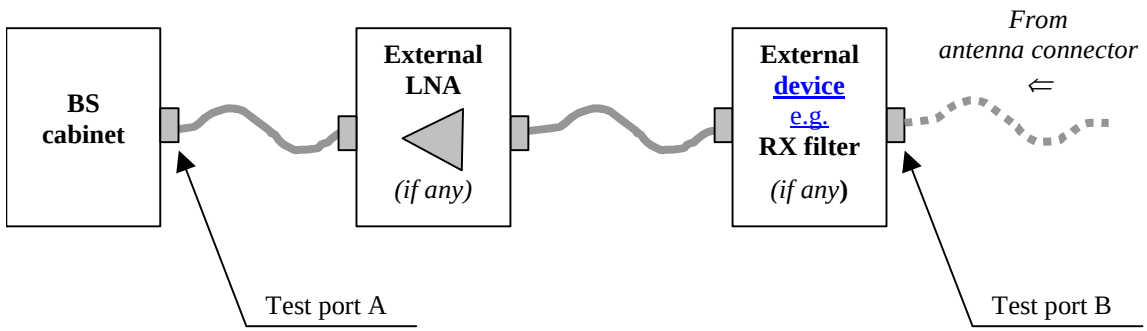

Figure 7.1: Receiver test ports

3GPP TSG RAN WG4 (Radio) Meeting #26 **R4-030151**

Madrid, Spain 17 - 22 February, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.142** **CR** **164** ⌘ **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:	⌘	Correction to external equipment definition
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
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)*
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Reason for change:	⌘	Sections 6.1 and 7.1 in 25.142 are defining the external equipment and test ports A and B. The actual definition " any external apparatus " already covers all possible external devices but the figures limit external devices to external amplifiers and filters only. This leads to an ambiguous definition of test ports.
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Consequences if not approved:	⌘	Specifications are not harmonised. Requirements may be tested at the incorrect port leading to inconsistent test results. **Isolated impact analysis:** This change does not impact Node-B implementation or Node-B – UE interworking as it specifies the external equipment definition.

Clauses affected:	⌘	6.1; 7.1

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

Other comments:	⌘	The CR is linked to CR 181 to 25.104, CR 149 to 25.105 and CR 287 to 25.141. Equivalent CRs in other Releases: CR163 cat. F to 25.142 v4.7.0

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6 Transmitter characteristics

6.1 General

Unless otherwise stated, all measurements shall be made at the BS antenna connector (test port A) with a full complement of transceivers for the configuration in normal operating conditions. If any external apparatus such as a TX amplifier, a filter or the combination of such devices is used, the tests according to subclauses 5.14.4 shall be performed to ensure that the requirements are met at test port B.

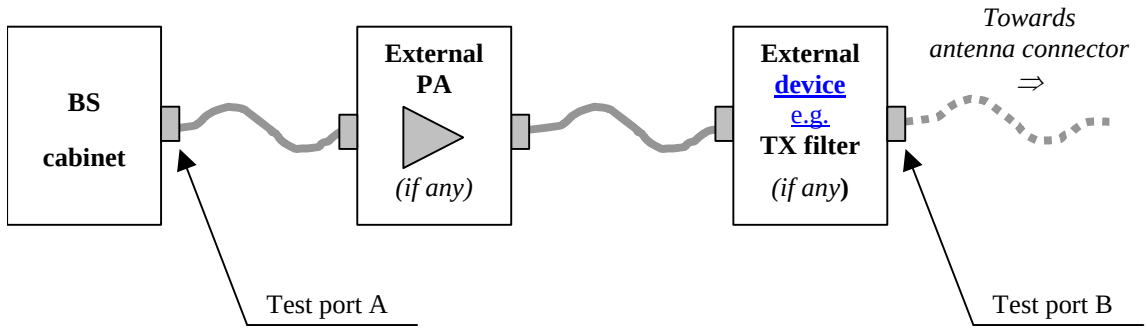

Figure 6.1: Transmitter test ports

--- next changed section ---

7 Receiver characteristics

7.1 General

All tests unless otherwise stated in this subclause shall be conducted on Base Station Systems fitted with a full complement of Transceivers for the configuration. The manufacturer shall provide appropriate logical or physical test access to perform all tests in this subclause. Measurements shall include any RX multicoupler.

The tests in clause 7 assume that the receiver is not equipped with diversity. Unless otherwise stated,, the tests for receiver with diversity shall may be performed by applying the specified signals to one of the receiver inputs, and terminating or disabling the other(s). The tests and requirements are otherwise unchanged.

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Unless detailed the receiver characteristic are specified at each antenna connector of the BS.

Unless otherwise stated, all tests in this clause shall be performed at the BS antenna connector (test port A).If any external apparatus such as a RX amplifier, a filter or the combination of such devices is used, the tests according to subclauses 5.14.4 shall be performed to ensure that the requirements are met at test port B.

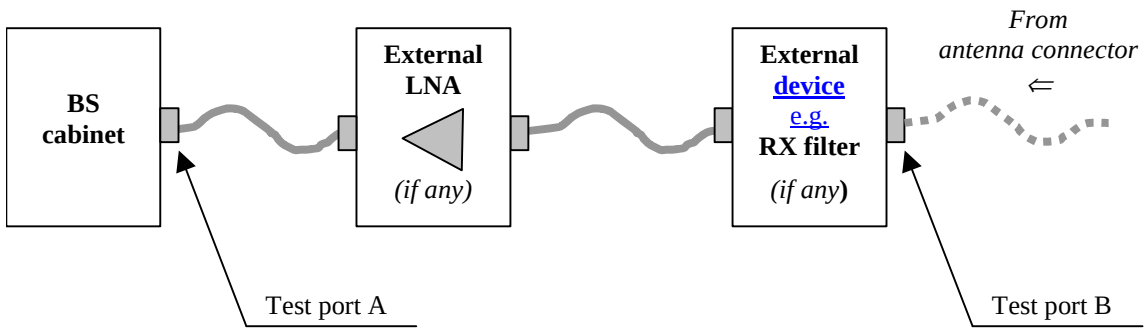

Figure 7.1: Receiver test ports