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**Title:** Answer to the LS on Antenna Interface Standards Group (AISG)  
**Response to:** RP-030122  
**Release:**  
**Work Item:**

**Source:** RAN  
**To:** AISG

**Cc:** RAN3, RAN4, SA

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**Attachments:** None

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## Introduction

TSG RAN received an LS from TSG RAN 4 in order to clarify items related to the AISG Specification on the interface to control Remote Electrical Tilting Antennas.  
TSG RAN would appreciate if AISG could answer to the raised comments and questions.

## Comments

1. It is unclear in which way the AISG proposals could be combined with the work in current RAN4 specifications.

**Question:** AISG is kindly asked on how to combine their Specification with the RAN4 and other 3GPP specifications?

2. The reference point used for performance requirements of the base station is the antenna port. In the current European R&TTE directive requirements all tests are performed at this reference point, it is unclear how these tests would be performed when a base station supporting the in-band signalling is tested (for example the in-band signal spectrum mask would fail the spurious requirements). RAN 4 is also aware of similar requirement in other regions of the world.

According to the current specification TS 25.104 the reference point in case of using auxiliary equipment like TMA etc. is Test port B. The so-called L1 Converter as considered in AISG Specification may belong also to such kind of auxiliary equipment.

**Question:** AISG is kindly asked whether this is in line with the AISG Specification?

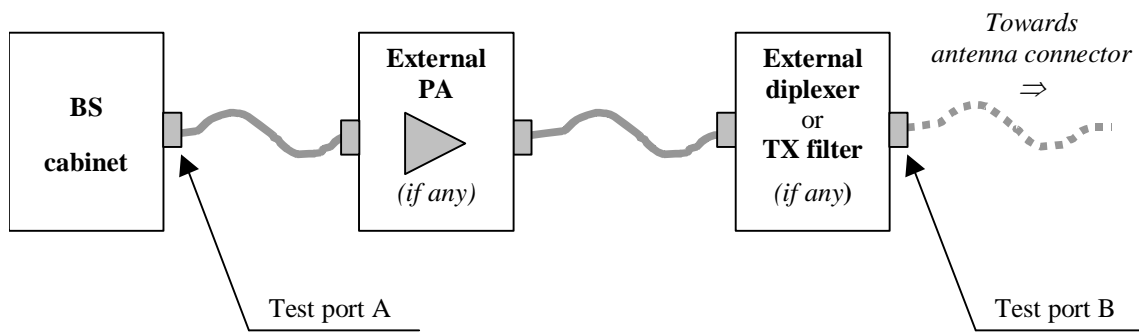
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## Just FYI

### ***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).*



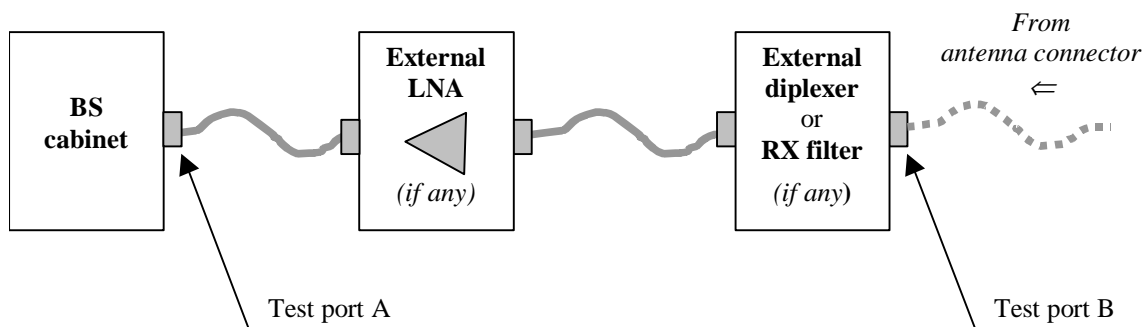
**Figure 6.1: Transmitter test ports**

## 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**

3. It is assumed that a new port as recommended by AISG would need to be define new performance requirements. It is not clear in which way such requirements could be defined.

**Question:** Is there a need for new performance requirements according to the AISG Specification?

Some more specific comments were addressed regarding the AISG1 draft. Also RAN is kindly asked to inform AISG about the issues listed below.

4. The Spectrum mask figure in the AISG1 draft 8 (sect 6.6.2, fig 6.6.6.2 for 'Intermediate Frequency' / 'Sub carrier') and Spurious Emissions fig 3 of [1] refer and apply to both 'a' and 'b' connection arrangements. The suggestion is to extend the upper measurement band to 12.75GHz and lower limit to 9kHz, and use the measurement bandwidth as identified in 3GPP TS 25.104v6.0.0 (2002-12) "BS Radio transmission and Reception (FDD) (Release 6)" table 6.8: BS Mandatory spurious emissions.

5. Interoperability issues for AISG1 'a' using the Intermediate Frequency or Sub-carrier based systems. The Bias Tee power supply arrangement of terminating Antenna Line devices needs a definitive value. A value of reactance and tolerance could be specified which can then be used to determine the maximum DC inrush current for the system. The system can then be designed to cope with this demand. This has multiple advantages to define the overall operation specifications of the TTE-system and aid interoperability issues when multiple Remote Electrical Tilt Antenna (RET) and/or other Antenna Line devices is daisy chained. By defining a value and tolerance, the Antenna Feeder system RF performances can be more accurately assessed for Cell RF coverage purposes, and vendor equipment can be specified for filter losses, sub-carrier, Bias Tee and

miscellaneous incidental losses. The consequence of not specifying an interoperability range is that each RF connection will need to be individually corrected.

**Actions:**

AISG is kindly asked to answer to the raised questions in order clarify the open issues.

According to the missing legal status of AISG AISG is kindly asked whether it is possible to submit the relevant part of the AISG specification to 3GPP TSG RAN 3 by a company contribution.

**Date of Next Meetings:**

TSG RAN#20	June 2003	Helsinki, Finland
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