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**Universal Mobile Telecommunications System (UMTS);
LTE;
Active Antenna System (AAS) Base Station (BS)
Electromagnetic Compatibility (EMC)
(3GPP TS 37.114 version 14.0.0 Release 14)**



Reference

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Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

1 Scope

The present document covers the assessment of UTRA TDD, UTRA FDD, E-UTRA and Multi-Standard Radio (MSR) Active Antenna Systems Base Stations in respect of Electromagnetic Compatibility (EMC).

NOTE: Whenever the UTRA AAS BS is referred in the following section, UTRA TDD and UTRA FDD shall be considered.

The present document specifies the applicable test conditions, performance assessment and performance criteria for UTRA and E-UTRA Base Stations and associated ancillary equipment in the following category:

- Active Antenna System Base Station for UTRA, E-UTRA and MSR meeting the requirements of 3GPP TS 37.105 [2], with conformance demonstrated by compliance to 3GPP TS 37.145-1 [3].

The scope of the present document is AAS BS with TAB connectors for every transceiver unit at the Transceiver Array Boundary (TAB). Requirements, procedures and values of an AAS Base Station without TAB connectors are not covered by the Rel-13 version of this document and are FFS.

The environment classification used in the present document refers to the residential, commercial and light industrial environment classification used in IEC 61000-6-1 [7] and IEC 61000-6-3 [8].

The EMC requirements have been selected to ensure an adequate level of compatibility for apparatus at residential, commercial and light industrial environments. The levels, however, do not cover extreme cases which may occur in any location but with low probability of occurrence.

2 References

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

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

- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] 3GPP TS 37.105: "Active Antenna System (AAS) Base Station (BS) transmission and reception".
- [3] 3GPP TS 37.145-1: "Active Antenna System (AAS) Base Station (BS) conformance testing; Part 1: Conducted conformance testing".
- [4] 3GPP TS 37.113: "E-UTRA, UTRA and GSM/EDGE; Multi-Standard Radio (MSR) Base Station (BS) Electromagnetic Compatibility (EMC)".
- [5] 3GPP TS 25.113: "Base Station (BS) and repeater ElectroMagnetic Compatibility (EMC)".
- [6] 3GPP TS 36.113: "Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) and repeater ElectroMagnetic Compatibility (EMC)".
- [7] IEC 61000-6-1: 2016: "Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity standard for residential, commercial and light-industrial environments".
- [8] IEC 61000-6-3: 2006/AMD1:2010: "Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light industrial environments".
- [9] 3GPP TR 37.842: "Radio Frequency (RF) requirement background for Active Antenna System (AAS) Base Station (BS)".

3 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1], 3GPP TS 37.113 [4] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1] or 3GPP TS 37.113 [4].

active antenna system base station: BS system which combines an Antenna Array with an Active Transceiver Unit Array and a Radio Distribution Network (RDN)

antenna port: RF interface at the Transceiver Array Boundary of the AAS BS, specifically the TAB connectors as defined in 3GPP TS 37.105 [2].

3.1 Symbols

For the purposes of the present document, the following symbols apply:

AAS	Active Antenna System
EMC	ElectroMagnetic Compatibility
MSR	Multi-Standard Radio
RDN	Radio Distribution Network
TAB	Transceiver Array Boundary

4 Test conditions

Where the AAS BS has multiple TAB connectors (i.e. antenna ports) which are declared to be equivalent then it is sufficient to perform EMC tests on a single representative TAB connector (i.e. antenna port). For the definition of the TAB connector equivalence declaration (D6.70), refer to 3GPP TS 37.145-1 [3].

EMC test shall not be performed with the AAS BS antenna array radiating, all TAB connectors shall be disconnected from the RDN/antenna array and terminated in an appropriate load impedance. For the description of the general AAS BS radio architecture and relations between the RDN/antenna array and the Transceiver Array Boundary, refer to 3GPP TR 37.842 [9].

For UTRA AAS BS the test conditions from 3GPP TS 25.113 [5] apply.

For E-UTRA AAS BS the test conditions from 3GPP TS 36.113 [6] apply.

For MSR AAS BS the test conditions from 3GPP TS 37.113 [4] apply.

5 Performance assessment

For UTRA AAS BS the performance assessment from 3GPP TS 25.113 [5] applies.

For E-UTRA AAS BS the performance assessment from 3GPP TS 36.113 [6] applies.

For MSR AAS BS the performance assessment from 3GPP TS 37.113 [4] applies.

6 Performance criteria

For UTRA AAS BS the performance criteria from 3GPP TS 25.113 [5] apply.

For E-UTRA AAS BS the performance criteria from 3GPP TS 36.113 [6] apply.

For MSR AAS BS the performance criteria from 3GPP TS 37.113 [4] apply.

7 Applicability overview

For UTRA AAS BS the applicability overview from 3GPP TS 25.113 [5] applies.

For E-UTRA AAS BS the applicability overview from 3GPP TS 36.113 [6] applies.

For MSR AAS BS the applicability overview from 3GPP TS 37.113 [4] applies.

8 Emission

For UTRA AAS BS the emission requirement from 3GPP TS 25.113 [5] applies.

For E-UTRA AAS BS the emission requirement from 3GPP TS 36.113 [6] applies.

For MSR AAS BS the emission requirement from 3GPP TS 37.113 [4] applies.

9 Immunity

For UTRA AAS BS the immunity requirement from 3GPP TS 25.113 [5] applies.

For E-UTRA AAS BS the immunity requirement from 3GPP TS 36.113 [6] applies.

For MSR AAS BS the immunity requirement from 3GPP TS 37.113 [4] applies.

Annex A (informative): Change history

Change history							
Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version
2016-02	RAN4#78	R4-161123				First version of TS	0.1.0
2016-03	RAN#71	RP-160401				Presented to RAN for approval. Editorial cotrections recommended by ETSI editHelp	1.0.0
2016-03	RP-71					TR approved by RAN plenary	13.0.0
2016/06	RP-72	RP-161142	0002	1	F	Clarification in EMC environmental conditions references	13.1.0
2017/03	RP-75	RP-170586	0004	-	F	CR to TS 37.114: Clarification of the EMC specification's scope	13.2.0
2017-03	RP-75	-	-	-	-	Update to Rel-14 version (MCC)	14.0.0

History

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