

TAC 011
ISSUE 2
DECEMBER 2021

**TYPE ACCEPTANCE CRITERIA FOR
ACTIVE ANTENNA SYSTEM (AAS)
BASE STATION EQUIPMENT
OPERATING BELOW 6 GHz**



AMENDMENT TABLE

Item	Issue No.	Paragraph	Descriptions
1	Issue 1 March 2021	All	First release
2	Issue 2 December 2021	1	Updating of the scope to clarify the type of AAS base station equipment covered by this type acceptance criteria
		2	Addition of the paired band 703 – 738 MHz / 758 – 793 MHz and extension of the paired 850 MHz band to 825 – 837.5 MHz / 870 – 882.5 MHz for AAS base station equipment operating below 6 GHz band
		3.1	Addition of 3GPP specification TS 37.145-2 to the technical requirements
		3.1(b)	Addition of new test item 3.1(b)(i)
		3.1(c)	Exclusion of table 7.5.5.2-4 from test item 3.1(c)(iii)
		3.1(d)	Addition of new test item 3.1(d)(i)

1. SCOPE

This document sets out the criteria for type acceptance of hybrid Active Antenna System (AAS) base station¹ equipment supporting single RAT UTRA, single RAT E-UTRA, and Multi-Standard Radio (UTRA, E-UTRA, 5G NR) and operating in frequency bands below 6 GHz (hereafter referred to as “the equipment”).²

2. OPERATING FREQUENCIES

The equipment shall operate in the following frequency bands:

Band Arrangement	Downlink (Base Station Transmit)	Uplink (Base Station Receive)
Paired Band	758 – 793 MHz	703 – 738 MHz
	870 – 882.5 MHz	825 – 837.5 MHz
	925 – 960 MHz	880 – 915 MHz
	1805 – 1880 MHz	1710 – 1785 MHz
	2110 – 2170 MHz	1920 – 1980 MHz
	2620 – 2690 MHz	2500 – 2570 MHz
Unpaired Band	2300 – 2390 MHz	
	3300 – 3400 MHz	
	3400 – 3600 MHz	

3. TECHNICAL REQUIREMENTS

- 3.1 The equipment shall meet the technical requirements stipulated in the specifications TS 37.145-1 titled “3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Active Antenna System (AAS) Base Station (BS) conformance testing; Part 1: Conducted conformance testing” and TS 37.145-2 titled “3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Active Antenna System (AAS) Base Station (BS) conformance testing; Part 2: Radiated conformance testing” published by the Third Generation Partnership Project (3GPP) in respect of the following:

(a) Transmitter (conducted requirements)

<i>Item</i>	<i>Transmitter Characteristics</i>	<i>Relevant Clause in 3GPP TS 37.145-1</i>
(i)	Maximum output power	Clause 6.2.2
(ii)	Adjacent Channel Leakage power Ratio	Clause 6.6.3
(iii)	Spectrum emission mask	Clause 6.6.4

¹ Hybrid AAS base station is defined in 3GPP specifications TS 37.145-1 and TS 37.145-2.

² Abbreviations:

E-UTRA	Evolved UTRA
NR	New Radio
RAT	Radio Access Technology
UTRA	Universal Terrestrial Radio Access

(iv)	Operating band unwanted emission	Clause 6.6.5
(v)	Spurious emission	Clause 6.6.6 excluding sub-clause 6.6.6.5.2.6 on co-location with other base stations
(vi)	Transmitter intermodulation	Clause 6.7

(b) Transmitter (radiated requirements)

<i>Item</i>	<i>Transmitter Characteristics</i>	<i>Relevant Clause in 3GPP TS 37.145-2</i>
(i)	Radiated transmit power	Clause 6.2

(c) Receiver (conducted requirements)

<i>Item</i>	<i>Receiver Characteristics</i>	<i>Relevant Clause in 3GPP TS 37.145-1</i>
(i)	Reference sensitivity level	Clause 7.2
(ii)	Adjacent channel selectivity and narrowband blocking	Clause 7.4
(iii)	Blocking	Clause 7.5 excluding sub-clauses 7.5.5.1.2, 7.5.5.3.2 and 7.5.5.4.2 and table 7.5.5.2-4 on co-location requirements
(iv)	Receiver spurious emissions	Clause 7.6
(v)	Receiver intermodulation	Clause 7.7

(d) Receiver (radiated requirements)

<i>Item</i>	<i>Receiver Characteristics</i>	<i>Relevant Clause in 3GPP TS 37.145-2</i>
(i)	OTA sensitivity	Clause 7.2

3.2 Additional Spurious Emissions Requirements

The spurious emissions of the equipment falling onto the 3.7 – 4.2 GHz band shall not exceed – 52 dBm/MHz.

4. EVALUATION METHOD

Compliance of the equipment with the technical requirements shall be evaluated in accordance with the procedures specified in the corresponding 3GPP specifications as given in clause 3.1 above.

5. REFERENCE

3GPP TS 37.105 titled “3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Active Antenna System (AAS) Base Station (BS) transmission and reception”

3GPP TS 37.145-1 titled “3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Active Antenna System (AAS) Base Station (BS) conformance testing; Part 1: Conducted conformance testing”

3GPP TS 37.145-2 titled “3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Active Antenna System (AAS) Base Station (BS) conformance testing; Part 2: Radiated conformance testing”

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