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Celična omrežja IMT - Harmonizirani standard za dostop do radijskega spektra - 23. del: Aktivni antenski sistem (AAS) bazne postaje (BS), izdaja 15

IMT cellular networks - Harmonised Standard for access to radio spectrum - Part 23: Active Antenna System (AAS) Base Station (BS) - Release 15

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Foreword

This draft Harmonised European Standard (EN) has been produced by ETSI Technical Committee Mobile Standards Group (MSG), and is now submitted for the combined Public Enquiry and Vote phase of the ETSI standards EN Approval Procedure.

For non-EU countries the present document may be used for regulatory (Type Approval) purposes.

The present document has been prepared under Commission's standardisation request C(2015) 5376 final [i.1] to provide one voluntary means of conforming to the essential requirements of Directive 2014/53/EU on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC [i.2].

Once the present document is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of the present document given in table A.1 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of that Directive and associated EFTA regulations.

The present document is part 23 of a multi-part deliverable. Full details of the entire series can be found in part 1 [i.6].

Proposed national transposition dates	
Date of latest announcement of this EN (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	18 months after doa

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Introduction

The present document is part of a set of standards developed by ETSI that are designed to fit in a modular structure to cover radio equipment within the scope of the Radio Equipment Directive [i.2]. The present document is produced following the guidance in ETSI EG 203 336 [i.3] as applicable.

1 Scope

The present document specifies technical characteristics and methods of measurements for types of radio equipment:

- AAS BS supporting Single-RAT UTRA FDD.
- AAS BS supporting Single-RAT E-UTRA.
- AAS BS supporting Multi-Standard Radio (UTRA-FDD, E-UTRA, NR).

In the present document, the term "requirements for single RAT operation" refers to requirements that are derived from the ETSI TS 125 141 [7] or ETSI TS 136 141 [11] specifications baseline. The term "requirements for MSR operation" refers to requirements derived from the ETSI TS 137 141 [6] specification baseline (including NR operation as part of MSR).

These radio equipment types are capable of operating in whole or any part of the frequency band(s) given in table 1-1.

Table 1-1: AAS BS *operating bands*

Band designation for operation as:		Band Category	Direction of transmission	AAS BS *operating bands*	Relevant EC/ECC decision
Single-RAT E-UTRA or MSR (note 1)	Single-RAT UTRA				
1	I	BC1	Transmit	2 110 MHz to 2 170 MHz	[i.20] and [i.21]
			Receive	1 920 MHz to 1 980 MHz	
3	III	BC2	Transmit	1 805 MHz to 1 880 MHz	[i.18] and [i.19]
			Receive	1 710 MHz to 1 785 MHz	
7	VII	BC1	Transmit	2 620 MHz to 2 690 MHz	[i.23] and [i.24]
			Receive	2 500 MHz to 2 570 MHz	
8	VIII	BC2	Transmit	925 MHz to 960 MHz	[i.18] and [i.19]
			Receive	880 MHz to 915 MHz	
20	XX	BC1	Transmit	791 MHz to 821 MHz	[i.13] and [i.14]
			Receive	832 MHz to 862 MHz	
22	XXII	BC1	Transmit	3 510 MHz to 3 590 MHz	[i.8] and [i.25]
			Receive	3 410 MHz to 3 490 MHz	
28	NA	BC1 (notes 2 and 3)	Transmit	758 MHz to 803 MHz	[i.11] and [i.12]
			Receive	703 MHz to 748 MHz	
31	NA	BC1 (note 2)	Transmit	462,5 MHz to 467,5 MHz	[i.10]
			Receive	452,5 MHz to 457,5 MHz	
32	XXXII	BC1 (note 7)	Transmit	1 452 MHz to 1 496 MHz	[i.15] and [i.16]
			Receive	N/A	
33	NA	BC3	Transmit and Receive	1 900 MHz to 1 920 MHz	[i.19]
34	NA	BC3	Transmit and Receive	2 010 MHz to 2 025 MHz	[i.19]
38	NA	BC3	Transmit and Receive	2 570 MHz to 2 620 MHz	[i.23] and [i.24]
40	NA	BC3	Transmit and Receive	2 300 MHz to 2 400 MHz	[i.22]
41	NA	BC3 (note 4)	Transmit and Receive	2 496 MHz to 2 690 MHz	[i.23] and [i.24]
42	NA	BC3	Transmit and Receive	3 400 MHz to 3 600 MHz	[i.8] and [i.25]
43	NA	BC3	Transmit and Receive	3 600 MHz to 3 800 MHz	[i.8] and [i.25]
50	NA	BC3 (note 7)	Transmit and Receive	1 432 MHz to 1 517 MHz	[i.15], [i.16] and [i.17]
51	NA	BC3 (note 7)	Transmit and Receive	1 427 MHz to 1 432 MHz	[i.15] and [i.16]
65	NA	BC1 (notes 2 and 8)	Transmit	2 110 MHz to 2 200 MHz	[i.20], [i.21] and [i.26]
			Receive	1 920 MHz to 2 010 MHz	

Band designation for operation as:		Band Category	Direction of transmission	AAS BS *operating bands*	Relevant EC/ECC decision
Single-RAT E-UTRA or MSR (note 1)	Single-RAT UTRA				
67	NA	BC1 (notes 2 and 7)	Transmit	738 MHz to 758 MHz	[i.11] and [i.12]
			Receive	N/A	
68	NA	BC1 (note 10)	Transmit	753 MHz to 783 MHz	[i.11] and [i.12]
			Receive	698 MHz to 728 MHz	
69	NA	BC1 (notes 2 and 7)	Transmit	2 570 MHz to 2 620 MHz	[i.23] and [i.24]
			Receive	N/A	
72	NA	BC1 (note 2)	Transmit	461 MHz to 466 MHz	[i.10]
			Receive	451 MHz to 456 MHz	
75	NA	BC1 (notes 2 and 7)	Transmit	1 432 MHz to 1 517 MHz	[i.15], [i.16] and [i.17]
			Receive	N/A	
76	NA	BC1 (notes 2 and 7)	Transmit	1 427 MHz to 1 432 MHz	[i.15] and [i.16]
			Receive	N/A	
77	NA	BC3 (notes 5 and 9)	Transmit and Receive	3 300 MHz to 4 200 MHz	[i.8] and [i.25]
78	NA	BC3 (notes 6 and 9)	Transmit and Receive	3 300 MHz to 3 800 MHz	[i.8] and [i.25]
87	NA	BC1 (note 10)	Transmit	420 MHz to 425 MHz	[i.10]
			Receive	410 MHz to 415 MHz	
88	NA	BC1 (note 10)	Transmit	422 MHz to 427 MHz	[i.10]
			Receive	412 MHz to 417 MHz	

NOTE 1: The band designations given are the MSR BS band designations. The relation between the band designations for MSR BS and the designations for NR, E-UTRA and UTRA are given in table 4.4-1 of ETSI TS 137 141 [6].
NOTE 2: The band is for NR and/or E-UTRA only.
NOTE 3: In Europe, according to [i.13] and [i.14], radio equipment in band 28 operates between 758 MHz and 791 MHz for the transmitter (F_{DL_low} = 758 MHz and F_{DL_high} = 791 MHz) and between 703 MHz and 736 MHz for the receiver (F_{UL_low} = 703 MHz and F_{UL_high} = 736 MHz).
NOTE 4: In Europe according to [i.22] and [i.23], radio equipment in band 41 operates between 2 570 MHz and 2 620 MHz (F_{DL_low} = 2 570 MHz and F_{DL_high} = 2 620 MHz).
NOTE 5: In Europe, according to [i.24] and [i.8], radio equipment in band n77 operates between 3 400 MHz and 3 800 MHz (F_{DL_low} = 3 400 MHz and F_{DL_high} = 3 800 MHz).
NOTE 6: In Europe, according to [i.24] and [i.8], radio equipment in band n78 operates between 3 400 MHz and 3 800 MHz (F_{DL_low} = 3 400 MHz and F_{DL_high} = 3 800 MHz).
NOTE 7: Radio equipment in bands 32, 50, 51, 67, 69, 75 and 76 only operates in transmit mode (downlink only). Only transmitter requirements are applicable.
NOTE 8: This band includes two frequency ranges that are harmonised in Europe:
(a) According to [i.21] and [i.22], radio equipment in band n65 operates between 2 110 MHz and 2 170 MHz for the transmitter (F_{DL_low} = 2 110 MHz and F_{DL_high} = 2 170 MHz), and between 1 920 MHz and 1 980 MHz for the receiver (F_{UL_low} = 1 920 MHz and F_{UL_high} = 1 980 MHz).
(b) Based on [i.26], radio equipment in band n65 operates between 2 170 MHz and 2 200 MHz for the transmitter (F_{DL_low} = 2 170 MHz and F_{DL_high} = 2 200 MHz) and between 1 980 MHz and 2 010 MHz for the receiver (F_{UL_low} = 1 980 MHz and F_{UL_high} = 2 010 MHz) as the Complementary Ground Component (CGC) of a Mobile-satellite service by reference to the present document.
NOTE 9: The band is for NR only.
NOTE 10: The band is for E-UTRA only.

NOTE 1: For BS capable of multi-band operation, the supported *operating bands* may belong to different Band Categories.

NOTE 2: AAS BS does not support GSM/EDGE, but BC2 is still applicable for protection of/against GSM/EDGE operation in BC2 *operating bands*.

NOTE 3: AAS BS does not support Narrow-Band Internet of Things (NB-IoT) in band, NB-IoT guard band, or standalone NB-IoT operation, but NB-IoT limits are still applicable for AAS BS protection of/against NB-IoT operation in *operating bands*.

NOTE 4: AAS BS does not support band 46 operation, but band 46 limits are still applicable for AAS BS protection of/against devices operating in band 46.