
Celična omrežja IMT - Harmonizirani standard za dostop do radijskega spektra - 18. del: Večstandardna (NR, E-UTRA, UTRA in GSM/EDGE) radijska bazna postaja, izdaja 17

IMT cellular networks - Harmonised Standard for access to radio spectrum - Part 18: NR, E-UTRA, UTRA and GSM/EDGE Multi-Standard Radio (MSR) Base Station (BS) Release 17

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**IMT cellular networks;
Harmonised Standard for access to radio spectrum;
Part 18: NR, E-UTRA, UTRA and GSM/EDGE
Multi-Standard Radio (MSR) Base Station (BS)
Release 17**

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Foreword

This Harmonised European Standard (EN) has been produced by ETSI Technical Committee Mobile Standards Group (MSG).

The present document has been prepared under the Commission's standardisation request C(2015) 5376 final [i.6] 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.1].

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 18 of a multi-part deliverable. Full details of the entire series can be found in part 1 [i.4].

National transposition dates	
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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).

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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.1]. The present document is produced following the guidance in ETSI EG 203 336 [i.2] as applicable.

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1 Scope

The present document specifies technical characteristics and methods of measurements for the following equipment:

- Multi-Standard Radio capable Base stations (NR, E-UTRA, UTRA, GSM/EDGE, NB-IoT).

NOTE: UTRA TDD is not included in Release 17 of ETSI EN 301 908.

These radio equipment types are capable of operating in all or any part of the frequency bands given in table 1-1.

Table 1-1: Base station operating bands

Band designation and Band Category	Supported RATs and Band Numbers					Direction of transmission	MSR Base Station operating bands (MHz)	Relevant EC/ECC decision
	NR	E-UTRA	NB-IoT	UTRA	GSM/EDGE			
1 (BC1)	n1	1	X	I	-	Transmit	2 110 to 2 170	[i.19] and [i.20].
						Receive	1 920 to 1 980	
3 (BC2)	n3	3	X	III	DCS 1800	Transmit	1 805 to 1 880	[i.17] and [i.18]
						Receive	1 710 to 1 785	
7 (BC1)	n7	7	X	VII	-	Transmit	2 620 to 2 690	[i.21] and [i.22]
						Receive	2 500 to 2 570	
8 (BC2)	n8	8	X	VIII	E-GSM	Transmit	925 to 960	[i.17] and [i.22]
						Receive	880 to 915	
20 (BC1)	n20	20	X	XX	-	Transmit	791 to 821	[i.12] and [i.13]
						Receive	832 to 862	
22 (BC1)	-	22	-	XXII	-	Transmit	3 510 to 3 590	[i.7] and [i.24]
						Receive	3 410 to 3 490	
28 (BC1) (note 1)	n28	28	X	-	-	Transmit	758 to 803	[i.9] and [i.10]
						Receive	703 to 748	
31 (BC1)	n31	31	X	-	-	Transmit	462,5 to 467,5	[i.26]
						Receive	452,5 to 457,5	
32 (BC1) (notes 5 and 6)	-	32	-	XXXII	-	Transmit	1 452 to 1 496	[i.14], [i.15] and [i.16]
						Receive	N/A	
38 (BC3)	n38	38	-	-	-	Transmit and Receive	2 570 to 2 620	[i.22] and [i.23]
40 (BC3)	n40	40	-	-	-	Transmit and Receive	2 300 to 2 400	[i.21]
41 (BC3) (note 2)	n41	41	X	-	-	Transmit and Receive	2 496 to 2 690	[i.22] and [i.23]
42 (BC3)	-	42	X	-	-	Transmit and Receive	3 400 to 3 600	[i.7] and [i.24]
43 (BC3)	-	43	X	-	-	Transmit and Receive	3 600 to 3 800	[i.7] and [i.24]
50 (BC3) (note 5)	n50	50	-	-	-	Transmit and Receive	1 432 to 1 517	[i.15]
51 (BC3) (note 5)	n51	51	-	-	-	Transmit and Receive	1 427 to 1 432	[i.15]
65 (BC1) (note 7)	n65	65	X	-	-	Transmit	2 110 to 2 200	[i.19], [i.20] and [i.25]
						Receive	1 920 to 2 010	
67 (BC1) (note 5)	n67	67	-	-	-	Transmit	738 to 758	[i.9] and [i.10]
						Receive	N/A	
68 (BC1)	-	68	-	-	-	Transmit	753 to 783	[i.9] and [i.10]
						Receive	698 to 728	
69 (BC1) (note 5)	-	69	-	-	-	Transmit	2 570 to 2 620	[i.22] and [i.23]
						Receive	N/A	
72 (BC1)	n72	72	X	-	-	Transmit	461 to 466	[i.26]
						Receive	451 to 456	
75 (BC1) (note 5)	n75	75	-	-	-	Transmit	1 432 to 1 517	[i.14], [i.15] and [i.16]
						Receive	N/A	

Band designation and Band Category	Supported RATs and Band Numbers					Direction of transmission	MSR Base Station operating bands (MHz)	Relevant EC/ECC decision
	NR	E-UTRA	NB-IoT	UTRA	GSM/EDGE			
76 (BC1) (note 5)	n76	76	-	-	-	Transmit	1 427 to 1 432	[i.15] and [i.16]
						Receive	N/A	
77 (BC3) (note 3)	n77	-	-	-	-	Transmit and Receive	3 300 to 4 200	[i.7] and [i.24]
78 (BC3) (note 4)	n78	-	-	-	-	Transmit and Receive	3 300 to 3 800	[i.7]and [i.24]
87 (BC1)	-	87	X	-	-	Transmit	420 to 425	[i.26]
						Receive	410 to 415	
88 (BC1)	-	88	X	-	-	Transmit	422 to 427	[i.26]
						Receive	412 to 417	
NOTE 1: In Europe according to [i.9], 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 2: 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 3: In Europe according to [i.7] and [i.24], radio equipment in band 77 operates between 3 400 MHz and 3 800 MHz ($F_{DL_low} = 3 400$ MHz and $F_{DL_high} = 3 800$ MHz).								
NOTE 4: In Europe according to [i.7]and [i.24], radio equipment in band 78 operates between 3 400 MHz and 3 800 MHz ($F_{DL_low} = 3 400$ MHz and $F_{DL_high} = 3 800$ MHz).								
NOTE 5: Restricted to NR and/or E-UTRA operation when carrier aggregation is configured. The downlink operating band is paired with the uplink operating band (external) of the carrier aggregation configuration that is supporting the configured Pcell.								
NOTE 6: Restricted to UTRA operation when dual band is configured (e.g. DB-DC-HSDPA or dual band 4C-HSDPA). The down link frequency(ies) of this band are paired with the uplink frequency(ies) of the other FDD band (external) of the dual band configuration.								
NOTE 7: This band includes two frequency ranges that are harmonised in Europe:								
(a) According to [i.19] and [i.20], radio equipment in band 65 operates between 2 110 MHz to 2 170 MHz for the transmitter ($F_{DL_low} = 2 110$ MHz and $F_{DL_high} = 2 170$ MHz), and between 1 920 MHz to 1 980 MHz for the receiver ($F_{UL_low} = 1 920$ MHz and $F_{UL_high} = 1 980$ MHz).								
(b) Based on [i.25], radio equipment in band 65 operates between 2 170 MHz to 2 200 MHz for the transmitter ($F_{DL_low} = 2 170$ MHz and $F_{DL_high} = 2 200$ MHz) and between 1 980 MHz to 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 1: For BS capable of multi-band operation, the supported operating bands may belong to different Band Categories.

The present document covers requirements for multi-RAT capable NR, E-UTRA, UTRA and GSM/EDGE MSR Base Stations for 3GPP™ Release 9, 10, 11, 12, 13, 14, 15, 16 and 17. This includes the requirements for MSR operating bands from 3GPP Release 18.

The RF requirements in the present document do not apply for multi-band operation supporting bands for both FDD and TDD.

NOTE 2: The relationship between the present document and essential requirements of article 3.2 of 2014/53/EU [i.1] is given in annex A.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found in the [ETSI docbox](#).

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

- [1] [ETSI TS 137 141 \(V17.14.0\) \(08-2024\)](#): "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; 5G; NR, E-UTRA, UTRA and GSM/EDGE; Multi-Standard Radio (MSR) Base Station (BS) conformance testing (3GPP TS 37.141 version 17. 14.0 Release 17)".
- [2] [ETSI TS 125 104 \(V17.0.1\) \(09-2024\)](#): "Universal Mobile Telecommunications System (UMTS); Base Station (BS) radio transmission and reception (FDD) (3GPP TS 25.104 version 17.0.1 Release 17)".
- [3] Void.
- [4] [ETSI TS 136 104 \(V17.12.0\) \(05-2024\)](#): "LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) radio transmission and reception (3GPP TS 36.104 version 17.12.0 Release 17)".
- [5] [ETSI TS 145 005 \(V17.0.0\) \(05-2022\)](#): "Digital cellular telecommunications system (Phase 2+) (GSM); GSM/EDGE Radio transmission and reception (3GPP TS 45.005 version 17.0.0 Release 17)".
- [6] [ETSI EN 301 908-3 \(V15.1.1\) \(05-2024\)](#): "IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 3: CDMA Direct Spread (UTRA FDD) Base Stations (BS) Release 15".
- [7] [ETSI EN 301 908-14 \(V17.1.1\) \(02-2025\)](#): "IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 14: Evolved Universal Terrestrial Radio Access (E-UTRA) Base Stations (BS) Release 17".
- [8] Void.
- [9] [ETSI EN 301 502 \(V12.5.2\) \(03-2017\)](#): "Global System for Mobile communications (GSM); Base Station (BS) equipment; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU".
- [10] [ETSI TS 137 104 \(V17.13.0\) \(08-2024\)](#): "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; 5G; NR, E-UTRA, UTRA and GSM/EDGE; Multi-Standard Radio (MSR) Base Station (BS) radio transmission and reception (3GPP TS 37.104 version 17.13.0 Release 17)".
- [11] [ETSI TS 136 141 \(V17.12.0\) \(05-2024\)](#): "LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) conformance testing (3GPP TS 36.141 version 17.12.0 Release 17)".
- [12] [ETSI TS 125 141 \(V17.0.0\) \(04-2022\)](#): "Universal Mobile Telecommunications System (UMTS); Base Station (BS) conformance testing (FDD) (3GPP TS 25.141 version 17.0.0 Release 17)".
- [13] Void.

- [14] [ETSI TS 151 021 \(V17.0.0\) \(05-2022\)](#): "Digital cellular telecommunications system (Phase 2+) (GSM); Base Station System (BSS) equipment specification; Radio aspects (3GPP TS 51.021 version 17.0.0 Release 17)".
- [15] [ETSI TS 138 141-1 \(V17.14.0\) \(08-2024\)](#): "5G; NR; Base Station (BS) conformance testing Part 1: Conducted conformance testing (3GPP TS 38.141-1 version 17.14.0 Release 17)".
- [16] [ETSI TS 138 104 \(V17.14.0\) \(08-2024\)](#): "5G; NR; Base Station (BS) radio transmission and reception (3GPP TS 38.104 version 17.14.0 Release 17)".
- [17] Void.

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] [Directive 2014/53/EU](#) of the European Parliament and of the council of 16 April 2014 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] ETSI EG 203 336 (V1.2.1) (05-2020): "Guide for the selection of technical parameters for the production of Harmonised Standards covering article 3.1(b) and article 3.2 of Directive 2014/53/EU".
- [i.3] ETSI TR 100 028 (all parts) (V1.4.1) (12-2001): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics".
- [i.4] ETSI EN 301 908-1 (V15.2.1) (01-2023): "IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 1: Introduction and common requirements; Release 15".
- [i.5] Recommendation ITU-R SM.329-12 (09-2012): "Unwanted emissions in the spurious domain".
- [i.6] [Commission Implementing Decision C\(2015\) 5376 final](#) of 4.8.2015 on a standardisation request to the European Committee for Electrotechnical Standardisation and to the European Telecommunications Standards Institute as regards radio equipment in support of Directive 2014/53/EU of the European Parliament and of the Council.
- [i.7] [Commission Implementing Decision \(EU\) 2019/235](#) of 24 January 2019 on amending Decision 2008/411/EC as regards an update of relevant technical conditions applicable to the 3 400-3 800 MHz frequency band.
- [i.8] ETSI TS 103 807 (V1.1.1) (10-2021): "Mobile Standards Group (MSG); IMT Cellular Networks Base Stations (BS) Additional Regulatory Requirements".
- [i.9] [ECC Decision \(15\)01](#): "Harmonised technical conditions for mobile/fixed communications networks (MFCN) in the band 694-790 MHz including a paired frequency arrangement (Frequency Division Duplex 2x30 MHz) and an optional unpaired frequency arrangement (Supplemental Downlink)", approved 06 March 2015.
- [i.10] [Commission Implementing Decision \(EU\) 2016/687](#) of 28 April 2016 on the harmonisation of the 694-790 MHz frequency band for terrestrial systems capable of providing wireless broadband electronic communications services and for flexible national use in the Union.
- [i.11] Void.