

CST Technical Specification

Specification for IMT Base Stations and Related Equipment

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This technical specification is issued by The Communications, Space and Technology Commission in the Kingdom of Saudi Arabia in accordance with the provisions of the Communications and Information Technology Act issued by Royal Decree No. (M/106) dated 02/11/1443 AH and its bylaw, and the Commission's regulation.

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Document History Table

Version	Issue Date	Description
Issue 1	July 2021	An enhanced version of the specification for mobile international telecommunication base stations and related equipment. Merging specifications RI002 and RI057.
Issue 2	October 2023	

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1- Scope

This specification applies to IMT base stations and related Equipment utilizing GSM, UMTS, LTE, LTE-M, NB-IoT and 5G NR Technologies.

2- Enforcement

- 2-1 This specification shall enter into force from issue date.
- 2-2 Any previous version of this technical specification is withdrawn.

3- General Requirements

- 3-1 All equipment must comply with the requirement of CST specification GEN001, be safe and must not adversely affect other electrical equipment.
- 3-2 All telecommunications and radio terminal equipment must comply with the relevant technical specifications established by CST. In addition, such equipment may be subject to regulations for Declaration of Conformity or registration. Additional details are available at CST website.
- 3-3 If more than one interface type is offered by a piece of equipment, each interface must meet the applicable technical specifications.
- 3-4 Further information on the characteristics and presentation of network interfaces can be obtained by coordinating with the mobile network operators.
- 3-5 It is mandatory that test reports are obtained from a laboratory that has been accredited by a body that is a member of the ILAC Mutual Recognition Arrangement.

4- Limits and conditions

Testing should be carried out to ensure compliance with the listed specifications.

Frequency band	Max Output Power or Magnetic Field	Usage	Standard	Comments
TX: : 663 – 698 MHz RX: 617 – 652 MHz	43 dBm/5MHz	LTE, NB-IoT, LTE-M, 5G NR	TS 36.104 TS 38.104 EN 301 908-13 EN 301 489-52	B71/n71 (FDD)
TX: 758 – 788 MHz RX: 703 – 733 MHz	43 dBm/5MHz	LTE, NB-IoT, LTE-M, 5G NR	EN 301 908-13 EN 301 489-52	B28/n28 (FDD)
TX: : 738 – 758 MHz	43 dBm/5MHz	LTE, 5G NR	TS 36.104 TS 38.104 EN 301 908-13 EN 301 489-52	B67/n67 (SDL)
TX: 791 – 821 MHz RX: 832 – 862 MHz	48 dBm/5MHz	UMTS/, LTE, NB-IoT, LTE-M, 5G NR	EN 301 908-13 EN 301 489-52	B20/n20 (FDD)

TX: 925 – 960 MHz RX: 880 – 915 MHz	43 dBm/5MHz	GSM, UMTS, LTE, NB-IoT, LTE-M, 5G NR	EN 301 502 EN 301 489-50 EN 301 908-1 EN 301 489-52	B8/n8 (FDD) BW for GSM is the system bandwidth
TX: 1805 – 1880 MHz RX: 1710 – 1785 MHz	48 dBm/5MHz	GSM, UMTS, LTE, NB-IoT, LTE-M, 5G NR	EN 301 502 EN 301 489-50 EN 301 908-13 EN 301 489-52	B3/n3 (FDD) BW for GSM is the system bandwidth
TX: 2110 – 2200 MHz RX: 1920 – 2010 MHz	48 dBm/5MHz	UMTS, LTE, NB-IoT, LTE-M, 5G NR	TS 36.104 TS 38.104 EN 301 908-13 EN 301 489-52	B1/n1 (FDD) B65/n65 (FDD)
TX: 2300 – 2400 MHz RX: 2300 – 2400 MHz	65 dBm/5MHz EIRP (non AAS) 44 dBm/5MHz TRP (AAS)	LTE, LTE-M, 5G NR	EN 301 908-13 EN 301 489-52	B40/n40 (TDD)
TX: 2500 – 2690 MHz RX: 2500 – 2690 MHz	65 dBm/5MHz EIRP (non AAS) 44 dBm/5MHz TRP (AAS)	LTE, LTE-M, 5G NR	EN 301 908-13 EN 301 489-52	B41/n41 (TDD)

TX: 3.4 – 3.6 GHz RX: 3.4 – 3.6 GHz	65 dBm/5MHz EIRP (non AAS) 44 dBm/5MHz TRP (AAS)	LTE	EN 301 908-13 EN 301 489-52	B42 (TDD)
TX: 3.6 – 3.8 GHz RX: 3.6 – 3.8 GHz	65 dBm/5MHz EIRP (non AAS) 44 dBm/5MHz TRP (AAS)	LTE	EN 301 908-13 EN 301 489-52	B43 (TDD)
TX: 3.3 – 3.8 GHz RX: 3.3 – 3.8 GHz	65 dBm/5MHz EIRP (non AAS) 44 dBm/5MHz TRP (AAS)	5G NR	EN 301 908-13 EN 301 489-52	n78 (TDD)
TX: 3.3 – 4.2 GHz RX: 3.3 – 4.2 GHz	65 dBm/5MHz EIRP (non AAS) 44 dBm/5MHz TRP (AAS)	5G NR	EN 301 908-13 EN 301 489-52	n77 (TDD)

5- Licensing Requirements

5-1 A spectrum license is required.

5-2 The following Licenses are also required for the usage and importation of IMT base stations and related equipment:

5-2-1 Facilities-Based Unified Telecommunications Services License

5-2-2 Facilities-Based Fixed Telecommunications Services License

6- Additional Requirements

There is no additional requirements for this technical specification.

7- References

The following referenced documents are indispensable for the application of this document. If no issue or revision number is quoted along with the title of a technical specification or standard, the latest published version should be used.

EN 301 502

Global System for Mobile communications (GSM); Base Station (BS) equipment; Harmonized Standard covering the essential requirements of article 3.2 of the Directive 2014/53/E.

EN 301 908-1

Electromagnetic compatibility and Radio spectrum Matters (ERM); Base Stations (BS) and User Equipment (UE) for IMT-2000 Third-Generation cellular networks; Part 1: Harmonized EN for IMT-2000, introduction and common requirements, covering essential requirements of article 3.2 of the R&TTE directive.

EN 301 908-3

Electromagnetic compatibility and Radio spectrum Matters (ERM); Base Stations (BS) and User Equipment (UE) for IMT-2000 Third-Generation cellular networks; Part 3: Harmonized EN for IMT-2000, CDMA Direct Spread (UTRA FDD) (BS) covering essential requirements of article 3.2 of the R&TTE directive.

EN 301 908-7

Electromagnetic compatibility and Radio spectrum Matters (ERM); Base Stations (BS), Repeaters and User Equipment (UE) for IMT-2000 Third-Generation cellular networks; Part 7: Harmonized EN for IMT-2000, CDMA TDD (UTRA TDD) (BS) covering essential requirements of article 3.2 of the R&TTE directive.

EN 301 908-11

Electromagnetic compatibility and Radio spectrum Matters (ERM); Base Stations (BS), Repeaters and User Equipment (UE) for IMT-2000 Third-Generation cellular networks; Part 11: Harmonized EN for IMT-2000, CDMA Direct Spread (UTRA FDD) (Repeaters) covering essential requirements of article 3.2 of the R&TTE directive.

EN 301 908-13

IMT cellular networks; Harmonised EN covering the essential requirements of article 3.2 of the R&TTE Directive; Part 13: Evolved Universal Terrestrial Radio Access (E-UTRA) User Equipment (UE).

EN 301 908-25

IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 25: New Radio (NR) User Equipment (UE)

EN 301 489-1

Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements.

EN 301 489-50

Electro Magnetic Compatibility (EMC) standard for radio equipment and services; Part 50: Specific conditions for Cellular Communication Base Station (BS), repeater and ancillary equipment; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU

EN 301 489-52

Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 52: Specific conditions for Cellular Communication User Equipment (UE) radio and ancillary equipment; Harmonised Standard for Electromagnetic Compatibility