

CST Technical Specification

Specification for Ultra Wideband Equipment

Document Number: RI085
Revision: Issue 03
Date: October 2023

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.

Communications, Space and Technology Commission (CST)
P.O Box 75606 – Riyadh 11588 – Kingdom of Saudi Arabia

Telephone: + 966 1 14618000
Fax: + 966 1 14618120
E-mail: info@cst.gov.sa
Website: www.cst.gov.sa

Document History Table

| Version | Issue Date | Description |
|---------|--------------|-------------|
| Issue 1 | January 2010 | |
| Issue 2 | July 2021 | |
| Issue 3 | October 2023 | |

Table of contents

| | |
|---------------------------------|---|
| 1- Scope..... | 4 |
| 2- Enforcement | 4 |
| 3- General Requirements..... | 5 |
| 4- Limits and conditions..... | 6 |
| 5- Licensing Requirements..... | 7 |
| 6- Additional Requirements..... | 7 |
| 7- References..... | 8 |

1- Scope

- 1-1 This specification applies to ultra wideband equipment.
- 1-2 UWB technology holds potential for a wide variety of new Short Range Devices (SRD) for communications measurement, location tracking, imaging, surveillance and medical systems.

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- 2-2 Any previous version of this technical specification is withdrawn.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. Please visit CST website for details.
- 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 |
|----------------|------------------------------------|-------|--|----------|
| 30 – 1600 MHz | -90 dBm/MHz EIRP | UWB | EN 302 065-1 EN 301 489-32 EN 301 489-33 | |
| 1.6 – 2.7 GHz | -85 dBm/MHz EIRP | UWB | EN 302 065-1 EN 301 489-32 EN 301 489-33 | |
| 2.7 – 3.4 GHz | -70 dBm/MHz EIRP | UWB | EN 302 065-1 EN 301 489-32 EN 301 489-33 | |
| 3.4 – 3.8 GHz | -80 dBm/MHz EIRP | UWB | EN 302 065-1 EN 301 489-32 EN 301 489-33 | |
| 3.8 – 6 GHz | -70 dBm/MHz EIRP | UWB | EN 302 065-1 EN 301 489-32 EN 301 489-33 | |
| 6 – 8.5 GHz | -41.3 dBm/MHz EIRP | UWB | EN 302 065-1 EN 302 500 - 1 EN 302 500 - 2 EN 301 489-32 EN 301 489-33 | |
| 8.5 – 10.6 GHz | -65 dBm/MHz EIRP | UWB | EN 302 065-1 EN 301 489-32 EN 301 489-33 | |
| >10.6 GHz | -85 dBm/MHz EIRP | UWB | EN 302 066 EN 301 489-32 EN 301 489-33 | |

5- Licensing Requirements

No licensing requirements apply.

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 302 065-1

Short Range Devices (SRD) using Ultra Wide Band technology (UWB);
Harmonised Standard covering the essential requirements of article 3.2
of the Directive 2014/53/EU; Part 1: Requirements for Generic UWB
applications

EN 302 065-2

Short Range Devices (SRD) using Ultra Wide Band technology (UWB);
Harmonised Standard covering the essential requirements of article 3.2
of the Directive 2014/53/EU; Part 2: Requirements for UWB location
tracking

EN 302 065-3

Short Range Devices (SRD) using Ultra Wide Band technology (UWB);
Harmonised Standard covering the essential requirements of article 3.2
of the Directive 2014/53/EU; Part 3: Requirements for UWB devices for
ground based vehicular applications

EN 302 065-4

Short Range Devices (SRD) using Ultra Wide Band technology (UWB);
Harmonised Standard covering the essential requirements of article 3.2
of the Directive 2014/53/EU; Part 4: Material Sensing devices using UWB
technology below 10,6 GHz

EN 302 066

Short Range Devices (SRD); Ground- and Wall- Probing Radio determination (GPR/WPR) devices; Harmonised Standard for access to radio spectrum

EN 302 500-1

Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD) using Ultra WideBand (UWB) technology; Location Tracking equipment operating in the frequency range from 6 GHz to 8.5 GHz; Part 1: Technical characteristics and methods of measurement

EN 302 500-2

Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD) using Ultra WideBand (UWB) technology; Location Tracking equipment operating in the frequency range from 6 GHz to 8.5 GHz; Part 2: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive

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 301 489-33

Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 33: Specific conditions for Ultra-WideBand (UWB) devices; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU

EN 301 489-32

Electromagnetic compatibility and Radio spectrum Matters (ERM);
Electro Magnetic Compatibility (EMC) standard for radio equipment and
services; Part 32: Specific conditions for Ground and Wall Probing Radar
applications