ETSI EN 302 065-2-5 V1.1.1 (2026-03)

HARMONISED EUROPEAN STANDARD

Short Range Devices (SRD) using Ultra Wide Band technology (UWB); Harmonised standard for access to radio spectrum; Part 2: Ultra Wide Band location tracking devices; Sub-part 5: Requirements for enhanced indoor devices within 6,0 GHz to 8,5 GHz

Reference
DEN/ERM-TGUWB-622

Keywords
harmonised standard, location, radiodetermination, SRD, UWB

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - APE 7112B
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

Contents

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI IPR online database.

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™**, **LTE™** and **5G™** logo are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM**® and the GSM logo are trademarks registered and owned by the GSM Association.

Foreword

This Harmonised European Standard (EN) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

The present document has been prepared under the Commission's standardisation request C(2015) 5376 final [i.4] 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.5].

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 conformance with the corresponding essential requirements of that Directive and associated EFTA regulations.

The present document is part 2, sub-part 5 of a multi-part deliverable covering Short Range Devices (SRD) using Ultra Wide Band technology (UWB); Harmonised standard for access to radio spectrum. Full details of the entire series can be found in part 1 [i.8].

National transposition dates	
Date of adoption of this EN:	25 February 2026
Date of latest announcement of this EN (doa):	31 May 2026
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 November 2026
Date of withdrawal of any conflicting National Standard (dow):	30 November 2027

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

In the present document the updated UWB regulation for the EU [i.2] covering enhanced indoor devices is considered. Adequate measurement methods and relevant parameter limits are described in order to support EU market stakeholders in their efforts to ensure conformance of their UWB products based on enhanced indoor devices with the updated EU regulatory rules published in ECC/DEC/(06)04 [i.1] and in (EU) 2024/1467 [i.2].

1 Scope

The present document specifies technical requirements, limits and test methods for transceivers and transmitters utilizing Ultra WideBand (UWB) technologies for location tracking for enhanced indoor devices within 6,0 GHz to 8,5 GHz.

NOTE: The relationship between the present document and essential requirements of article 3.2 of Directive 2014/53/EU 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 EN 303 883-1 (V2.1.1) (08-2024): "Short Range Devices (SRD) and Ultra Wide Band (UWB); Part 1: Measurement techniques for transmitter requirements".

[2] ETSI EN 303 883-2 (V2.1.1) (08-2024): "Short Range Devices (SRD) and Ultra Wide Band (UWB); Part 2: Measurement techniques for receiver requirements".

[3] ETSI TS 103 941 (V1.1.1) (01-2024): "Short Range Devices (SRD) and Ultra Wide Band (UWB); Measurement setups and specifications for testing under full environmental profile (normal and extreme environmental conditions)".

[4] ETSI EN 302 065-3-1 (V3.2.1) (02-2025): "Short Range Devices (SRD) using Ultra Wide Band technology (UWB); Harmonised standard for access to radio spectrum; Part 3: UWB devices installed in motor and railway vehicles; Sub-part 1: Requirements for UWB devices for vehicular access systems within 3,8 GHz to 4,2 GHz or 6 GHz to 8,5 GHz".

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 may be useful in implementing an ETSI deliverable or add to the reader's understanding but are not required for conformance to the present document.

[i.1] ECC/DEC/(06)04: "ECC Decision of 24 March 2006 on the harmonised use, exemption from individual licensing and free circulation of devices using Ultra-Wideband (UWB) technology in bands below 10.6 GHz (ECC Decision (06)04), amended on 6 July 2007, amended 9 December 2011, amended on 8 March 2019 and amended 18 November 2022".

[i.2] Commission implementing decision (EU) 2024/1467 of 27 May 2024 amending Implementation Decision (EU) 2019/785 on the harmonisation of radio spectrum for equipment using ultra-wideband technology in the Union.

[i.3] ERC Recommendation 74-01: "Unwanted emissions in the spurious domain", Approved 1998 amended 29 May 2019.

[i.4] 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.5] 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 (RE-Directive).

[i.6] ETSI EG 203 336 (V1.2.1): "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.7] ETSI TS 103 567 (V1.1.1): "Requirements on signal interferer handling".

[i.8] ETSI 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".

3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in ETSI EN 303 883-1 [1] and the following apply:

device: equivalent to equipment

fixed indoor infrastructure device: radio equipment intended for non-portable indoor use

portable device: radio equipment intended for portable use

3.2 Symbols

For the purposes of the present document, the symbols given in ETSI EN 303 883-1 [1] apply.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI EN 303 883-1 [1] and the following apply:

PROF Permitted Range of Operating Frequency

4 Technical requirements specifications

4.1 Environmental profile

The technical requirements of the present document apply under the environmental profile for operation of the equipment, which shall be in accordance with its intended use, but as a minimum, shall be as specified in the test conditions contained in the present document. The equipment shall comply with all the technical requirements of the present document at all times when operating within the boundary limits of the operational environmental profile defined by its intended use.

4.2 Equipment categories

4.2.1 General

The intended use of the equipment covered by the present document is limited to equipment, which is capable to operate indoor within the frequency range 6,0 GHz to 8,5 GHz in accordance with the enhanced indoor devices provisions as specified in ECC/DEC/(06)04 [i.1], annex A1.3.2 and in (EU) 2024/1467 [i.2].

Therefore the present document covers two main equipment categories, which are Portable Devices and Fixed Indoor Devices, see Table 1.

Table 1: Equipment categories overview

Equipment category number	Equipment category description
1	Fixed Indoor Infrastructure Device
2	Portable Device

4.2.2 Summary equipment sub-categories

In addition to the categories listed in Table 1 in clause 4.2.1 there are two sub-categories identified in category 1: 1.1 UWB TX only and 1.2 UWB RX/TX. A special sub-category of the Fixed Indoor Infrastructure Devices are the UWB TX only devices, for which only a minimal subset of testing is required. In the category 2 there is one sub-category identified: 2.1 Portable Device, see Table 2.

Table 2: Equipment sub-categories and related requirements overview

Sub-category	Name	Requirement
1.1	Fixed Indoor Infrastructure Device with UWB TX only	• Mean e.i.r.p. spectral density limit: -31,3 dBm/MHz • Peak e.i.r.p. spectral density limit: 10 dBm/50 MHz • PROF: 6 GHz to 8,5 GHz and OFR ≥ 50 MHz • Duty cycle: ≤ 5 % per second • TXUE below limits (see clause 4.3.5)
1.2	Fixed Indoor Infrastructure Device with UWB RX/TX	• Mean e.i.r.p. spectral density limit: -31,3 dBm/MHz • Peak e.i.r.p. spectral density limit: 10 dBm/50 MHz • PROF: 6 GHz to 8,5 GHz and OFR ≥ 50 MHz • Duty cycle: ≤ 5 % per second • TXUE below limits (see clause 4.3.5) • Receiver Baseline Sensitivity (RBS) • Receiver Baseline Resilience (RBR)
2.1	Portable Device	• Mean e.i.r.p. spectral density: -41,3 dBm/MHz (note 1 and note 2) • Peak e.i.r.p. spectral density: 0 dBm/50 MHz (note 1 and note 2) • PROF: 6 GHz to 8,5 GHz and OFR ≥ 50 MHz • Duty cycle: ≤ 100 % per second (note 2) • TXUE below limits (see clause 4.3.5) • Subject to control by an indoor infrastructure • Operate within an identifiable network • Receiver Baseline Sensitivity (RBS) • Receiver Baseline Resilience (RBR)
NOTE 1: If the equipment is operating within an identifiable network and is subject to control by an indoor infrastructure, then the allowed Mean e.i.r.p. spectral density limit is -31,3 dBm/MHz and the allowed Peak e.i.r.p. spectral density limit is 10 dBm/50 MHz. NOTE 2: A duty cycle limitation of maximum of 5 % per second shall be applicable if the Mean e.i.r.p. spectral density limit is higher than -41,3 dBm/MHz or the Peak e.i.r.p. spectral density limit is higher than 0 dBm/50 MHz.		