

<b>STN</b>	<b>Elektromagnetická kompatibilita a záležitosti rádiového spektra (ERM). Zariadenia s krátkym dosahom (SRD) používajúce technológiu ultraširokého pásma (UWB). Harmonizovaná EN vzťahujúca sa na základné požiadavky podľa článku 3.2 smernice R&amp;TTE. Časť 1: Požiadavky na všeobecné aplikácie UWB.</b>	<b>STN EN 302 065-1 V1.3.1</b>
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Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD) using Ultra Wide Band technology (UWB); Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive; Part 1: Requirements for Generic UWB applications

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/14

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Harmonized European Standard

**Electromagnetic compatibility  
and Radio spectrum Matters (ERM);  
Short Range Devices (SRD) using  
Ultra Wide Band technology (UWB);  
Harmonized EN covering the essential requirements  
of article 3.2 of the R&TTE Directive;  
Part 1: Requirements for Generic UWB applications**

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**ETSI**

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## Foreword

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

The present document has been produced by ETSI in response to mandate M/407 issued from the European Commission under Directive 98/34/EC [i.14] as amended by Directive 98/48/EC [i.16].

The title and reference to the present document are intended to be included in the publication in the Official Journal of the European Union of titles and references of Harmonized Standard under the Directive 1999/5/EC [i.15].

See article 5.1 of Directive 1999/5/EC [i.15] for information on presumption of conformity and Harmonized Standards or parts thereof the references of which have been published in the Official Journal of the European Union.

The requirements relevant to Directive 1999/5/EC [i.15] are summarized in Annex A.

The present document is part 1 of a multi-part deliverable covering Short Range Devices (SRD) using Ultra Wide Band technology (UWB), as identified below:

- Part 1: "Requirements for Generic UWB Applications";**
- Part 2 "Requirements for UWB location tracking";
- Part 3: "Requirements for UWB devices for road and rail vehicles".

<b>National transposition dates</b>	
Date of adoption of this EN:	8 April 2014
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# Introduction

The present document is part of a set of standards developed by ETSI and is designed to fit in a modular structure to cover all radio and telecommunications terminal equipment within the scope of the R&TTE Directive [i.15]. The modular structure is shown in EG 201 399 [i.1].

## UWB Technologies

The present document provides a generic set of technical requirements covering many different types of UWB technologies used for short range communications. These technologies can be broken down into two groups:

- Impulse based technologies; and
- RF carrier based technologies.

The following clauses give a brief overview of these UWB technologies and their associated modulation techniques.

### Impulse technology

Impulse derived UWB technology consists of a series of impulses created from a dc voltage step whose rise time can be modified to provide the maximum useful number of spectral emission frequencies. This derived impulse can then be suitably modified by the use of filters to locate the resulting waveform within a specific frequency spectrum range. This filter can be a standalone filter or incorporated into an antenna design to reduce emissions outside the designated frequency spectrum.

Modulation techniques include pulse positioning in time, pulse suppression and other techniques to convey information.

### RF carrier based technology

RF carrier based UWB technology is based upon classical radio carrier technology suitably modulated by a baseband modulating process. The modulating process should produce a bandwidth in excess of 50 MHz to be defined as UWB.

Different modulating processes are used to transmit the data information to the receiver and can consist of a series of single hopping frequencies or multi-tone carriers.

This technology can be used for both direct and non-direct line of sight communications, any reflected or time delayed emissions being suppressed by the receiver input circuits.

# 1 Scope

The present document applies to transceivers, transmitters and receivers utilizing Ultra WideBand (UWB) technologies and used for short range applications.

The present document applies to impulse, modified impulse and RF carrier based UWB communication technologies.

The present document applies to fixed (indoor only), mobile or portable applications, e.g.:

- stand-alone radio equipment with or without its own control provisions;
- plug-in radio devices intended for use with, or within, a variety of host systems, e.g. personal computers, hand-held terminals, etc.;
- plug-in radio devices intended for use within combined equipment, e.g. cable modems, set-top boxes, access points, etc.;
- combined equipment or a combination of a plug-in radio device and a specific type of host equipment.

NOTE: As per the ECC/DEC/(06)04 [i.2], CEPT report 45 [i.17] and Commission Decision 2007/131/EC [i.8] and its amendment the UWB transmitter equipment conforming to the present document is not to be installed at a fixed outdoor location, for use in flying models, aircraft and other forms of aviation. The present document applies to UWB equipment with an output connection used with a dedicated antenna or UWB equipment with an integral antenna.

Equipment covered by the present document operates in accordance with ECC/DEC(06)04 [i.2] "The harmonised conditions for devices using Ultra-Wideband (UWB) technology in bands below 10.6 GHz".

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

**Table 1: Operating frequency bands**

Operating frequency bands	
Transmit	3,1 GHz to 4,8 GHz
Receive	3,1 GHz to 4,8 GHz
Transmit	6,0 GHz to 9 GHz
Receive	6,0 GHz to 9 GHz
NOTE: The UWB radio device can also operate outside of the operating frequency bands shown in the present table provided that the limits in clause 4.2.3, Table 2 are met.	

The present document does not apply to radio equipment for which a specific Harmonized EN applies as such Harmonized EN may specify additional EN requirements relevant to the presumption of conformity under article 3.2 of the R&TTE Directive [i.15].



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## 2 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 at <http://docbox.etsi.org/Reference>.

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

### 2.1 Normative references

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

- [1] Void.
- [2] ETSI TS 102 883 (V1.1.1) (08-2012): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD) using Ultra Wide Band (UWB); Measurement Techniques".
- [3] ETSI TS 102 754 (V1.3.1) (03-2013): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Technical characteristics of Detect And Avoid (DAA) mitigation techniques for SRD equipment using Ultra Wideband (UWB) technology".
- [4] ETSI TR 100 028 (V1.4.1) (all parts) (12-2001): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics".
- [5] ETSI EN 301 489-33 (V1.1.1) (02-2009): "Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 33: Specific conditions for Ultra Wide Band (UWB) communications devices".

### 2.2 Informative references

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] ETSI EG 201 399 (V2.1.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); A guide to the production of candidate Harmonized Standards for application under the R&TTE Directive".
- [i.2] CEPT ECC/DEC/(06)04 of 24 March 2006 amended 9 December 2011: "The harmonised conditions for devices using Ultra-Wideband (UWB) technology in bands below 10.6 GHz".
- [i.3] Void.
- [i.4] Void.
- [i.5] ETSI TR 103 086: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Conformance test procedure for the exterior limit tests in EN 302065-3 UWB applications in the ground based vehicle environment".
- [i.6] Void.
- [i.7] ECC Report 120 (March 2008): "ECC Report on Technical requirements for UWB DAA (Detect and avoid) devices to ensure the protection of radiolocation in the bands 3.1-3.4 GHz and 8.5-9 GHz and BWA terminals in the band 3.4-4.2 GHz".

[i.8] Commission Decision 2007/131/EC of 21 February 2007 on allowing the use of the radio spectrum for equipment using ultra-wideband technology in a harmonised manner in the Community (notified under document number C(2007) 522).

NOTE: This EC Decision is currently under revision based on CEPT report 45 [i.17] and amended ECC/DEC(06)04 [i.2]. The new EC/DEC revision is expected within 2014.

[i.9] Void.

[i.10] Void.

[i.11] CEPT/ERC Recommendation 74-01: "Unwanted emissions in the spurious domain".

[i.12] ETSI TS 102 902 (02-2011): "Electromagnetic compatibility and radio spectrum matters (ERM); Methods, parameters and test procedures for cognitive interference mitigation towards ER-GSM for use by UHF RFID using Detect-And-Avoid (DAA) or other similar techniques".

[i.13] Void.

[i.14] Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations.

[i.15] Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (R&TTE Directive).

[i.16] Directive 98/48/EC of the European Parliament and of the Council of 20 July 1998 amending Directive 98/34/EC laying down a procedure for the provision of information in the field of technical standards and regulations.

[i.17] CEPT report 45: "Report from CEPT to the European Commission in response to the Fifth Mandate to CEPT on ultra-wideband technology to clarify the technical parameters in view of a potential update of Commission Decision 2007/131/EC"; Report approved on 21 June 2013 by the ECC.

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