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STN	**Zariadenia s krátkym dosahom (SRD) Zariadenia rádiového sondovania zeme a stien (GPR/WPR) Harmonizovaná norma pre prístup k rádiovému spektru**	**STN EN 302 066 V2.2.1** 87 2066

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

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

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

Reference
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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.5] 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.

National transposition dates	
Date of adoption of this EN:	9 June 2020
Date of latest announcement of this EN (doa):	30 September 2020
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 March 2021
Date of withdrawal of any conflicting National Standard (dow):	31 March 2022

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

GPR and WPR radars are imaging systems designed to operate while in contact with, or in close proximity to the ground or the wall, and their emissions are directed into the ground or wall (e.g. measured by a proximity sensor or imposed by the mechanical design).

The GPR/WPR applications in the present document are not intended for communications purposes, and the intended signal is not radiated into free space. The emissions into the air resulting from the operation of GPR/WPR imaging systems are defined as those emissions radiated in all directions above the ground from the GPR/WPR equipment, including direct emissions from the housing/structure of the equipment and emissions reflected or passing through the media under inspection (referred in ECC/DEC/(06)08 [i.2] and in the present document as "undesired emissions"); they are therefore dependent on the operational conditions and are meaningful only if the GPR/WPR are coupled with the material being investigated. Figure 1 shows the scenario to be considered for the emissions radiated into the air by GPR/WPR.

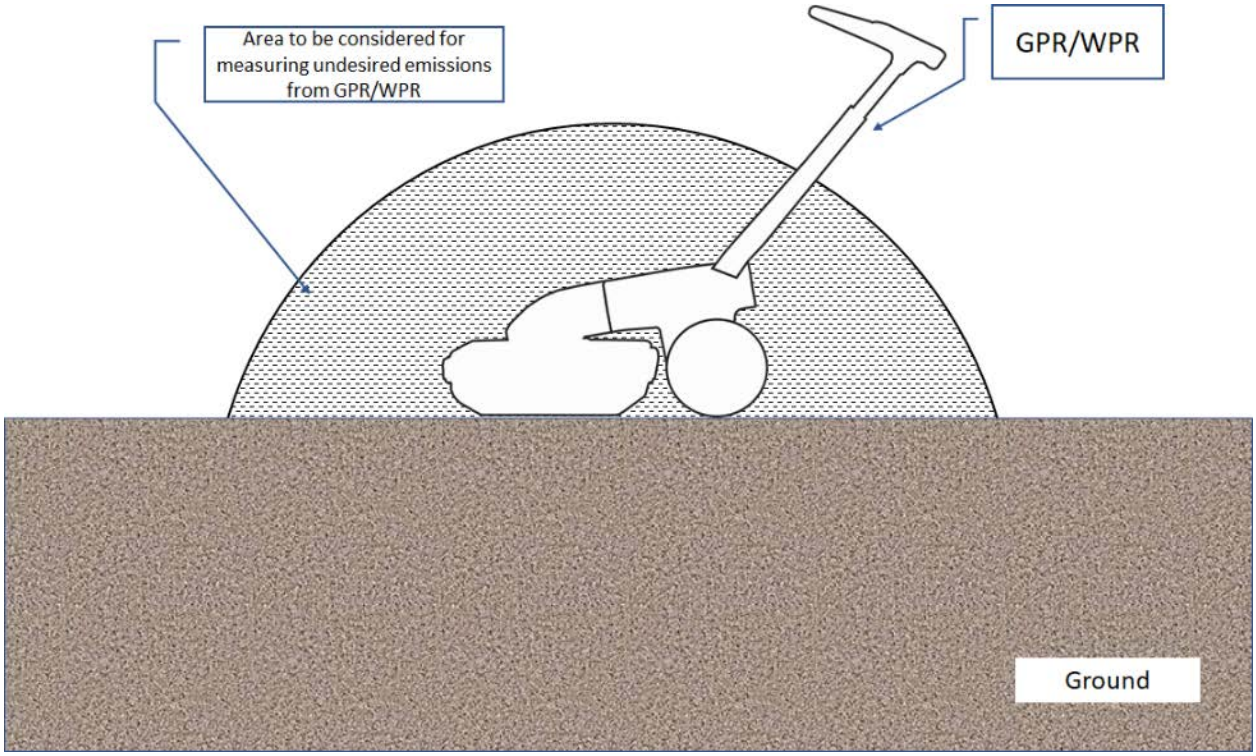

Figure 1: Hatched area around the GPR/WPR shows the emissions to be considered in this clause

1 Scope

The present document specifies the requirements for Ground- and Wall- Probing Radar imaging systems applications. Ground Probing Radars (GPR) and Wall Probing Radars (WPR) are used in survey and detection applications.These do not include radars operated from aircraft or spacecraft.

The present document applies to:

1) Ground Probing Radars (GPR) operating in the frequency range 30 MHz to 12,4 GHz radiating directly downwards into the ground.

2) Wall Probing Radars (WPR) operating in the frequency range 30 MHz to 12,4 GHz radiating directly into a "wall". The "wall" is a building material structure, the side of a bridge, the wall of a mine or another physical structure that absorbs a significant part of the signal transmitted by the radar.

These equipment can either:

1) be fitted with integral antennas and without antenna connector; or

2) use different imaging heads (antennas) with an antenna connector, to allow operation at different operating bandwidths frequencies.

NOTE 1: Equipment covered by the present document operates in accordance with ECC/DEC(06)08 [i.2].

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

Table 1: Permitted ranges of operation

Permitted range of operation	
Transmit	30 MHz to 12,4 GHz
Receive	30 MHz to 12,4 GHz
NOTE 1: Limits in table 2, clause 4.3.4 are to be met. NOTE 2: The frequency usage conditions for GPR/WPR are not fully harmonised in the EU and CEPT. Some National Regulatory Authorities (NRAs) may not have a general frequency allocation for GPR/WPT and may have established individual licensing requirements (e.g. registration of the user). Annex 2 of ECC/DEC/(06)08 [i.2] gives some guidance to administrations.	

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

2 References

2.1 Normative references

References are specific, identified by date of publication and/or edition number or version number. Only the cited version applies.

Referenced documents which are not found to be publicly available in the expected location might be found at https://docbox.etsi.org/Reference/.

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

[1] ETSI EN 303 883 (V1.1.1) (09-2016): "Short Range Devices (SRD) using Ultra Wide Band (UWB); Measurement Techniques".

[2] ETSI TS 103 361 (V1.1.1) (03-2016): "Short Range Devices (SRD) using Ultra Wide Band technology (UWB); Receiver technical requirements, parameters and measurement procedures to fulfil the requirements of the Directive 2014/53/EU".

[3] CENELEC EN 55016-1-1 (March 2010 + A1 October 2010 + A2 September 2014): "Specification for radio disturbance and immunity measuring apparatus and methods; Part 1-1: Radio disturbance and immunity measuring apparatus - Measuring apparatus".

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.

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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] ECC/DEC/(06)08: "ECC Decision of 1 December 2006 on the conditions for use of the radio spectrum by Ground- and Wall- Probing Radar (GPR/WPR) imaging systems".

[i.3] ETSI TS 103 051 (V1.1.1) (08-2011): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Expanded measurement uncertainty for the measurement of radiated electromagnetic fields".

[i.4] Void.

[i.5] 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.6] ETSI EG 203 336 (V1.1.1) (08-2015): "Electromagnetic compatibility and Radio spectrum Matters (ERM); 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] Recommendation ITU-R SM.1755: "Characteristics of ultra-wideband technology".