

STN	Primárny sledovací radar (PSR) Harmonizovaná norma pre prístup k rádiovému spektru Časť 3: Senzory PSR riadenia letovej prevádzky (ATC) pracujúce vo frekvenčnom pásme 8 500 MHz až 10 000 MHz (pásmo X)	STN EN 303 364-3 V1.1.1 87 3364
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Primary Surveillance Radar (PSR); Harmonised Standard for access to radio spectrum; Part 3: Air Traffic Control (ATC) PSR sensors operating in the frequency band 8 500 MHz to 10 000 MHz (X band)

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

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**Primary Surveillance Radar (PSR);
Harmonised Standard for access to radio spectrum;
Part 3: Air Traffic Control (ATC) PSR sensors operating
in the frequency band 8 500 MHz to 10 000 MHz (X band)**

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.

The present document is part 3 of a multi-part deliverable covering Primary Surveillance Radars, as identified below:

- Part 1: "Air Traffic Control (ATC) Primary Surveillance Radar sensors operating in 1 215 MHz to 1 400 MHz frequency band (L band)";
- Part 2: "Air Traffic Control (ATC) Primary Surveillance Radar sensors operating in 2 700 MHz to 3 100 MHz frequency band (S band)";
- Part 3: "Air Traffic Control (ATC) Primary Surveillance Radar sensors operating in 8 500 MHz to 10 000 MHz frequency band (X band)".**

National transposition dates	
Date of adoption of this EN:	17 June 2019
Date of latest announcement of this EN (doa):	30 September 2019
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 March 2020
Date of withdrawal of any conflicting National Standard (dow):	31 March 2020

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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1 Scope

The present document specifies technical characteristics and methods of measurements for monostatic X-band radar sensors intended for the surveillance of airspace traffic with the following characteristics:

- Operating in the frequency range 8 500 MHz to 10 000 MHz utilizing modulated pulses.
- The transceiver-antenna connection is using a hollow metallic rectangular waveguide.
- The antenna is rotating, waveguide-based and passive.
- At the transceiver output an RF-circulator is used.

NOTE 1: Since transceiver and antenna are hollow metallic rectangular waveguide based the frequency range for measurements that needs to be addressed covers 6,56 GHz to 26 GHz. The lower limit of this frequency range is obtained as cut-off frequency of the combination of WR112/R84 taper section and a WR90/R100 Waveguide IEC 60153-2 [i.3]. The upper limit corresponds to the upper limit stated in Table 1 of ERC Recommendation 74-01 [2].

NOTE 2: Since at the transceiver output an RF circulator is used, it is assumed that the transceiver characteristics remain independent from the antenna.

NOTE 3: Multi-static radars are not covered by the present document.

NOTE 4: 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.

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

- [1] ECC Recommendation (02)05 (2012): "Unwanted emissions".
- [2] ERC Recommendation 74-01 (2019): "Unwanted emissions in the spurious domain".
- [3] ITU Radio Regulations (2016).
- [4] Recommendation ITU-R M.1177-4 (04-2011): "Techniques for measurement of unwanted emissions of radar systems".

2.2 Informative references

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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] Merrill I. Skolnik: "Radar Handbook", 2nd Edition, McGraw Hill publications.
- [i.3] IEC 60153-2 (Edition 2.0, 1974): "Hollow metallic waveguides. Part 2: Relevant specifications for ordinary rectangular waveguides".
- [i.4] Recommendation ITU-R SM.1541-6 (08/2015): "Unwanted emissions in the out-of-band domain".
- [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.

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