

Elektromagnetická kompatibilita (EMC), norma na rádiové zariadenia a služby
Časť 15: Osobitné podmienky na komerčne dostupné amatérske rádiové zariadenia
Harmonizovaná norma vzťahujúca sa na základné požiadavky podľa článku 3.1(b) smernice 2014/53/EÚ

STN EN 301 489-15 V2.1.1

87 1489

ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 15: Specific conditions for commercially available amateur radio equipment; Harmonised Standard covering the essential requirements of article 3.1(b) of the Directive 2014/53/EU

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. 11/17

Obsahuje: EN 301 489-15 V2.1.1:2016

STN EN 301 489-15 V2.1.1: 2017

# ETSI EN 301 489-15 V2.1.1 (2016-11)



ElectroMagnetic Compatibility (EMC)
standard for radio equipment and services;
Part 15: Specific conditions for commercially available
amateur radio equipment;
Harmonised Standard covering the essential requirements of
article 3.1(b) of the Directive 2014/53/EU

#### Reference

#### REN/ERM-EMC-344

Keywords

amateur, EMC, harmonised standard, radio

#### **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 - NAF 742 C Association à but non lucratif enregistrée à la Sous-Préfecture de Grasse (06) N° 7803/88

#### Important notice

The present document can be downloaded from: http://www.etsi.org/standards-search

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status.

Information on the current status of this and other ETSI documents is available at

<a href="https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx">https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx</a>

If you find errors in the present document, please send your comment to one of the following services: https://portal.etsi.org/People/CommiteeSupportStaff.aspx

### Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2016.
All rights reserved.

**DECT**<sup>™</sup>, **PLUGTESTS**<sup>™</sup>, **UMTS**<sup>™</sup> and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members. **3GPP**<sup>™</sup> and **LTE**<sup>™</sup> are Trade Marks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

GSM® and the GSM logo are Trade Marks registered and owned by the GSM Association.

# Contents

Intelle	ntellectual Property Rights			
Forew	vord	5		
Moda	l verbs terminology	5		
1	Scope			
1	-			
2	References			
2.1	Normative references			
2.2	Informative references	6		
3	Definitions, symbols and abbreviations	7		
3.1	Definitions			
3.2	Symbols	7		
3.3	Abbreviations	7		
4	Test conditions	8		
4.0	Introduction			
4.1	General			
4.2	Arrangements for test signals	8		
4.2.0	Introduction	8		
4.2.1	Arrangements for test signals at the input of transmitters			
4.2.2	Arrangements for test signals at the output of transmitters			
4.2.3	Arrangements for test signals at the input of receivers			
4.2.4	Arrangements for test signals at the output of receivers			
4.2.5	Arrangements for testing transmitter and receiver together (as a system)			
4.3 4.3.0	RF exclusion band of radio communications equipment			
4.3.1	Exclusion band for receivers or the receiver part of transceivers			
4.3.2	Exclusion band for transmitters or the transmitter part of transceivers			
4.3.2.1	<u>*</u>			
4.3.2.2				
4.4	Narrowband responses of receivers or receivers which are part of transceivers			
4.5	Normal test modulation	11		
4.5.1	Transmitters			
4.5.2	Receivers			
4.5.3	RF amplifiers and transverters	12		
5	Performance assessment			
5.1	General			
5.2	Equipment which can provide a continuous communications link			
5.3	Equipment which does not provide a continuous communications link			
5.4 5.5	Ancillary equipment			
	Equipment classification			
6	Performance criteria	13		
6.0	Introduction			
6.1	Performance criteria for primary user functions			
6.1.0	Introduction.			
6.1.1 6.1.2	General performance criteria (primary user functions)			
6.1.3	Performance criteria B for transient phenomena and short voltage dips (primary user functions)			
6.1.4	Performance criteria C for long voltage dips and interruptions (primary user functions)			
6.2	Performance criteria for secondary user functions			
6.3	Performance criteria for equipment which does not provide a continuous communication link			
6.4	Performance criteria for ancillary equipment tested on a stand alone basis			
7	Applicability overview tables	17		
7.1	EMC Emission			
7.1.1	General			

#### STN EN 301 489-15 V2.1.1: 2017

#### 4

# ETSI EN 301 489-15 V2.1.1 (2016-11)

7.1.2	Special condition	S	17
7.2	Immunity	S	17
7.2.1	General		17
7.2.2	Special condition	s	18
Annex A	A (normative):	Relationship between the present document and the essential requirements of Directive 2014/53/EU	19
Annex B (informative):		Examples of amateur radio equipment within the scope of the present document	21
B.1 A	amateur radio equipm	ent which is commercially available	21
History			22

# Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is 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 Web server (https://ipr.etsi.org/).

Pursuant to the ETSI IPR Policy, no investigation, 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.

### **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.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 15 of a multi-part deliverable. Full details of the entire series can be found in part 1 [1].

National transposition dates				
Date of adoption of this EN:	21 July 2016			
Date of latest announcement of this EN (doa):	31 October 2016			
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 April 2017			
Date of withdrawal of any conflicting National Standard (dow):	30 April 2018			

### 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 <u>ETSI Drafting Rules</u> (Verbal forms for the expression of provisions).

"must" and "must not" are NOT allowed in ETSI deliverables except when used in direct citation.

# 1 Scope

The present document, together with ETSI EN 301 489-1 [1], covers the assessment of commercially available amateur radio equipment, and associated ancillary equipment, in respect of ElectroMagnetic Compatibility (EMC).

Technical specifications related to the antenna port and emissions from the enclosure port of commercially available amateur radio equipment are not included in the present document. Such technical specifications are found in the relevant product standard ETSI EN 301 783 [i.2] for the effective use of the radio spectrum.

The present document specifies the applicable EMC tests, the methods of measurement, the limits and the performance criteria for radio equipment intended for use by radio amateurs within the meaning of article 1, definition 53 of the Radio Regulations [i.3] and associated ancillary equipment, which is commercially available.

Examples of amateur radio equipment covered by the present document are given in annex B.

The provisions of the present document apply to amateur radio equipment manufactured commercially either as ready-to-use equipment, modules, or components having an intrinsic functionality for the customer.

The expression "amateur radio equipment" in the context of the present document is taken to mean "commercially available amateur radio equipment" only.

In case of differences (for instance concerning special conditions, definitions, abbreviations) between the present document and ETSI EN 301 489-1 [1], the provisions of the present document take precedence.

The environment classification and the emission and immunity requirements used in the present document are as stated in ETSI EN 301 489-1 [1], except for any special conditions included in the present document. The applicable environments referred to in ETSI EN 301 489-1 [1] where equipment covered by the scope of the present document may be used, are to be declared by the manufacturer.

### 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 at <a href="https://docbox.etsi.org/Reference/">https://docbox.etsi.org/Reference/</a>.

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 301 489-1 (V2.1.1) (11-2016): "ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU and the essential requirements of article 6 of Directive 2014/30/EU".

### 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 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] ETSI EN 301 783: "Commercially available amateur radio equipment; Harmonised standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU".
 [i.3] ITU Radio Regulations.
 [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.

# koniec náhľadu – text ďalej pokračuje v platenej verzii STN