

STN	Družicové zemské stanice a systémy (SES). Harmonizovaná norma na prenosné zemské stanice družicového zberu správ (SNG TES) pracujúce vo frekvenčných pásmach 11-12/13-14 GHz, vzťahujúca sa na základné požiadavky podľa článku 3.2 smernice 2014/53/EÚ.	STN EN 301 430 V2.1.1
		87 1430

Satellite Earth Stations and Systems (SES); Harmonised Standard for Satellite News Gathering Transportable Earth Stations (SNG TES) operating in the 11 GHz to 12 GHz/13 GHz to 14 GHz frequency bands covering the essential requirements of article 3.2 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. 01/17

Obsahuje: EN 301 430 V2.1.1:2016

124097

Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, 2017
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy
rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

ETSI EN 301 430 V2.1.1 (2016-05)



**Satellite Earth Stations and Systems (SES);
Harmonised Standard for Satellite News Gathering
Transportable Earth Stations (SNG TES)
operating in the 11 GHz to 12 GHz/13 GHz to 14 GHz
frequency bands covering the essential requirements
of article 3.2 of the Directive 2014/53/EU**

Reference

REN/SES-00382

Keywords

earth station, regulation, satellite, SNG

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
<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

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™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.
3GPP™ and **LTE™** 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

Intellectual Property Rights	5
Foreword.....	5
Modal verbs terminology.....	5
Introduction	5
1 Scope	7
2 References	8
2.1 Normative references	8
2.2 Informative references.....	8
3 Definitions, symbols and abbreviations	9
3.1 Definitions	9
3.2 Symbols.....	10
3.3 Abbreviations	10
4 Technical requirement specifications	11
4.1 Environmental profile.....	11
4.2 Conformance requirements	11
4.2.1 Off-axis EIRP emission density within the band(s)	11
4.2.1.0 General	11
4.2.1.1 Justification	11
4.2.1.2 Specification.....	11
4.2.1.3 Conformance tests	11
4.2.2 Off-axis spurious radiation	12
4.2.2.1 Justification	12
4.2.2.2 Specification.....	12
4.2.2.3 Conformance tests	13
4.2.3 On-axis spurious radiation	13
4.2.3.1 Justification	13
4.2.3.2 Specification.....	13
4.2.3.3 Conformance tests	13
4.2.4 Mechanical (antenna pointing)	13
4.2.4.1 Justification	13
4.2.4.2 Specification.....	13
4.2.4.3 Conformance tests	14
4.2.5 Receive antenna off-axis gain pattern	14
4.2.5.1 Justification	14
4.2.5.2 Specification.....	14
4.2.5.3 Conformance tests	14
4.2.6 Blocking performance.....	14
4.2.6.1 Justification	14
4.2.6.2 Specification.....	14
4.2.6.3 Conformance tests	15
4.2.7 Adjacent Signal Selectivity.....	15
4.2.7.1 Justification	15
4.2.7.2 Specification.....	15
4.2.7.3 Conformance tests	15
5 Testing for compliance with technical requirements.....	15
5.1 Environmental conditions for testing	15
5.2 Essential radio test suites.....	15
6 Test methods	16
6.1 General	16
6.2 Off-axis EIRP density within the band.....	16
6.2.0 General.....	16
6.2.1 Test method	16

6.2.1.1	General	16
6.2.1.2	Transmit output power density.....	17
6.2.1.2.1	General	17
6.2.1.2.2	Test site.....	17
6.2.1.2.3	Method of measurement	17
6.2.1.3	Antenna transmit gain	17
6.2.1.3.1	General	17
6.2.1.3.2	Test site.....	18
6.2.1.3.3	Method of measurement	18
6.2.1.4	Antenna transmit radiation patterns	19
6.2.1.4.1	General	19
6.2.1.4.2	Test site.....	19
6.2.1.4.3	Method of measurement	19
6.2.1.4.4	Co-polar radiation pattern - azimuth.....	19
6.2.1.4.5	Co-polar radiation pattern - elevation.....	20
6.2.1.4.6	Crosspolar radiation pattern - azimuth	21
6.2.1.4.7	Crosspolar radiation pattern - elevation.....	21
6.2.2	Computation of results.....	22
6.3	Off-axis spurious radiation	22
6.3.1	Test method	22
6.3.1.0	General	22
6.3.1.1	Up to 1,0 GHz	22
6.3.1.1.1	Test site.....	22
6.3.1.1.2	Measuring receivers.....	23
6.3.1.1.3	Procedure.....	23
6.3.1.2	Above 1,0 GHz	23
6.3.1.2.1	General	23
6.3.1.2.2	Identification of the significant frequencies of spurious radiation	23
6.3.1.2.3	Measurement of radiated power levels of identified spurious radiation	24
6.3.1.2.4	Measurement of conducted spurious radiation at the antenna flange	25
6.4	On-axis spurious radiation.....	26
6.4.1	Test method	26
6.4.1.1	General	26
6.4.1.2	Method of measurement.....	26
6.5	Mechanical (antenna pointing)	26
6.5.1	Test method	26
6.6	Receive antenna off-axis gain pattern	27
6.6.1	Test Method.....	27
6.6.1.1	Test site	27
6.6.1.2	Method of measurement.....	27
6.7	Blocking performance	28
6.7.1	Test method	28
6.8	Adjacent Signal Selectivity	28
7	Test methods for SNG TES subsystems.....	29
7.1	General	29
7.2	Antenna subsystem replacement	29
Annex A (normative):	Relationship between the present document and the essential requirements of Directive 2014/53/EU	31
Annex B (informative):	Pointing stability methodology	33
Annex C (informative):	Bibliography.....	34
History		35

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 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 Satellite Earth Stations and Systems (SES).

The present document has been prepared under the Commission's standardisation request C(2015) 5376 final [i.2] 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 [6].

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:	16 May 2016
Date of latest announcement of this EN (doa):	31 August 2016
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	28 February 2017
Date of withdrawal of any conflicting National Standard (dow):	28 February 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 [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

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 equipment within the scope of the Directive 2014/53/EU [6]. The modular structure is shown in ETSI EG 201 399 [i.1].

The present document is based on ETSI TBR 030 [5].

The determination of the parameters of the user earth stations using a given geo-stationary satellite for the protection of the spectrum allocated to that satellite, is considered to be under the responsibility of the satellite operator or the satellite network operators. For this reason the requirement on the cross polarization discrimination which was in ETSI TBR 30 [5] has not been copied in the present document and intermodulation limits inside the transmit frequency band(s) are to be determined by system design and are subject to satellite operator specifications.

The requirements have been selected to ensure an adequate level of compatibility with other radio services. The levels, however, do not cover extreme cases which may occur in any location but with a low probability of occurrence.

The present document may not cover those cases where a potential source of interference which is producing individually repeated transient phenomena or a continuous phenomenon is present, e.g. a radar or broadcast site in the near vicinity. In such a case it may be necessary to use special protection applied to either the source of interference, or the interfered part or both.

The present document does not contain any requirement, recommendation or information about the installation of the SNG TESSs.

1 Scope

The present document applies to Satellite News Gathering (SNG) Transportable Earth Stations (TESs) which have the following characteristics:

- the SNG TESs are designed for Satellite News Gathering (SNG) which can be either an unforeseen or pre-planned activity;
- SNG TES is capable of transmitting television signals and associated audio or programme audio only towards a satellite positioned on the geostationary orbit. The modulation method may be either analogue or digital. Such transmissions are point-to-point or point-to-multipoint but not for general broadcast reception;
- the SNG TESs are designed for relocation at any time to a different fixed operating location but are not intended to operate during the relocation period. The SNG TESs can be either vehicle mounted or packed for transportation. The SNG TESs considered in the present document are those designed to operate whilst stationary;
- the SNG TESs are operating in the following bands allocated to the Fixed Satellite Services (FSS):
 - 10,70 GHz to 11,70 GHz (space-to-earth, shared);
 - 12,50 GHz to 12,75 GHz (space-to-earth, exclusive);
 - 12,75 GHz to 13,25 GHz (earth-to-space, shared);
 - 13,75 GHz to 14,25 GHz (earth-to-space, exclusive);
 - 14,25 GHz to 14,50 GHz (earth-to-space, shared).
- frequencies could be selected from through the entire frequency range or be restricted to a range completely enclosed within those bands. These bands are partly shared between FSS and Fixed Service (FS);
- at present the ITU Radio Regulations [3] restrict the use of the 13,75 GHz to 14,00 GHz band to earth stations having an antenna diameter of 4,5 m or greater and having a transmitting EIRP between 68 dBW and 85 dBW;
- the SNG TESs use linear polarization;
- the SNG TESs operate through a geostationary satellite at least 3° away from any other geostationary satellite operating in the same frequency band and covering the same area;
- the SNG TES antenna diameter does not exceed 5 m, or equivalent corresponding aperture;
- the SNG TESs are designed for attended operation.

The present document applies to the SNG TES with its ancillary equipment and its various terrestrial ports, and when operated within the boundary limits of the operational environmental profile declared by the applicant.

The present document is intended to cover the provisions of Directive 2014/53/EU [6] (RE Directive) article 3.2, which states that "... *radio equipment shall be so constructed that it both effectively uses and supports the efficient use of radio spectrum in order to avoid harmful interference.*"

In addition to the present document, other ENs that specify technical requirements in respect of essential requirements under other parts of article 3 of the Directive 2014/53/EU [6]) may apply to equipment within the scope of the present document.

NOTE: A list of such ENs is included on the ETSI web site.

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 <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.

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

- [1] Void.
- [2] CISPR 16-1 (all parts) (2015): "Specification for radio disturbance and immunity measuring apparatus and methods - Part 1: Radio disturbance and immunity measuring apparatus" (annex G: Validation of the open area test site for the frequency range of 30 MHz to 1 000 MHz).
- [3] ITU Radio Regulations (2012).
- [4] Void.
- [5] ETSI TBR 030 (Edition 1) (12-1997): "Satellite Earth Stations and Systems (SES); Satellite News Gathering (SNG) Transportable Earth Stations (TES) operating in the 11-12/13-14 GHz frequency bands".
- [6] 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).

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] ETSI EG 201 399: "Electromagnetic compatibility and Radio spectrum Matters (ERM); A guide to the production of Harmonized Standards for application under the Radio & Telecommunication Terminal Equipment Directive 1999/5/EC (R&TTE) and a first guide on the impact of the Radio Equipment Directive 2014/53/EU (RED) on Harmonized Standards".
- [i.2] 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