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STN	**Družicové zemské stanice a systémy (SES) Harmonizovaná norma na koncovú stanicu s veľmi malou apertúrou (VSAT) Družicové zemské stanice určené len na vysielanie, vysielanie/príjem alebo len na príjem, pracujúce vo frekvenčných pásmach 11/12/14 GHz, vzťahujúce sa na základné požiadavky podľa článku 3.2 smernice 2014/53/EÚ**	**STN EN 301 428 V2.1.2** 87 1428

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. 09/18

Obsahuje: EN 301 428 V2.1.2:2017

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ETSI EN 301 428 V2.1.2 (2017-05)

**Satellite Earth Stations and Systems (SES);
Harmonised Standard for Very Small
Aperture Terminal (VSAT);
Transmit-only, transmit/receive or receive-only satellite
earth stations operating in the 11/12/14 GHz frequency bands
covering the essential requirements of
article 3.2 of Directive 2014/53/EU**

Reference
REN/SES-00429

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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 [i.5].

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 latest announcement of this EN (doa):	31 August 2017
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	28 February 2018
Date of withdrawal of any conflicting National Standard (dow):	28 February 2019

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

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 under the RE Directive [i.5]. The modular structure is shown in ETSI EG 201 399 [i.1].

Figure 1: Void

Remarks on the present document

The present document allows the choice of either a class A Control and Monitoring system or a class B Control and Monitoring system. The class B system is more suitable for networks comprising very many terminals.

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 028 [i.4] has not been copied in the present document and inter-modulation limits inside the band 14,0 GHz to 14,5 GHz 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 VSAT.

All parts of the indoor unit related to reception, processing and presentation of the received information except the control channel are not within the scope of the present document. The syntax of the control channel messages is outside the scope of the present document.

The present document is therefore intended to cover the provisions of Directive 2014/53/EU [i.5] (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*".

Recital 10 of Directive 2014/53/EU [i.5] states that "*In order to ensure that radio equipment uses the radio spectrum effectively and supports the efficient use of radio spectrum, radio equipment should be constructed so that: in the case of a transmitter, when the transmitter is properly installed, maintained and used for its intended purpose it generates radio waves emissions that do not create harmful interference, while unwanted radio waves emissions generated by the transmitter (e.g. in adjacent channels) with a potential negative impact on the goals of radio spectrum policy should be limited to such a level that, according to the state of the art, harmful interference is avoided; and, in the case of a receiver, it has a level of performance that allows it to operate as intended and protects it against the risk of harmful interference, in particular from shared or adjacent channels, and, in so doing, supports improvements in the efficient use of shared or adjacent channels.*"

Recital 11 of Directive 2014/53/EU [i.5] states that "*Although receivers do not themselves cause harmful interference, reception capabilities are an increasingly important factor in ensuring the efficient use of radio spectrum by way of an increased resilience of receivers against harmful interference and unwanted signals on the basis of the relevant essential requirements of Union harmonisation legislation.*"

As a consequence, the present document includes both transmitting and receiving parameters aiming to maximize the efficient use of radio spectrum.

1 Scope

The present document specifies technical characteristics and methods of measurements for Very Small Aperture Terminals (VSATs) equipment which have the following characteristics:

- The VSAT is operating in one or more frequency ranges in the part of the following bands allocated exclusively to the Fixed Satellite Services (FSS):
  - 14,00 GHz to 14,25 GHz (earth-to-space);
  - 12,50 GHz to 12,75 GHz (space-to-earth);

  or in the shared parts of the following bands, allocated to the FSS and Fixed Services (FS):
  - 14,25 GHz to 14,50 GHz (earth-to-space);
  - 10,70 GHz to 11,70 GHz (space-to-earth).
- The VSAT uses linear polarization.
- The VSAT operates 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 VSAT antenna diameter does not exceed 3,8 m, or equivalent effective area.
- The VSAT is either:
  - a transmit only VSAT: designed for transmission only of radio-communications signals in any of the frequency bands (earth-to-space) specified above; or
  - a transmit and receive VSAT: designed for transmission and reception of radio-communications signals in any of the frequency bands specified above; or
  - a receive only VSAT: designed for reception only of radio-communications signals in any of the frequency bands (space-earth) specified above.
- The VSAT is designed usually for unattended operation.
- The VSAT is operating as part of a satellite network (e.g. star, mesh or point-to-point) used for the distribution and/or exchange of information between users.
- The transmit-only and transmit-and-receive VSAT is controlled and monitored by a Centralized Control and Monitoring Function (CCMF). The CCMF is outside the scope of the present document.

The present document applies to the VSAT 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 and when installed as required by the applicant by declaration or in the user documentation.

The present document is intended to cover the provisions of Directive 2014/53/EU [i.5] (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 spectrum in order to avoid harmful interference*".

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/.

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 16-1-5 (2014): "Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-5: Radio disturbance and immunity measuring apparatus - Antenna calibration sites and reference test sites for 5 MHz to 18 GHz".

[3] Void.

[4] Void.

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.

[i.3] ETSI TR 102 375: "Satellite Earth Stations and Systems (SES); Guidelines for determining the parts of satellite earth station antenna radiation patterns concerned by the geostationary satellite orbit protection".

[i.4] ETSI TBR 028: "Satellite Earth Stations and Systems (SES); Very Small Aperture Terminal (VSAT); Transmit-only, transmit/receive or receive-only satellite earth stations operating in the 11/12/14 GHz frequency bands".

[i.5] 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).