SLOVENSKI STANDARD
SIST EN 300 487 V2.1.2:2017

01-januar-2017

Satelitske zemeljske postaje in sistemi (SES) - Harmonizirani standard, ki zajema bistvene zahteve člena 3.2 direktive 2014/53/EU, za sprejemne mobilne zemeljske postaje (ROMES), ki zagotavljajo podatkovne komunikacije in delujejo v frekvenčnem pasu 1,5 GHz - Specifikacije za radiofrekvenčno (RF) območje

Satellite Earth Stations and Systems (SES) - Harmonised Standard for Receive-Only Mobile Earth Stations (ROMES) providing data communications operating in the 1,5 GHz frequency band - Radio Frequency (RF) specifications covering the essential requirements of article 3.2 of the Directive 2014/53/EU

Ta slovenski standard je istoveten z: **ETSI EN 300 487 V2.1.2 (2016-11)**

ICS:

33.060.30	Radiorelejni in fiksni satelitski komunikacijski sistemi	Radio relay and fixed satellite communications systems

SIST EN 300 487 V2.1.2:2017 **en**

ETSI EN 300 487 V2.1.2 (2016-11)

Satellite Earth Stations and Systems (SES);
Harmonised Standard for Receive-Only Mobile Earth Stations (ROMES) providing data communications operating in the 1,5 GHz frequency band;
Radio Frequency (RF) specifications covering the essential requirements of article 3.2 of the Directive 2014/53/EU

Reference
REN/SES-00377

Keywords
data, earth station, LMSS, MES, mobile, RO, satellite

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Sous-Préfecture de Grasse (06) N° 7803/88

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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.1] 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.2].

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 C.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:	12 September 2016
Date of latest announcement of this EN (doa):	31 December 2016
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 June 2017
Date of withdrawal of any conflicting National Standard (dow):	30 June 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 intended to cover the provisions of Directive 2014/53/EU [i.2] (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.2] 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 channel*".

Recital 11 of Directive 2014/53/EU [i.2] 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 applies to the Receive-Only Mobile Earth Stations (ROMES) radio equipment operating under the Land Mobile Satellite Service (LMSS), in the frequency band 1 518 MHz to 1 559 MHz (space-to-earth bands).

The ROMESs operate as part of a satellite system providing one-way data communications.

ROMESs could have several configurations, including:

- either Portable Equipment (PE) or vehicle Installed Equipment (IE);
- a number of modules including a display/control interface to the user.

The present document is intended to cover the provisions of Directive 2014/53/EU [i.2] (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 [i.2] may apply to equipment within the scope of the present document.

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.

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

[1] Void.

[2] ETSI ETS 300 133-5 (Edition 1) (07-1992): "Paging Systems (PS); Enhanced Radio MEssage System (ERMES); Part 5: Receiver conformance specification".

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] 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.2] 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.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

in-band signals: signals which are located in the operating band plus an offset of 10 MHz outside this operating band

operating frequency band: frequency band over which the ROMES is capable of operation

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

BW	BandWith
CW	Continuous Wave
EC	European Commission
EFTA	European Free Trade Association
EIRP	Equivalent Isotropically Radiated Power
ETS	European Telecommunication Standard
EUT	Equipment Under Test
IE	Installed Equipment
LMSS	Land Mobile Satellite Service
LTE	Long Term Evolution
MSS	Mobile Satellite Service
PE	Portable Equipment
RF	Radio Frequency
ROMES	Receive-Only Mobile Earth Station
SNR	Signal to Noise Ratio
STE	Special Test Equipment

4 Test conditions

4.1 Test voltages

The nominal and extreme operational power supply voltages shall be stated by the manufacturer.

4.2 Test report

The test report shall contain:

- the results of the tests;
- all parameters and operational conditions;
- the value of the highest frequency conversion oscillator.

4.3 Special Test Equipment (STE)

To enable the tests specified in the present document to be carried out, the use of STE, supplied by the manufacturer or system provider, may be necessary. Since the STE will be specific for the particular equipment, it is not possible to provide detailed specifications in the present doucment. However, the following baseline is provided:

- the STE shall enable the ROMES to tune to every channel in the operating frequency band, to enable spurious emissions to be measured;
- if the connection of the STE affects any of the parameters specified in the present doucment then the effects shall clearly be stated by the manufacturer.

4.4 Equipment Under Test (EUT)

The EUT shall include all units necessary for the intended operation.

5 RF emission limits

Purpose:

To protect terrestrial and satellite radio services from emissions caused by ROMESs to which the present document applies.

Specification:

The radiated power from the equipment, including its antenna, shall not exceed the limits in table 1.

Table 1

Frequency range (MHz) (see note 1)	EIRP limit (dBpW) (see note 1)	Measurement bandwidth (kHz)
30,0 - 1 000,0	33	100
1 000,0 - 1 518,0	43 (see note 2)	100
1 518,0 - 1 559,0	17	3
1 559,0 - 12 750,0	43 (see note 2)	100
12 750,0 - 21 200,0	48 (see note 3)	100
21 200,0 - 40 000,0	60	100
NOTE 1: The lower limits shall apply at the transition frequency. NOTE 2: These figures shall be 48 dBpW prior to 1st January 1997. NOTE 3: This figure shall be 54 dBpW prior to 1st January 1997.		

Verification:

All RF tests in this clause shall be carried out with the test conditions given in annex A.

The equipment shall be tested according to the test procedure given in annex B. The upper frequency to which tests shall be performed shall be at least the 10th harmonic of the highest frequency conversion oscillator or ten times the highest operational frequency, whichever is greater.

6 Receiver Performance Requirements

6.1 General

This clause shall apply for all ROMES.