SLOVENSKI STANDARD
SIST EN 301 489-20 V2.1.1:2019

01-junij-2019

Standard elektromagnetne združljivosti (EMC) za radijsko opremo in storitve - 20. del: Posebni pogoji za mobilne zemeljske postaje (MES) v okviru mobilnih satelitskih storitev (MSS) - Harmonizirani standard, ki zajema bistvene zahteve člena 3.1(b) direktive 2014/53/EU

ElectroMagnetic Compatibility (EMC) standard for radio equipment and services - Part 20: Specific conditions for Mobile Earth Stations (MES) used in the Mobile Satellite Services (MSS) - Harmonised Standard covering the essential requirements of article 3.1 (b) of Directive 2014/53/EU

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 301 489-20 V2.1.1:2019
https://standards.iteh.ai/catalog/standards/sist/d1da00c1-1e38-45db-b3b6-3a33901e707c/sist-en-301-489-20-v2-1-1-2019

Ta slovenski standard je istoveten z: **ETSI EN 301 489-20 V2.1.1 (2019-04)**

ICS:

33.060.01	Radijske komunikacije na splošno	Radiocommunications in general
33.070.40	Satelit	Satellite
33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general

SIST EN 301 489-20 V2.1.1:2019 **en**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

SIST EN 301 489-20 V2.1.1:2019

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 301 489-20 V2.1.1:2019
https://standards.iteh.ai/catalog/standards/sist/d1da00c1-1e38-45db-b3b6-3a33901e707c/sist-en-301-489-20-v2-1-1-2019

SIST EN 301 489-20 V2.1.1:2019

ETSI EN 301 489-20 V2.1.1 (2019-04)

ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 20: Specific conditions for Mobile Earth Stations (MES) used in the Mobile Satellite Services (MSS); Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 301 489-20 V2.1.1:2019
https://standards.iteh.ai/catalog/standards/sist/d1da00c1-1e38-45db-b3b6-

SIST EN 301 489-20 V2.1.1:2019

Reference
REN/ERM-EMC-366-20

Keywords
earth station, EMC, harmonised standard, MSS, radio, regulation, satellite, testing

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Important notice

SIST EN 301 489-20 V2.1.1:2019
https://standards.iteh.ai/catalog/standards/sist/d1da00c1-1e38-45db-b3b6-3a3a9a01e707/sist-en-301-489-20-v2.1.1-2019

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 prevailing version of an ETSI deliverable is the one made publicly available in PDF format at www.etsi.org/deliver.

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.

© ETSI 2019.
All rights reserved.

DECT™, **PLUGTESTS**™, **UMTS**™ and the ETSI logo are trademarks of ETSI registered for the benefit of its Members.
3GPP™ and **LTE**™ are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.
oneM2M™ logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners.
GSM® and the GSM logo are trademarks registered and owned by the GSM Association.

SIST EN 301 489-20 V2.1.1:2019

Contents

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 301 489-20 V2.1.1:2019
https://standards.iteh.ai/catalog/standards/sist/d1da00c1-1e38-45db-b3b6-23900e707c/sist-en-301-489-20-v2.1.1-2019

SIST EN 301 489-20 V2.1.1:2019

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 301 489-20 V2.1.1:2019
https://standards.iteh.ai/catalog/standards/sist/d1da00c1-1e38-45db-b3b6-3a33901e707c/sist-en-301-489-20-v2-1-1-2019

SIST EN 301 489-20 V2.1.1:2019

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables 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.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

Foreword

This Harmonised European Standard (EN) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

iTeh STANDARD PREVIEW
(standards.iteh.ai)

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.1].

SIST EN 301 489-20 V2.1.1:2019
https://standards.iteh.ai/catalog/standards/sist/d1da00c1-1e38-45db-b3b6-3a33901e707c/sist-en-301-489-20-v2-1-1-2019

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 20 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:	15 January 2018
Date of latest announcement of this EN (doa):	31 July 2019
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 January 2020
Date of withdrawal of any conflicting National Standard (dow):	31 January 2021

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.

SIST EN 301 489-20 V2.1.1:2019

1 Scope

The present document, together with ETSI EN 301 489-1 [1], covers the assessment of Mobile Earth Stations (MES) as defined in annex B used within Satellite radio services, and ancillary equipment in respect of ElectroMagnetic Compatibility (EMC).

Technical specifications related to the antenna port and emissions from the enclosure port of the equipment are not included in the present document. Such technical specifications are found in the relevant product standards for the effective use of the radio spectrum.

The present document specifies the applicable test conditions, performance assessment and performance criteria for MESs and for the associated ancillary equipment.

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 environmental 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 environment(s) referred to in ETSI EN 301 489-1 [1] where the MES may be used, should be declared by the manufacturer.

For a multimode radio station, the present document only applies to the radio station when operated in the Mobile Satellite Service mode.

NOTE: The relationship between the present document and essential requirements of article 3.1(b) of Directive 2014/53/EU [i.1] is given in annex A.

iTeh STANDARD PREVIEW

2 References

(standards.iteh.ai)

2.1 Normative references

SIST EN 301 489-20 V2.1.1:2019
https://standards.iteh.ai/catalog/standards/sist/d1da00c1-1e38-45db-b3b6-3a33901e707c/sist-en-301-489-20-v2-1-1-2019

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] ETSI EN 301 489-1 (V2.2.0) (03-2017): "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] ITU-R Radio Regulations (2016).

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.

SIST EN 301 489-20 V2.1.1:2019

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] 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.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ETSI EN 301 489-1 [1] and the following apply:

carrier-on state (allocated a channel): state of an MES when it is transmitting a signal in a continuous or a non-continuous mode

carrier-off state (idle mode): state of an MES when it is powered-on but not transmitting a signal, i.e. not in a carrier-on state

iTeh STANDARD PREVIEW

host equipment: any equipment which has complete user functionality when not connected to the MES, and to which connection is necessary for the MES to offer additional functionality

(standards.iteh.ai)

Installable Equipment (IE), Internally Mounted Equipment (IME) and Externally Mounted Equipment (EME): equipment which is intended to be installed in a vehicle

SIST EN 301 489-20 V2.1.1:2019
https://standards.iteh.ai/catalog/standards/sist/d1da00c1-1e38-45db-b3b6-3a3b901e707c/sist-en-301-489-20-v2.1.1-2019

NOTE: An IE may consist of one or several modules. The IE is composed of modules intended to be externally mounted and declared by the manufacturer as Externally Mounted Equipment (EME). The remaining module(s) are defined as Internally Mounted Equipment (IME).

multimode MES: equipment that accommodates radio stations of different radio systems

occupied bandwidth: See ITU-R Radio Regulations [2], part A, chapter 1, Terminology RR 147.

Portable Equipment (PE): equipment generally intended to be self-contained, free standing and portable

NOTE 1: A PE would normally consist of a single module, but may consist of several interconnected modules.

NOTE 2: More than one of the equipment classifications can apply to certain equipment, as described in clause 5.4, dependent upon the manufacturer's declaration of normal intended use.

transmission disabled state: state of an MES when it is not authorized to transmit by the Network Control Facilities (NCF)

3.2 Abbreviations

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

CP	performance criteria for Continuous Phenomena
EMC	ElectroMagnetic Compatibility
EME	Externally Mounted Equipment
EUT	Equipment Under Test
F-MES	Fixed MES
IE	Installable Equipment
IME	Internally Mounted Equipment
LBRDC	Low Bit Rate Data Communication

SIST EN 301 489-20 V2.1.1:2019

LEO	Low Earth Orbit
MES	Mobile Earth Station
MSS	Mobile Satellite Service
NCF	Network Control Facilities
PCN	Personal Communication Network
PE	Portable Equipment
PEP	Peak Envelope Power
P-MES	Portable MES
QTMA	Quality of Transmission Measurement Apparatus
RF	Radio Frequency
S-PCN	Satellite Personal Communications Network
STE	Special Test Equipment
TP	performance criteria for Transient Phenomena
V-MES	Vehicle mounted MES

4 Test conditions

4.1 General

For the purposes of the present document, the test conditions of ETSI EN 301 489-1 [1], clause 4, shall apply as appropriate. Further product related test conditions for MES are specified in the present document.

For MESs with ancillary equipment and/or various ports, the number of test configurations shall be determined. The assessment shall include sufficient representative configurations of the MES to adequately exercise the equipment. These configurations shall be recorded in the test report.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

In the following clauses, the Equipment Under Test (EUT) is the MES with the selected configuration of ancillary equipment.

SIST EN 301 489-20 V2.1.1:2019
https://standards.iteh.ai/catalog/standards/sist/d1da00c1-1e38-45db-b3b6-3e33001e70f7/sist-en-301-489-20-v2.1.1-2019

The EUT operational frequencies used during the test, shall be recorded in the test report.

For testing and if physically separated from the MES, any voltage converter shall form part of the EUT.

Whenever the Equipment Under Test (EUT) is provided with an integral antenna, the EUT shall be tested with the antenna fitted in a manner typical of normal intended use.

For MES for which connection to a host equipment is necessary to offer additional functionality, the test configuration shall be as defined in clause 5.2.

4.2 Arrangements for test signals

4.2.1 Arrangements for test signals at the input of transmitters

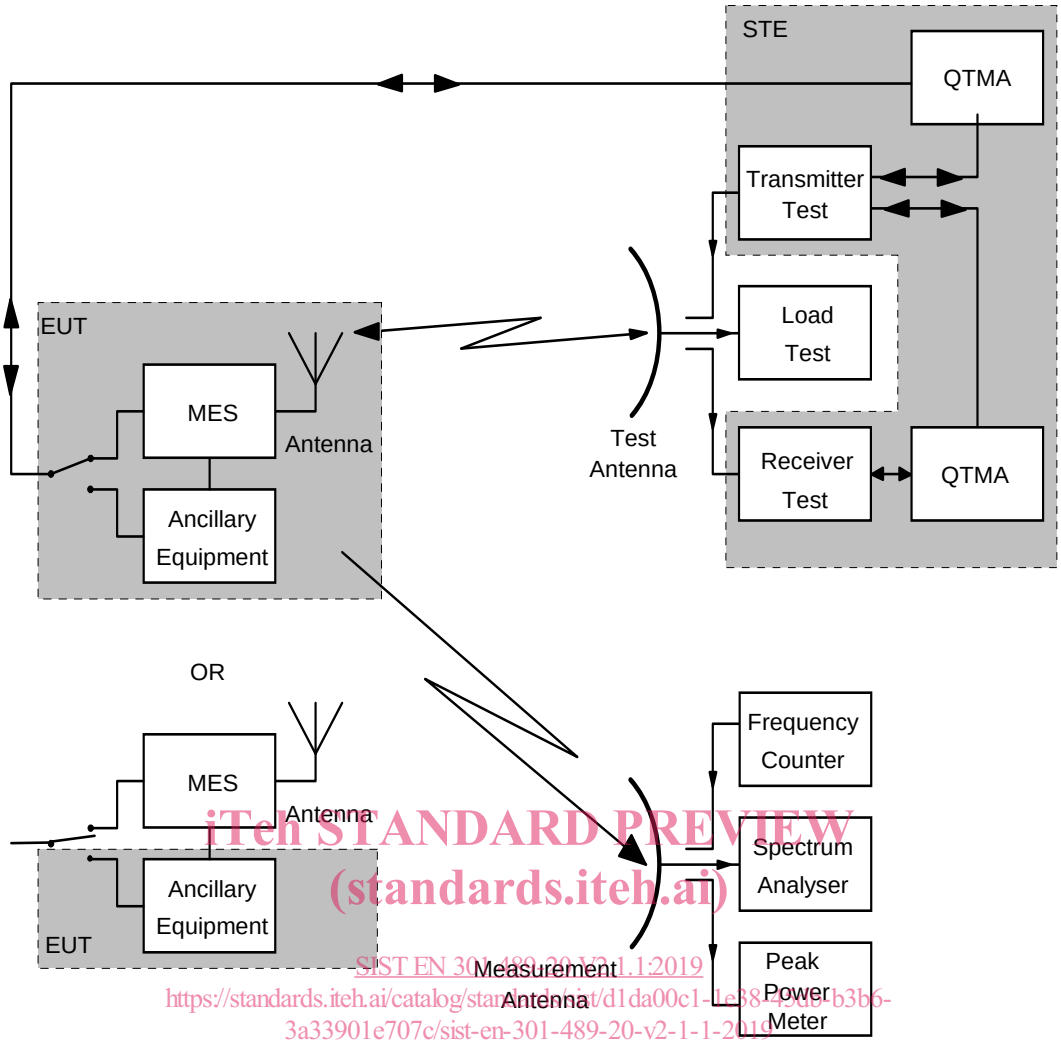
The provisions of ETSI EN 301 489-1 [1], clause 4.2.1 shall apply.

4.2.2 Arrangements for test signals at the output of transmitters

The provisions of ETSI EN 301 489-1 [1], clause 4.2.2 shall apply with the following modifications.

For transmitters, the EUT shall be operated at its maximum rated RF output Peak Envelope Power (PEP), or at a level not less than -6 dB relative to that power level in the event of declared thermal limitations. The transmitter shall be modulated with a test signal which represents normal operation as specified by the manufacturer. A communication link shall be established at the start of the test and be maintained throughout the test. A suggested test configuration is shown in figure 1.

SIST EN 301 489-20 V2.1.1:2019



iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 301 489-20 V2.1.1:2019
https://standards.iteh.ai/catalog/standards/sist/d1da00c1-1e38-4ed9-b3b6-3a33901e707c/sist-en-301-489-20-v2-1-1-2019

Figure 1: Suggested test configuration

4.2.3 Arrangements for test signals at the input of receivers

The provisions of ETSI EN 301 489-1 [1], clause 4.2.3 shall apply with the following modifications.

For the immunity tests of receivers, the wanted input signal, coupled to the receiver, shall be modulated with a test signal specified by the manufacturer which represents normal operation.

For the measurement of the quality of transmission, a communications link shall be established and the wanted input signal shall be applied to the Radio Frequency (RF) input of the receiver. Signal level adjustment may be performed by adjustment of the test transmitter output level such that the received signal level is as close to the normal operation signal level as possible.

The Special Test Equipment (STE), the QTMA and the source of the wanted input signal shall be located outside the test environment.

4.2.4 Arrangements for test signals at the output of receivers

The provisions of ETSI EN 301 489-1 [1], clause 4.2.4 shall apply with the following modifications.

For the quality of transmission measurements the MES may be put in a specific mode of operation where the received data are looped back to the modulation input of the transmitter part of the EUT.