



**SLOVENSKI STANDARD**  
**DSIST EN 301 427:2001**  
**01-1 1^2001**

GUH`Jlg\_YnYa Y`g\_YdcghUY`j b`g]ghYa ]`fG9 GL`!`< Ufa cb]n]fUb]`9B`nU\_cdYbg\_Y  
a cV]`bY`nYa Y`g\_Y`dcghUY`f@A9 GL`Z`\_j`cVfUi `Y`c`j`ZY`\_j`Yb`b]`dUgcj`]`%#/#&#/%  
; <nž`\_j`nUYa UV]ghj YbY`nU`h]j`Y` `YbU`' "&X]fY`\_hj`YF/`HH9

Satellite Earth Stations and Systems (SES); Harmonized EN for Low data rate Land Mobile satellite Earth Stations (LMES) operating in the 11/12/14 GHz frequency bands covering essential requirements under article 3.2 of the R&TTE directive

**Ta slovenski standard je istoveten z: EN 301 427 Version 1.1.1**

**ICS:**

33.070.40      Satelit      Satellite

**DGIST EN 301 427:2001      en**



# ETSI EN 301 427 V1.1.1 (2000-05)

---

*Candidate Harmonized European Standard (Telecommunications series)*

**Satellite Earth Stations and Systems (SES);  
Harmonized EN for Low data rate Land Mobile  
satellite Earth Stations (LMES) operating  
in the 11/12/14 GHz frequency bands  
covering essential requirements under article 3.2  
of the R&TTE directive**

---



---

**Reference**

DEN/SES-000-TBR27

---

**Keywords**

satellite, earth station, LMES, regulation

**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**

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF).

In case of dispute, the reference shall be the printing on ETSI printers of the 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 <http://www.etsi.org/tb/status/>

If you find errors in the present document, send your comment to:

editor@etsi.fr

---

**Copyright Notification**

No part may be reproduced except as authorized by written permission.  
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2000.  
All rights reserved.

# Contents

Intellectual Property Rights .....	6
Foreword .....	6
Introduction .....	7
1 Scope .....	9
2 References .....	10
3 Definitions and abbreviations .....	10
3.1 Definitions .....	10
3.2 Abbreviations .....	11
4 Technical requirement specifications .....	11
4.1 Environmental profile.....	11
4.2 Conformance requirements.....	11
4.2.1 Unwanted emissions outside the band .....	11
4.2.1.1 Justification .....	11
4.2.1.2 Specification.....	12
4.2.1.3 Conformance tests .....	12
4.2.2 Unwanted emissions within the band .....	12
4.2.2.1 Justification .....	12
4.2.2.2 Specification.....	12
4.2.2.3 Conformance tests .....	13
4.2.3 Off-axis EIRP emissions density in the nominated bandwidth .....	13
4.2.3.1 Justification .....	13
4.2.3.2 Specification.....	13
4.2.3.3 Conformance tests .....	13
4.2.4 Control and Monitoring Functions (CMF).....	13
4.2.4.1 Processor monitoring .....	13
4.2.4.1.1 Justification.....	13
4.2.4.1.2 Specification.....	14
4.2.4.1.3 Conformance tests .....	14
4.2.4.2 Transmit subsystem monitoring .....	14
4.2.4.2.1 Justification.....	14
4.2.4.2.2 Specification.....	14
4.2.4.2.3 Conformance tests .....	14
4.2.4.3 Power-on/Reset .....	14
4.2.4.3.1 Justification.....	14
4.2.4.3.2 Specification.....	14
4.2.4.3.3 Conformance tests .....	14
4.2.4.4 Control Channel (CC) reception.....	14
4.2.4.4.1 Justification.....	14
4.2.4.4.2 Specification.....	15
4.2.4.4.3 Conformance tests .....	15
4.2.4.5 Network control commands .....	15
4.2.4.5.1 Justification.....	15
4.2.4.5.2 Specification.....	15
4.2.4.5.3 Conformance tests .....	15
4.2.4.6 Initial burst transmission .....	15
4.2.4.6.1 Justification.....	15
4.2.4.6.2 Specification.....	16
4.2.4.6.3 Conformance tests .....	16
5 Testing for compliance with technical requirements .....	16
5.1 Environmental conditions for testing.....	16
5.2 Essential radio test suites.....	16

6	Test methods .....	16
6.1	General .....	16
6.2	Unwanted emissions outside the band 14,00 GHz to 14,25 GHz .....	17
6.2.1	General.....	17
6.2.2	Test site.....	17
6.2.3	Test method .....	17
6.2.3.1	Receive test equipment.....	18
6.2.3.1.1	Measuring receiver for measurements up to 1 000 MHz.....	18
6.2.3.1.2	Spectrum analyser for measurements above 1 000 MHz.....	18
6.2.4	Procedure.....	18
6.2.4.1	Test arrangements .....	18
6.2.4.2	Up to 1 000 MHz .....	19
6.2.4.3	Above 1 000 MHz.....	20
6.2.4.3.1	Identification of the significant frequencies of the radiated unwanted emissions .....	20
6.2.4.3.2	Measurement of radiated power levels of identified spurious radiation .....	21
6.2.4.3.3	Measurement of conducted unwanted emissions at the antenna flange .....	22
6.2.4.3.3.1	Test site.....	22
6.2.4.3.3.2	Procedure .....	22
6.3	Unwanted emissions within the band 14,00 GHz to 14,25 GHz.....	22
6.3.1	Test method .....	22
6.3.1.1	General.....	23
6.3.1.2	Method of measurement at the antenna flange .....	23
6.3.1.3	Method of measurement with a test antenna.....	24
6.4	Off-axis EIRP emissions density in the nominated bandwidth .....	25
6.4.1	General.....	25
6.4.2	Static rms antenna pointing accuracy.....	25
6.4.2.1	Method of measurement .....	25
6.4.3	Measurement of the off-axis EIRP without the antenna.....	26
6.4.3.1	Transmitter output power density.....	26
6.4.3.1.1	Method of measurement .....	26
6.4.3.2	Antenna transmit gain.....	27
6.4.3.2.1	General .....	27
6.4.3.2.2	Test site .....	27
6.4.3.2.3	Method of measurement .....	27
6.4.3.3	Antenna transmit radiation patterns.....	28
6.4.3.3.1	General .....	28
6.4.3.3.2	Test site .....	28
6.4.3.3.3	Method of measurement .....	29
6.4.3.4	Computation of results .....	29
6.4.4	Measurement of the off-axis EIRP with the antenna.....	30
6.4.4.1	General.....	30
6.4.4.2	Maximum EIRP density per 40 kHz ratio relative to the EIRP.....	30
6.4.4.2.1	Method of measurement .....	30
6.4.4.3	Maximum on-axis EIRP .....	30
6.4.4.3.1	General .....	30
6.4.4.3.2	Test site .....	30
6.4.4.3.3	Method of measurement .....	31
6.4.4.4	Antenna transmit radiation patterns.....	32
6.4.4.4.1	General .....	32
6.4.4.4.2	Test site .....	32
6.4.4.4.3	Method of measurement .....	32
6.4.4.5	Computation of results .....	33
6.5	Control and monitoring .....	33
6.5.1	General.....	33
6.5.2	Test arrangement.....	34
6.5.3	Processor monitoring .....	35
6.5.3.1	Test method.....	35
6.5.4	Transmit subsystem monitoring .....	35
6.5.4.1	Test method.....	35
6.5.5	Power-on/Reset.....	35

6.5.5.1	Test method.....	35
6.5.6	Control Channel (CC) reception .....	36
6.5.6.1	Test method.....	36
6.5.7	Network control commands .....	37
6.5.7.1	Test method.....	37
6.5.8	Initial burst transmission.....	38
6.5.8.1	Test method.....	38
<b>Annex A (normative):</b>	<b>The EN Requirements Table (EN-RT) .....</b>	<b>39</b>
Bibliography .....		40
History .....		41

---

## 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 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 (<http://www.etsi.org/ipr>).

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 Candidate Harmonized European Standard (Telecommunications series) has been produced by ETSI Technical Committee Satellite Earth Stations and Systems (SES).

The present document has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 98/34/EC [3] (as amended) laying down a procedure for the provision of information in the field of technical standards and regulations.

The present document is intended to become a Harmonized Standard, the reference of which will be published in the Official Journal of the European Communities referencing the Directive 1999/5/EC [1] of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity ("the R&TTE Directive").

<b>National transposition dates</b>	
Date of adoption of this EN:	28 April 2000
Date of latest announcement of this EN (doa):	31 July 2000
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 January 2001
Date of withdrawal of any conflicting National Standard (dow):	31 January 2001