

SLOVENSKI STANDARD

DSIST EN 301 443:2001

01-1]^2001

GUHÝ]hg_YnYa Y'g_YdcgHUY]b'g]ghY a]'fG9 GŁ!< Ufa cb]n]fUb]9 B'nUgdfY'Y a bY
gUhY]hg_YhYfa]bUYn'a Ub'yc 'UbhYbc'fU G5 HŁ! CXXUbYz cXXUb c!gdfY'Y a bYU]
gdfY'Y a bYgUhY]hg_YnYa Y'g_YdcgHUY]j 'Z Y_j Yb b]l 'dUgcj]l '(; <n]b'* ; <nz_]
nU'Y a UV]glj YbYnU hYj Y 'YbU' "&X]fY_hj YF/ HH9

Satellite Earth Stations and Systems (SES); Harmonized EN for Very Small Aperture Terminal (VSAT); Transmit-only, transmit-and-receive, receive-only satellite earth stations operating in the 4 GHz and 6 GHz frequency bands covering essential requirements under article 3.2 of the R&TTE Directive

Ta slovenski standard je istoveten z: EN 301 443 Version 1.2.1

ICS:

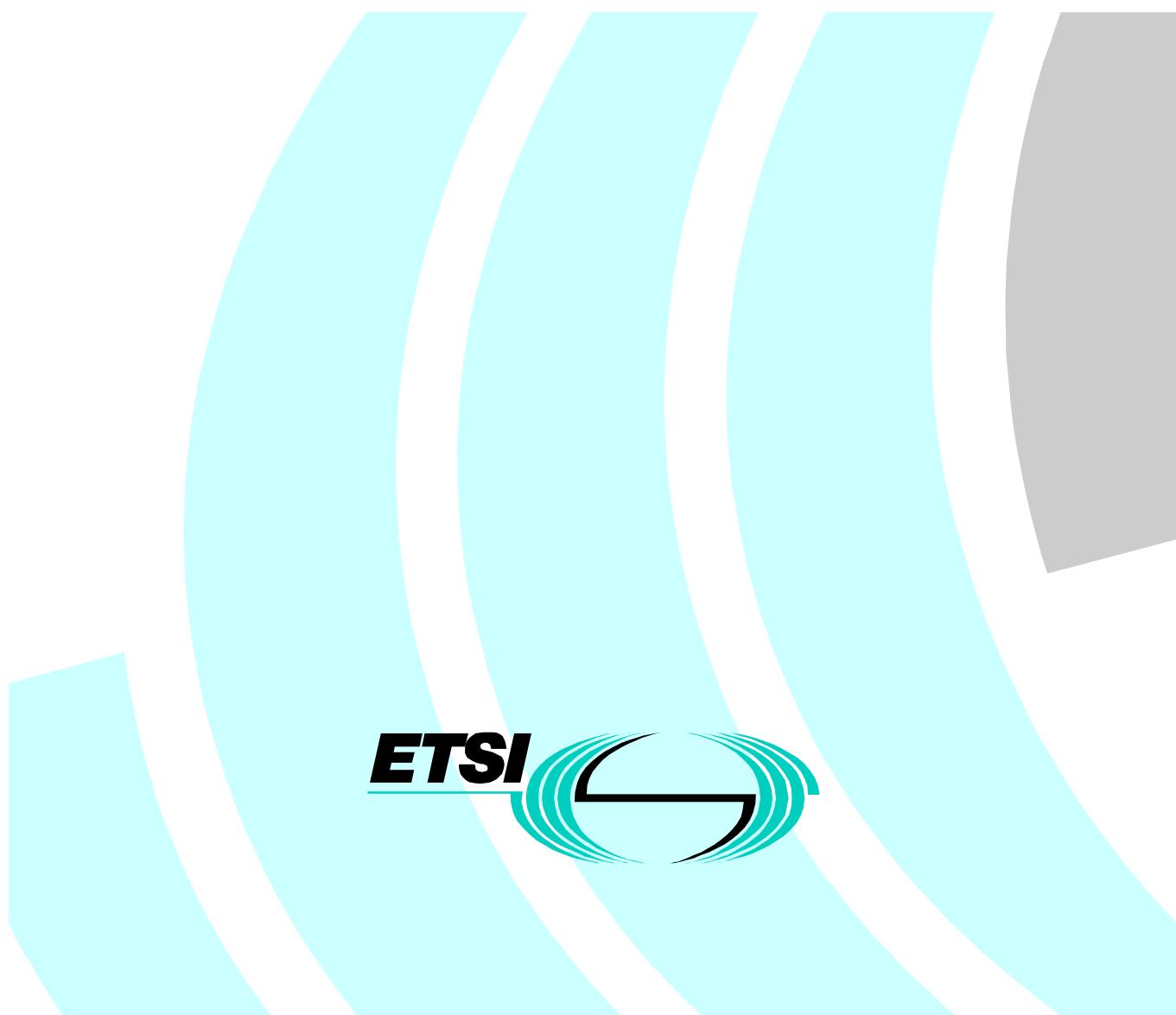
33.070.40 Satelit Satellite

DGIST EN 301 443:2001 en

ETSI EN 301 443 V1.2.1 (2001-02)

Candidate Harmonized European Standard (Telecommunications series)

**Satellite Earth Stations and Systems (SES);
Harmonized EN for Very Small Aperture Terminal (VSAT);
Transmit-only, transmit-and-receive,
receive-only satellite earth stations operating in the 4 GHz
and 6 GHz frequency bands covering essential requirements
under article 3.2 of the R&TTE Directive**



Reference

REN/SES-00049

Keywords

regulation, satellite, VSAT

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 2001.
All rights reserved.

Contents

Intellectual Property Rights	7
Foreword	7
Introduction.....	8
1 Scope.....	10
2 References	11
3 Definitions and abbreviations.....	11
3.1 Definitions	11
3.2 Abbreviations.....	13
4 Technical requirements specifications	14
4.1 General	14
4.1.1 Environmental profile	14
4.1.2 Control and Monitoring Functions (CMF)	14
4.2 Conformance requirements.....	14
4.2.1 Off-axis spurious radiation	14
4.2.1.1 Justification	14
4.2.1.2 Specification.....	14
4.2.1.2.1 Transmit VSAT.....	14
4.2.1.2.2 Receive-only VSAT	15
4.2.1.3 Conformance tests	16
4.2.2 On-axis spurious radiation for transmit VSAT	16
4.2.2.1 Justification	16
4.2.2.2 Specification.....	16
4.2.2.2.1 Specification 1: Carrier-on state.....	16
4.2.2.2.2 Specification 2: Carrier-off state and transmission disabled state	16
4.2.2.3 Conformance tests	16
4.2.3 Off-axis EIRP emission density (co-polar and cross-polar) within the band 5,850 GHz to 6,650 GHz	17
4.2.3.1 Justification	17
4.2.3.2 Specification.....	17
4.2.3.3 Conformance test.....	17
4.2.4 Carrier suppression	17
4.2.4.1 Justification	17
4.2.4.2 Specification.....	18
4.2.4.3 Conformance test.....	18
4.2.5 Mechanical (antenna pointing) for transmit VSAT	18
4.2.5.1 Justification	18
4.2.5.2 Specification.....	18
4.2.5.3 Conformance test.....	18
4.2.6 Class A Control and Monitoring Functions.....	18
4.2.6.1 Control and Monitoring Functions (CMF)	18
4.2.6.1.1 General	18
4.2.6.1.2 CMF state transition diagram.....	19
4.2.6.1.3 Specification of states.....	20
4.2.6.2 Control Channels (CC)	20
4.2.6.2.1 Justification.....	20
4.2.6.2.2 Specification	21
4.2.6.2.3 Conformance tests.....	21
4.2.6.3 Self monitoring functions.....	21
4.2.6.3.1 General	21
4.2.6.3.2 Processor monitoring.....	22
4.2.6.3.2.1 Justification	22
4.2.6.3.2.2 Specification	22
4.2.6.3.3 Transmit subsystem monitoring	22
4.2.6.3.3.1 Justification	22

4.2.6.3.3.2	Specification.....	22
4.2.6.3.3.3	Conformance tests	22
4.2.6.3.4	VSAT transmission validation.....	22
4.2.6.3.4.1	General.....	22
4.2.6.3.4.2	VSAT transmission validation by the CCMF.....	22
4.2.6.3.4.2.1	Justification.....	22
4.2.6.3.4.2.2	Specification	23
4.2.6.3.4.2.3	Conformance tests.....	23
4.2.6.3.4.3	VSAT transmission validation by receiving station(s).....	23
4.2.6.3.4.3.1	Justification.....	23
4.2.6.3.4.3.2	Specification	23
4.2.6.3.4.3.3	Conformance tests.....	23
4.2.6.3.4.4	Transmission validation for VSAT using external CC.....	23
4.2.6.3.4.4.1	Justification.....	23
4.2.6.3.4.4.2	Specification	23
4.2.6.3.4.4.3	Conformance tests.....	23
4.2.6.4	Reception of commands from the CCMF	24
4.2.6.4.1	General	24
4.2.6.4.2	Disable message.....	24
4.2.6.4.2.1	Justification	24
4.2.6.4.2.2	Specification	24
4.2.6.4.2.3	Conformance tests	24
4.2.6.4.3	Enable Message	24
4.2.6.4.3.1	Justification	24
4.2.6.4.3.2	Specification	24
4.2.6.4.3.3	Conformance tests	24
4.2.6.5	Power-on/Reset	24
4.2.6.5.1	Justification.....	24
4.2.6.5.2	Specification	24
4.2.6.5.3	Conformance tests.....	25
4.2.7	Class B Control and Monitoring Functions	25
4.2.7.1	Processor monitoring	26
4.2.7.1.1	Justification.....	26
4.2.7.1.2	Specification	26
4.2.7.1.3	Conformance tests	26
4.2.7.2	Transmit subsystem monitoring	26
4.2.7.2.1	Justification.....	26
4.2.7.2.2	Specification	26
4.2.7.2.3	Conformance tests.....	26
4.2.7.3	Power-on/Reset	27
4.2.7.3.1	Justification.....	27
4.2.7.3.2	Specification	27
4.2.7.3.3	Conformance tests	27
4.2.7.4	Control Channel (CC) reception	27
4.2.7.4.1	Justification.....	27
4.2.7.4.2	Specification	27
4.2.7.4.3	Conformance tests	27
4.2.7.5	Network control commands	27
4.2.7.5.1	Justification.....	27
4.2.7.5.2	Specification	27
4.2.7.5.3	Conformance test	28
4.2.7.6	Initial burst transmission	28
4.2.7.6.1	Justification.....	28
4.2.7.6.2	Specification	28
4.2.7.6.3	Conformance test	28
5	Testing for compliance with technical requirements	28
5.1	Environmental conditions for testing.....	28
5.2	Essential radio test suites	28
6	Test methods for the complete VSAT	29
6.1	General	29

6.2	Off-axis spurious radiation	29
6.2.1	Test method.....	30
6.2.1.1	Up to 1 000 MHz.....	30
6.2.1.1.1	Test site	30
6.2.1.1.2	Measuring receivers	30
6.2.1.1.3	Procedure.....	31
6.2.1.2	Above 1 000 MHz	31
6.2.1.2.1	Identification of the significant frequencies of spurious radiation.....	31
6.2.1.2.1.1	Test site.....	31
6.2.1.2.1.2	Procedure	31
6.2.1.2.2	Measurement of radiated power levels of identified spurious radiation	31
6.2.1.2.2.1	Test site.....	31
6.2.1.2.2.2	Procedure	32
6.2.1.2.3	Measurement of conducted spurious radiation at the antenna flange	33
6.2.1.2.3.1	Test site.....	33
6.2.1.2.3.2	Procedure	33
6.3	On-axis spurious radiation for transmit VSAT.....	34
6.3.1	Test method.....	34
6.3.1.1	Test site.....	34
6.3.1.2	Method of measurement.....	34
6.3.1.2.1	General	34
6.3.1.2.2	Method of measurement at the antenna flange.....	34
6.3.1.2.3	Method of measurement with a test antenna.....	35
6.4	Off-axis EIRP emission density within the band.....	36
6.4.1	Test method.....	36
6.4.1.1	Transmit output power density.....	36
6.4.1.1.1	General	36
6.4.1.1.2	Test site	36
6.4.1.1.3	Method of measurement	36
6.4.1.2	Antenna transmit gain.....	37
6.4.1.2.1	General	37
6.4.1.2.2	Test site	37
6.4.1.2.3	Method of measurement	38
6.4.1.3	Antenna transmit radiation patterns.....	39
6.4.1.3.1	General	39
6.4.1.3.2	Test site	39
6.4.1.3.3	Method of measurement	39
6.4.1.3.4	Co-polar radiation pattern - azimuth	39
6.4.1.3.5	Co-polar radiation pattern - elevation.....	40
6.4.1.3.6	Cross-polar radiation pattern - azimuth	40
6.4.1.3.7	Cross-polar radiation pattern - elevation.....	41
6.4.2	Computation of results	41
6.5	Carrier suppression.....	42
6.5.1	Test method	42
6.6	Antenna pointing for transmit VSAT	42
6.6.1	Test method	42
6.7	Class A Control and Monitoring Functions	42
6.7.1	General.....	42
6.7.2	Test arrangement.....	43
6.7.3	Control Channels (CC).....	44
6.7.3.1	Test method.....	44
6.7.3.1.1	Test method for internal CC	44
6.7.3.1.2	Test method for external CC.....	44
6.7.4	Processor monitoring	45
6.7.4.1	Test method.....	45
6.7.5	Transmit subsystem monitoring.....	45
6.7.5.1	Test method	45
6.7.6	VSAT transmission validation	45
6.7.6.1	Test method for VSAT validation by the CCMF for VSAT using internal CC	45
6.7.6.2	Test method for VSAT validation by receiving station(s) for VSAT using internal CC.....	45
6.7.6.3	Test method for transmission validation for VSAT using external CC.....	46
6.7.7	Reception of commands from the CCMF.....	46

6.7.7.1	Test method.....	46
6.7.8	Power-on/Reset.....	46
6.7.8.1	Test method.....	46
6.8	Class B Control and Monitoring Functions.....	47
6.8.1	Test arrangement.....	47
6.8.2	Processor monitoring - Test method	48
6.8.3	Transmit subsystem monitoring - Test method.....	48
6.8.4	Power-on/Reset - Test method.....	48
6.8.5	Control Channel (CC) reception - Test method	49
6.8.6	Network Control commands - Test method.....	50
6.8.7	Initial burst transmission - Test method	51
7	Test methods for modified VSAT	52
7.1	General	52
7.2	Antenna subsystem replacement	52
Annex A (normative):	The EN Requirements Table (EN-RT).....	53
Annex B (informative):	Pointing stability methodology	55
Annex C (informative):	Bibliography.....	56
History	57	