



SLOVENSKI STANDARD
SIST ETS 300 157 E1:2006

01-februar-2006

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Satellite Earth Stations and Systems (SES); Receive-only Very Small Aperture Terminals (VSATs) used for data distribution operating in the 11/12 GHz frequency bands

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Ta slovenski standard je istoveten z: ETS 300 157 Edition 1

ICS:

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

SIST ETS 300 157 E1:2006

en

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EUROPEAN
TELECOMMUNICATION
STANDARD

ETS 300 157

November 1992

Source: ETSI TC-SES

Reference: DE/SES-2001

ICS: 33.060.30

Key words: VSAT

**Satellite Earth Stations (SES);
Receive-only Very Small Aperture Terminals (VSATs)
used for data distribution
operating in the 11/12 GHz frequency bands**

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Satellite Earth Stations (SES) Technical Committee of the European Telecommunications Standards Institute (ETSI), and, has undergone the ETSI standards approval procedure in Public Enquiry 20 and Vote 25.

Every ETS prepared by ETSI is a voluntary standard. This ETS may contain text concerning type approval of the equipment to which it relates. This text should be considered as guidance only and does not make this ETS mandatory.

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1 Scope

This European Telecommunication Standard (ETS) provides specifications for the standardisation of the characteristics of receive-only Very Small Aperture Terminals (VSATs) operating as part of a satellite network used for the distribution of data.

These VSATs have the following characteristics:

- operating in the exclusive space-to-earth part of the Ku-band allocated to the Fixed Satellite Service (FSS), 12,50 to 12,75 GHz and the shared parts of the Ku-band, allocated to FSS and the Fixed Service (FS), 10,7 to 11,7 GHz;
- designed for unattended operation;
- limited to reception of baseband digital signals;
- equipped with one or several terrestrial output ports;
- antenna diameter not exceeding 3,8 m or equivalent corresponding aperture.

The equipment considered in this ETS comprises both the "outdoor unit", usually composed of the antenna subsystem and associated Low Noise Block (LNB), and the "indoor unit" composed of the remaining part of the communication chain, including the cable between these two units.

This ETS does not contain any requirement, recommendation or information about the installation of the VSATs. Nor is this ETS intended to apply to VSAT network hub stations.

This ETS deals with two types of specification:

a) Essential normative requirements (indicated in Clause 4)

Requirements are specified in order to protect other users of the frequency spectrum, both satellite and terrestrial, from unacceptable interference. In addition requirements are specified for the purposes of electrical safety, structural safety and solar radiation protection as well as protection from harmful interference.

The test and measurement procedures associated with the normative requirements detailed in Clause 4 of this ETS shall be met in order to qualify compliance with this ETS.

b) Recommendations (indicated in Clause 5)

Recommendations are related to characteristics which contribute to the quality of reception by providing the VSAT with a minimum interference protection from other radio systems.

The test and measurement procedures associated with the informative recommendations detailed in Clause 5 of this ETS are given for verification purposes only. The compliance with the recommendation will not be taken as a condition to comply with this ETS.

All tests related to the requirements shall be performed and the results shall be entered in the data sheet of the test report. The ability to comply with the recommendations shall also be noted in the data sheet of the test report.

2 Normative references

This European Telecommunication Standard (ETS) incorporates by dated or undated references, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references subsequent amendments to, or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] IEC 950 (1991): "Safety of information technology equipment including electrical business equipment".
- [2] IEC 81(Co)6 (1981): "Standards for lightning protection of structures".
- [3] CISPR publication No.22 (1985): "Limits and methods of measurement of radio interference characteristics of information technology equipment".
- [4] CISPR publication No.16 (1987): "Specification for radio interference measuring apparatus and measurement method".
- [5] EN 55011 (1986): "Limits and methods of measurement of radio interference characteristics of industrial, scientific and medical (ISM) radio frequency equipment".
- [6] IEC 510-2-1 (1978): "Part 2: Measurements for sub-systems. Section One - general, Section Two - Antenna (including feed network)".
- [7] IEC 801-3 (1984): "Part 3: Radiated electromagnetic field requirements".
- [8] CCIR Recommendation 732 (1990): "Method for statistical processing of Earth station antenna side-lobe peaks".
- [9] Draft prETS 300 193: "Satellite Earth Stations (SES): General requirements for the connection of Very Small Aperture Terminal (VSAT) systems to terrestrial networks (DE/SES-3001)".
- [10] Draft prETS 300 194: "Satellite Earth Stations (SES); The interconnection of Very Small Aperture Terminal (VSAT) systems to Packet Switched Public Data Networks (PSPDNs) (DE/SES-3002)".
- [11] Draft ETS DE/SES-3003: "Standard for the interconnection of VSAT systems to CSPDNs".
- [12] Draft ETS DE/SES-3007: "Standard for the interconnection of VSAT systems to ISDN".

3 Definitions and abbreviations

3.1 Definitions

For the purpose of this ETS, the following definitions apply:

Outdoor unit: is the part of the terminal installed in a position within line of sight to the satellite(s) to be received, and it is intended to be operated in outdoor environmental conditions.

It usually comprises two main parts:

- a) the antenna sub-system which converts the incident radiation field into a guided wave;
- b) the Low Noise Block (LNB), which is a device that amplifies, with very low internal noise the received signals in the Radio Frequency (RF) band and converts them to intermediate frequencies.

NOTE: The installation equipment (means of attachment) is not included in this ETS. However, the antenna structures and other components directly mounted on the antenna and forming an integral part of it, are subject to the specifications of this ETS.

Indoor unit: is composed of the remaining part of the equipment. It is generally installed inside the buildings and is connected to the outdoor unit. The connection cable between the outdoor and indoor belongs to the indoor unit.

3.2 Abbreviations

For the purpose of this ETS, the following abbreviations apply:

CSPDN	Circuit Switched Public Data Network
EIRP	Equivalent Isotropically Radiated Power
EUT	Equipment Under Test
FS	Fixed Service
FSS	Fixed Satellite Service
ISDN	Integrated Services Digital Network
LNB	Low Noise Block (low noise amplifier and down converter)
PSPDN	Packet Switched Public Data Network
RF	Radio Frequency
VSAT	Very Small Aperture Terminal