



SLOVENSKI STANDARD

SIST ETS 300 249 E1:2006

01-februar-2006

Satelitske zemeljske postaje in sistemi (SES) – Televizijska sprejemna oprema za uporabo v radiodifuzijski satelitski storitvi (BSS)

Satellite Earth Stations and Systems (SES); Television Receive-Only (TVRO) equipment used in the Broadcasting Satellite Service (BSS)

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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).

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 only as guidance and does not make this ETS mandatory.

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1 Scope

This European Telecommunication Standard (ETS) gives minimum specifications for the standardisation of the technical characteristics of satellite receiving only earth stations, capable of receiving audio-visual signals and associated data. A specified quality of service is not a requirement of this ETS.

The equipment considered in this ETS is confined to the "outdoor unit" that consists of the antenna with the feed network and the low-noise amplifier with its associated down-converter, referred to as Low-Noise Block (LNB) converter.

The output interface towards the indoor unit is defined at the LNB output connector. Consequently the coaxial cable link to the "indoor unit", the intermediate frequency amplifier and the demodulator are not included in this ETS.

For the "indoor unit" the relevant standard is prEN 50083: "Cabled distribution systems for television and sound signals".

This ETS is applicable to Television Receive Only (TVROs) earth stations which receive audio-visual signals in the Broadcasting Satellite Service (BSS) Ku band frequency ranges from 11,70 GHz to 12,50 GHz.

The TVROs are classified into two different types according to the corresponding services:

Type A for collective reception, in particular:

- Community Antenna Television (CATV);
- Master Antenna Television (MATV).

Type B for individual reception, i.e. Direct To Home (DTH) equipment.

A clear distinction is made, wherever applicable between specifications for Type A and for Type B equipment in the various Clauses of this ETS.

The received television signals can be PAL, SECAM, or the different MAC systems, all with the associated TV sound, and possibly other audio programmes.

Any other new TV systems (e.g. digital) may be received in the future, provided that those systems operate in the BSS Ku Band.

They could be:

- digital TV systems;
- MAC - packet family full channel digital mode.

Data may be present as coded signals inside television signals.

Encrypted signals may also be accommodated.

NOTE: This ETS takes as main references for radio frequency specifications the WARC '77 plan (see [1], Appendix 30), and the CCIR relevant Recommendations (see Annex G, informative), but different assumptions are made taking into account the general trend towards very small aperture terminals. Following the decision made during WARC '92 to revise the WARC '77 plan, further developments of Radio Frequency (RF) parameters are expected in the near future and will require further studies.

This ETS specifies:

a) Requirements (indicated in Clause 5).

The requirements cover mechanical, electrical safety and the interface with the indoor unit as well as some electromagnetic compatibility aspects.

The test and measurement procedures associated with the normative requirements detailed in Clause 5 of this ETS shall be met in order to qualify compliance with this ETS.

b) Recommendations (indicated in Clause 6).

The recommendations are related to the quality of reception and are intended to assist manufacturers harmonise equipment design and to enable equipment distributors and end-users to better determine equipment performance.

The test and measurement procedures associated with the informative recommendations detailed in Clause 6 of this ETS are given for verification purposes only. The compliance with the recommendations will not be taken as a condition to comply with the standard for TVRO equipment.

All the tests related to the requirements shall be performed and the results 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 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.

- <https://standards.iteh.ai/catalog/standards/sist/a7cc38ba-ca4d-41bf-a6ac-1d51c4499c9/sist-ets-300-249-e1-2006>
- [1] ITU (1990) Radio Regulations, Vol 1, 2, 3.
- [2] prEN 50083-1 (1991): "Cabled distribution systems for television and sound signals. Part 1: Safety requirements".
- [3] a) IEC 68-1 (1988): "Environmental testing. Part 1: General and guidance".
b) IEC 68-2-52 (1984): "Test Kb: salt mist, cyclic (sodium chloridesolution)".
- [4] a) IEC 695-1-1 (1982): "Fire hazard testing. Part 1: General guidance".
b) HD 444.2 (1,2,3) S1: IEC 695-2-(1(1980), 2(1980), 3(1984)), ed1: "Fire hazard testing. Part 2: test methods".
- [5] IEC 1079 (1992): "Recommended methods of measurement on receivers for satellite broadcast transmissions in the 12 GHz band. Part 1: Radio frequency measurements on the outdoor unit".
- [6] prEN 50083-2 (1991): "Cabled distribution systems. Part 2: EMC for components and systems".
- [7] a) EN 50081-1 (1991): "Electromagnetic compatibility - Generic emission standard. Part 1: Residential, commercial and light industry".
b) EN 50082-1 (1991): "Electromagnetic compatibility - Generic immunity standard. Part 1: Residential, commercial and light industry".

- [8] IEC 510-1-2 (1984): "Part 1: Measurements common to sub-systems and combinations of sub-systems. Section 2: Measurements in the R.F. range".
- [9] a) CISPR No.16 (1987): "Specifications for radio interference measuring apparatus and measurements methods".
- b) Draft prEN 55011 (1991): "Limits and methods of measurement of radio interference characteristics of industrial, scientific and medical (ISM) radio frequency equipment".
- [10] EN 55020 (1988): "Immunity from radio interference of broadcast receivers and associated equipment".
- [11] prEN 61114-1/IEC 1114-1: "Methods of measurement on receiving antennas for satellite broadcast transmissions in the 12 GHz band. Part 1: Electrical measurements on DBS receiving antennas".
- Amendment 1: "Alternative method for G/T ratio".
- [12] a) IEC 154-2 (1980): "Part 2: Relevant specifications for flanges for ordinary rectangular waveguides".
- b) IEC 154-4 (1969): "Part 4: Relevant specifications for flanges for circular waveguides".
- [13] IEC 510-2-4 (1988): "Part 2: Measurements for sub-systems; Section 4: Up-and-down-converters".
- [14] prEN 50083-5: "Cabled distribution systems for television and sound signals. Part 5: Headend".
- [15] Draft IEC 933, Part X: "Audio, video and audio-visual systems. Interconnections and matching values. Part X: Interconnections of satellite receiving equipment".
- [16] IEC 510-1 (1975): "Methods of measurement for radio equipment used in satellite earth stations. Part 1: General".
- IEC 510-1-A (1980): "First supplement: D.C. source conditions".
- [17] IEC 107-1 (1977): "Recommended methods of measurement on receivers for television broadcast transmissions. Part 1: General considerations. Electrical measurements other than those at audio-frequencies".
- [18] IEC 510-1-5 (1988): "Part 1: Measurements common to sub-systems and combinations of sub-systems. Section 5: Noise temperature measurements".

3 Definitions

For the purposes of this ETS, the following definition applies.

Outdoor unit: is the part of the TVRO installed in a position within line of sight to the satellite(s) to be received.

It normally comprises two main parts:

- a) The antenna sub-system which converts the incident radiation field into a guided wave. The antenna sub-system consists of:
- the main reflector, the secondary reflectors (if any) and the radiator;