



SLOVENSKI STANDARD
SIST ETS 300 423 E1:2003

01-december-2003

Satelitske zemeljske postaje in sistemi (SES) – Kopenske mobilne zemeljske postaje (LMES), ki delujejo v pasovih 1,5 GHz in 1,6 GHz in zagotavljajo zvočne oziroma podatkovne komunikacije

Satellite Earth Stations and Systems (SES); Land Mobile Earth Stations (LMES) operating in the 1,5 / 1,6 GHz bands providing voice and/or data communications

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Ta slovenski standard je istoveten z: **ETS 300 423 Edition 1**

ICS:

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

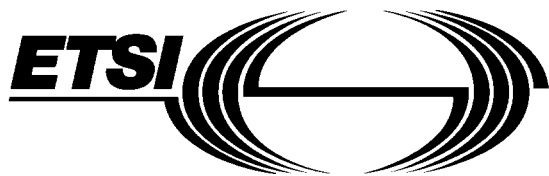
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EUROPEAN
TELECOMMUNICATION
STANDARD

ETS 300 423

August 1995

Source: ETSI TC-SES

Reference: DE/SES-05004

ICS: 33.060.20

Key words: LMES, voice, data

**Satellite Earth Stations and Systems (SES);
Land Mobile Earth Stations (LMESs)
operating in the 1,5 / 1,6 GHz bands providing
voice and/or data communications**

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Contents

Foreword	5
1 Scope	7
2 Normative references	7
3 Definitions and abbreviations	8
3.1 Definitions	8
3.2 Abbreviations	8
4 Test report	9
5 Safety	9
5.1 Mechanical construction	9
5.2 Electrical safety, power voltages	9
5.3 Radio frequency radiation protection	9
6 Radio Frequency (RF)	10
6.1 Unwanted emission outside the bands 1 631,5 to 1 634,5 MHz and 1 656,5 to 1 660,5 MHz	10
6.2 Maximum unwanted emission within the 1 631,5 to 1 634,5 MHz and 1 656,5 to 1 660,5 MHz bands	12
6.3 Maximum EIRP emission density in the nominated bandwidth	13
6.4 Electro-Magnetic (EM) Immunity	14
6.5 Protection of the radio astronomy service from emissions produced by the MES operating in the band 1 660,0 to 1 660,5 MHz	14
6.6 Protection of electronic equipment from excessive EM fields produced by the MES	15
7 MES Control and Monitoring Functions (CMFs)	15
7.1 Monitoring functions	15
7.1.1 Processor monitoring	15
7.1.2 Transmit frequency generation sub-system	16
7.2 Power on/reset	16
7.3 Network control reception and authorisation	16
7.3.1 Network control authorisation	16
7.3.2 Network control reception	17
8 Initial burst transmission	18
9 Electrical safety while loading and unloading hazardous fuels or gases	18
10 EM immunity between 2 GHz and 3 GHz	18
11 Compliance with RF specifications under conditions of shock and vibration	19
12 Method of attachment of the Externally Mounted Equipment (EME) to a vehicle	19
13 Network Control Facilities (NCFs) for MES networks	19
Annex A (normative): Environmental and test conditions	20
A.1 Environmental conditions	20
A.2 Test conditions	20
Annex B (normative): Out-of-band unwanted emissions above 960 MHz - test procedure	21

B.1	Introduction	21
B.2	Measuring apparatus	21
B.3	Equipment Under Test (EUT)	21
B.4	Special Test Equipment (STE)	21
B.5	Test set-up	22
B.6	Measuring procedure	22
B.7	Alternative measurement procedure	22
Annex C (normative): In-band unwanted emissions - test procedure		23
C.1	Introduction	23
C.2	Measuring apparatus	23
C.3	Equipment Under Test (EUT)	23
C.4	Special Test Equipment (STE)	23
C.5	Test set-up	23
C.6	Measuring procedure	24
C.7	Alternative measuring procedure	24
Annex D (normative): EIRP density - test procedure		25
D.1	Introduction	25
D.2	Measuring apparatus	25
D.3	Equipment Under Test (EUT)	25
D.4	Special Test Equipment (STE)	25
D.5	Test set-up	25
D.6	Measuring procedure	25
History		26

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Satellite Earth Stations and Systems (SES) Technical Committee of the European Telecommunications Standards Institute (ETSI).

Transposition dates	
Date of adoption of this ETS:	29 June 1995
Date of latest announcement of this ETS (doa):	30 November 1995
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	31 May 1996
Date of withdrawal of any conflicting National Standard (dow):	31 May 1996

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1 Scope

This European Telecommunication Standard (ETS) provides specifications for the standardisation of the characteristics of Mobile Earth Stations (MESs) using geostationary satellites with both transmit and receive capabilities in order to ensure general safety and to limit interference to radiocommunication services.

The geostationary satellite networks referred to in this ETS operate under the Land Mobile Satellite Service (LMSS). The MESs operate as a part of a satellite network providing voice and/or data communications.

The frequency bands under which the MESs operate should be within the following bands:

	LMSS
MESs transmit	1 631,5 - 1 634,5 MHz 1 656,5 - 1 660,5 MHz
MESs receive	1 530 - 1 533 MHz 1 555 - 1 559 MHz

These MESs generally have the following characteristics:

- the MESs could be either vehicle mounted or portable equipment;
- the MES could consist of a number of modules including suitable interfaces to the user.

The main specifications are contained in three categories related to:

- **safety:** to protect personnel, public and goods from unsafe operating conditions or equipment;
- **unwanted emissions:** to protect terrestrial and satellite radio services from harmful interference;
- **MES control and monitoring:** to specify a minimum set of Control and Monitoring Functions (CMFs) to be implemented on each MES in order to minimise the probability that they originate unwanted transmissions that may give rise to harmful interference to other systems.

This ETS deals with two types of specification:

- specifications defined in order to protect other users of the frequency spectrum from unacceptable interference. In addition, these specifications are specified for the purposes of general safety;
- specifications related to matters of general safety, minimisation of interference to other users of the radio spectrum and for the provision of protection of the MESs against electromagnetic interference from other systems. These specifications apply if required by the manufacturer.

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.

- [1] IEC 215 (1987): "Safety requirements for radio transmitting equipment".
- [2] CISPR 22 (1993): "Limits and methods of measurement of radio disturbance characteristics of information technology equipment".
- [3] IEC 510-2-1 (1978): "Methods of measurement for radio equipment used in satellite earth stations, Part 2: Measurements for sub-systems".

- [4] prETS 300 424 (1994): "Satellite Earth Stations and Systems (SES); Network Control Facilities (NCF) for Land Mobile Earth Stations (LMESs) operating in the 1,5/1,6 GHz bands providing voice and/or data communications".
- [5] IEC 801-3 (1984): "Electromagnetic compatibility for industrial process measurement and control equipment; Part 3: Radiated electromagnetic field requirements".
- [6] CISPR 16 (1987): "Specifications for radio interference measuring apparatus and measurements methods".

3 Definitions and abbreviations

3.1 Definitions

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

directional antenna: An antenna with a transmit gain equal to or greater than 10 dBi.

Installable Equipment (IE): An equipment which is intended to be installed in a vehicle. An IE may consist of one or several interconnected modules as follows:

Internally Mounted Equipment (IME) and Externally Mounted Equipment (EME): The manufacturer indicates which modules are intended to be Externally Mounted Equipment (EME); the remaining module(s) are then defined as Internally Mounted Equipment (IME). Where different specifications apply to IME and EME, this is noted in the relevant text.

nominated bandwidth: The nominated bandwidth encompasses all spectral elements of the transmission which have a level greater than the specified spurious levels. The nominated bandwidth is wide enough to take account of the transmit carrier frequency stability. The nominated bandwidth is within the LMSS transmit frequency band within which the MES operates. The bandwidth of the MES radio frequency transmission is nominated by the manufacturer and included in the data sheet of the test report.

Portable Equipment (PE): A portable equipment is generally intended to be self-contained, free standing and portable. A PE would normally consist of a single module, but may consist of several interconnected modules. In some cases different specifications apply to PE and this is noted in the relevant text.

unwanted emissions: Unwanted emissions are those falling outside the nominated bandwidth.

3.2 Abbreviations

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

CMF	Control and Monitoring Function
EIRP	Equivalent Isotropically Radiated Power
EM	Electro-Magnetic
EME	Externally Mounted Equipment
EUT	Equipment Under Test
IE	Installable Equipment
IME	Internally Mounted Equipment
LMES	Land Mobile Earth Station
LMSS	Land Mobile Satellite Service
MES	Mobile Earth Station
NCF	Network Control Facilities
PE	Portable Equipment
RF	Radio Frequency
rms	root mean square
s	second
STE	Special Test Equipment

4 Test report

The test report shall contain:

- the value of the nominated bandwidth, declared by the manufacturer;
- the results of the tests;
- all parameters and operational conditions.

5 Safety

5.1 Mechanical construction

Purpose:

Protection of operating personnel, the public and goods from insecure or unsafe structures.

Specification:

For Installable Equipment (IE) and Portable Equipment (PE) the mechanical design, construction and finish of the equipment shall conform to IEC 215 [1], section 3, paragraph 9.1.

Verification:

Verification shall be demonstrated by documentary evidence and visual inspection.

5.2 Electrical safety, power voltages

Purpose:

Protection of operating personnel and the public from electric shock.

Specification:

The electrical safety of the equipment shall be in accordance with paragraphs 13, 14, 15 and 16 and Appendix B of IEC 215 [1].

Verification:

Conformance shall be demonstrated by documentary evidence and visual inspection.

5.3 Radio frequency radiation protection

Purpose:

To indicate the distance from the MES below which RF power densities in excess of 8 W/m^2 may be experienced, when averaged over a 6 minute period.

Specification:

The radiating part of the equipment (which includes the exterior of any radome or other antenna enclosure where fitted) shall be labelled with a warning notice which shall be clearly visible when the equipment is in its normal operating configuration. This notice shall indicate the closest distance to the radiating part within which a person may approach the equipment without experiencing radio frequency power density levels in excess of 8 W/m^2 , when under worst case conditions (e.g. maximum power, maximum on/off ratio), averaged over a 6 minute period. This notice shall also state that before approaching the radiating part within any distance closer than that indicated, the MES equipment shall be switched off or otherwise disabled so that it shall not transmit.