SLOVENSKI STANDARD
SIST EN 301 783-1 V1.1.1:2003

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Elektromagnetna združljivost in zadeve v zvezi z radijskim spektrom (ERM) ï Storitev kopenskih mobilnih komunikacij ï Komercialno dostopna amaterska radijska oprema ï 1. del: Tehniļne karakteristike in merilne metode

ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Land Mobile Service; Commercially available amateur radio equipment; Part 1: Technical characteristics and methods of measurement

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

The present document is part 1 of a multi-part EN covering the Electromagnetic compatibility and Radio Spectrum Matters (ERM); Land Mobile Service; Commercially available amateur radio equipment, as identified below:

Part 1: "Technical characteristics and methods of measurement";

Part 2: "Harmonized EN under article 3.2 of the R&TTE Directive".

The present document has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 98/34/EC [5] laying down a procedure for the provision of information in the field of technical standards and regulations.

National transposition dates	
Date of adoption of this EN:	28 July 2000
Date of latest announcement of this EN (doa):	31 October 2000
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 April 2001
Date of withdrawal of any conflicting National Standard (dow):	30 April 2001

Introduction

The present document is the "radio product standard" corresponding to commercially available amateur radio equipment.

1 Scope

The present document applies to the following radio equipment types:

- Radio equipment intended to be used by radio amateurs within the meaning of Article 1, definition 53, of the International Telecommunications Union (ITU) Radio Regulations [1] and which is available commercially.

NOTE: It is noted that this sort of equipment is traditionally supplied with an antenna connector.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1] ITU Radio Regulations (Geneva 1994).

[2] ETSI ETS 300 684: "Radio Equipment and Systems (RES); ElectroMagnetic Compatibility (EMC) standard for commercially available amateur radio equipment".

[3] EN 50147 (all parts): "Anechoic chambers".

[4] CISPR 16-1: "Specification for radio disturbance and immunity measuring apparatus and methods - Part 1: Radio disturbance and immunity measuring apparatus".

[5] Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations.

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document the definitions in the harmonized standards ETS 300 684 [2] EMC and EN 50147 [3] "Anechoic chambers" as well as the following terms and definitions apply:

Environmental profile: range of environmental conditions under which equipment within the scope of the present document is required to comply with the provisions of the present document.

3.2 Symbols

For the purposes of the present document the symbols in the harmonized standards ETS 300 684 [2] EMC and EN 50147 [3] "Anechoic chambers" apply.

3.3 Abbreviations

For the purposes of the present document the abbreviations in the harmonized standards ETS 300 684 [2] EMC and EN 50147 [3] "Anechoic chambers" apply.

4 Technical requirements specifications

4.1 Environmental profile

The environmental profile for operation of the equipment shall be declared by the supplier. The equipment shall comply with all the technical requirements of the present document at all times when operating within the boundary limits of the required operational environmental profile.

4.2 Conformance requirements

4.2.1 Unwanted emissions, conducted

4.2.1.1 Definition

These are any emissions from the antenna port of the equipment in receive (or transmit standby) mode, or any emission outside of exclusion band defined from the necessary bandwidth in transmit mode.

4.2.1.2 Limits

Table 1: Antenna port limits in transmit mode

Frequency range	Test Limits	Remarks
0,15 MHz to 1,7 MHz	-36 dBm or -60 dBc whichever is higher	
1,7 MHz to 35 MHz	-36 dBm or -40 dBc whichever is higher	
35 MHz to 50 MHz	-40 to -60 dBc or -36 dBm whichever is higher	(note 1)
50 MHz to 1 000 MHz	-36 dBm or -60 dBc whichever is higher	
> 1 000 MHz	-30 dBm or -50 dBc whichever is higher	(note 2)
NOTE 1: The limit in dBc decreases linearly with the logarithm of frequency in the range 35 MHz to 50 MHz. NOTE 2: For measurement at frequencies greater than 40 GHz no test limits are specified.		

Where limits are stated using dBc, the reference level is the maximum RF output PEP of the transmitter measured at the antenna port.

Table 2: Antenna port limits in receive or transmit standby mode

Frequency Range	Test Limits	Remarks
0,15 MHz to 1 000 MHz	-57 dBm	
> 1 000 MHz	-47 dBm	(note)
NOTE: For measurement at frequencies greater than 40 GHz no test limits are specified.		

4.2.2 Unwanted emissions, radiated

4.2.2.1 Definition

These are any emissions from the enclosure of the equipment in active, receive (or transmit standby) mode, or any emission outside of exclusion band defined from the necessary bandwidth in transmit mode.

4.2.2.2 Limits

Table 3: Enclosure port limits in active mode

Frequency range	Test limits	Remarks
30 MHz to 35 MHz	-36 dBm or -40 dBc whichever is higher	
35 MHz to 50 MHz	-40 to -60 dBc or -36 dBm whichever is higher	(note 1)
50 MHz to 1 000 MHz	-36 dBm or -60 dBc whichever is higher	
> 1 000 MHz	-30 dBm or -50 dBc whichever is higher	(note 2)
NOTE 1: The limit in dBc decreases linearly with the logarithm of frequency in the range 35 MHz to 50 MHz. NOTE 2: For measurement at frequencies greater than 40 GHz no test limits are specified.		

Where limits are stated using dBc, the reference level is the maximum RF output PEP of the transmitter measured at the antenna port.

Table 4: Enclosure port limits in receive or transmit standby mode

Frequency Range	Test Limits	Remarks
30 MHz to 1 000 MHz	-57 dBm	
> 1 000 MHz	-47 dBm	(note)
NOTE: For measurement at frequencies greater than 40 GHz no test limits are specified.		

4.2.3 Conducted RF immunity

4.2.3.1 Definition

This test assesses the ability of receivers, transmitters, transceivers, transverters, RF amplifiers to operate as intended in the presence of a radio frequency conducted disturbance at the receiver antenna port.

This test is applicable to base station, mobile, portable and ancillary equipment.

This test shall not apply to RF low-noise preamplifiers intended for location directly at the antenna.

In normal use, amateur radio transmitting equipment is not collocated with other radio transmitters operating within 10 % of its own carrier frequency, so that inter-transmitter intermodulation will not occur. Therefore immunity testing of the transmitter antenna port is not justified and is not included in the present document.