SLOVENSKI STANDARD
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Radijska oprema in sistemi (RES) ï Radiotelefonski oddajniki in sprejemniki za pomorske mobilne storitve, ki obratujejo v pasovih VHF ï Tehniļne karakteristike in merilne metode

Radio Equipment and Systems (RES); Radiotelephone transmitters and receivers for the maritime mobile service operating in VHF bands; Technical characteristics and methods of measurement

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Radio Equipment and Systems (RES) Technical Committee of the European Telecommunications Standards Institute (ETSI), and was adopted, having passed through the ETSI standards approval procedure, (Public Enquiry 19: 1991-05-13 to 1991-10-04, Vote 27: 1992-09-21 to 1992-11-13).

This ETS lays down minimum requirements for VHF radio transmitters and receivers operating on board ships in certain frequency bands allocated to the maritime mobile service, and incorporates the requirements of the relevant recommendations of the International Maritime Organization.

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1 Scope

This ETS states the minimum requirements for VHF transmitters and receivers fitted with a 50 Ω external antenna socket or connector for use on board ships and operating in the bands between 156 and 174 MHz allocated to the maritime mobile service by the Radio Regulations [1)] (see Radio Regulations, Appendices 18 [1] and 19 [2]). The relevant requirements detailed in the references in Clause 2, Normative References are incorporated in this ETS.

2 Normative references

This ETS incorporates by dated or undated reference 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 references 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] Radio Regulations, Appendix 18 (1990): "Table of Transmitting frequencies in the band 156-174 MHz for Stations in the Maritime Mobile Service".

[2] Radio Regulations, Appendix 19 (1990): "Technical Characteristics for Transmitters and Receivers used in the Maritime Mobile Service in the band 156-174 MHz".

[3] CCITT Recommendation E.161 (1988): "Arrangement of figures, letters and symbols on telephones and other devices that can be used for access to a telephone network".

[4] CEPT Recommendation T/R 34-01: "Specifications for Maritime Mobile Radio equipment".

[5] CCITT Recommendation P.53 (1988): "Psophometric apparatus for the objective measurement of circuit noise".

[6] International Convention on Safety of Life at Sea.

[7] CISPR Publication 16 (1987): "CISPR specification for radio interference measuring apparatus and measuring methods".

[8] NMEA 0183 Version 2.00: "Standard for interfacing marine electronic devices".

3 General requirements

3.1 Construction

The mechanical and electrical construction and finish of the equipment shall conform in all respects to good engineering practice, and the equipment shall be suitable for use on board ships.

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1) Use in certain inland waterways may impose additional requirements.

All controls shall be of sufficient size to enable the usual control functions to be easily performed and the number of controls should be the minimum necessary for simple and satisfactory operation.

All parts of the equipment to be checked during inspection or maintenance operations shall be readily accessible. The components shall be readily identifiable.

Full technical documentation shall be supplied with the equipment.

The VHF maritime mobile service uses both single-frequency and two-frequency channels. For two-frequency channels the Radio Regulations require a separation of 4,6 MHz between the transmitting frequency and the receiving frequency.

The equipment shall be capable of operating on single frequency and two-frequency channels with manual control (simplex). It may also be capable of operating on two-frequency channels without manual control (duplex).

The equipment shall be able to operate on all channels defined in Appendix 18 to the Radio Regulations [1].

Operation on channels 75 and 76 shall be prevented by appropriate means. Additional VHF channels outside those defined by Appendix 18 to the Radio Regulations [1] may also be provided, but means shall be provided to block any or all of these additional channels, as may be required by an Administration, before installation on board ships. It shall not be possible for the user to unblock or block these additional channels.

The equipment shall be so designed that use of channel 70 for purposes other than Digital Selective Calling (DSC) is prevented.

It shall not be possible to transmit while any frequency synthesiser used within the transmitter is out of lock.

It shall not be possible to transmit during channel switching operations.

3.2 Controls and indicators

The equipment shall have a channel selector and shall indicate the designator, as shown in Appendix 18 to the Radio Regulations [1], of the channel at which the installation is set. The channel designator shall be legible irrespective of the external lighting conditions.

Where practicable, channels 16 and 70 should be distinctively marked. Selection of channel 16, and if possible channel 70, shall preferably be by readily accessible means (e.g. a distinctively marked key). Where an input panel on the equipment for entering the digits 0 - 9 is provided, this shall conform to CCITT Recommendation E.161 [3].

The equipment shall have the following additional controls and indicators:

- on/off switch for the entire installation with a visual indication that the installation is in operation;
- a manual non-locking push to talk switch to operate the transmitter;
- on/off switch for the loudspeaker;
- a switch for reducing transmitter output power to no more than 1 W;
- an audio frequency power volume control;
- a squelch control;
- a control for reducing the brightness of the equipment illumination to zero;
- an output power detector giving a visual indication that the carrier is being produced.

The equipment shall also meet the following requirements:

- the user shall not have access to any control which, if wrongly set, might impair the technical characteristics of the equipment;
- if the accessible controls are located on a separate console and if there are two or more control consoles, one of the consoles shall have priority over the others. If there are two or more control consoles, the operation of one console shall be indicated on the other consoles.

3.3 Handset and loudspeaker

The equipment shall be fitted with a telephone handset or microphone, and an integral loudspeaker and/or a socket for an external loudspeaker. A handset is required if duplex operation is provided.

It shall be possible to switch off the loudspeaker without causing a variation in the audio frequency power provided to the handset, if supplied.

During transmission in simplex operation the receiver output shall be muted.

During transmission in duplex operation only the handset shall be operative. Measures shall be taken to ensure correct operation when duplex is used and precautions shall be taken to prevent harmful electrical or acoustic feedback which might produce oscillations.

3.4 Switching time

The channel switching arrangement shall be such that the time necessary to change over from using one of the channels to using any other channel does not exceed 5 s.

The time necessary to change over from transmission to reception or vice versa, shall not exceed 0,3 s.