



SLOVENSKI STANDARD

SIST ETS 300 373:1999

01-oktober-1999

Radijska oprema in sistemi (RES) - Tehnične karakteristike in merilne metode za pomorske mobilne oddajnike in sprejemnike za uporabo na srednjevalovnem (MF) in kratkovalovnem (HF) področju

Radio Equipment and Systems (RES); Technical characteristics and methods of measurements for maritime mobile transmitters and receivers for use in the MF and HF bands

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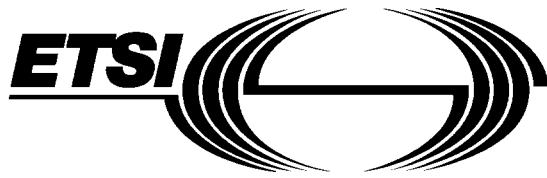
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Foreword

This European Telecommunication Standard (ETS) has been produced by the Radio Equipment and Systems (RES) Technical Committee of the European Telecommunications Standards Institute (ETSI).

The ETS sets out the minimum requirements for Medium Frequency (MF) and Medium and High Frequency (MF/HF) equipment on board ships, operating in the maritime mobile MF and HF radio services.

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

Transposition dates	
Date of adoption of this ETS:	26 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) states the minimum requirements for radio transmitters and receivers, for use on ships, operating in either the Medium Frequency (MF) only or in the Medium and High Frequency (MF/HF) bands allocated in the International Telecommunications Union (ITU) Radio Regulations [1], to the Maritime Mobile Service (MMS).

This ETS refers to equipment for one or more of the following:

- Single SideBand (SSB) modulation for telephony transmission and reception; (J3E)
- Frequency Shift Keying (FSK) or SSB modulation of a keyed sub-carrier to transmit and receive Digital Selective Calling (DSC) signals in accordance with ITU-R Recommendation 493-5 [5].

This ETS also refers to radio equipment, which is not integrated with the DSC encoder or decoder, but defines the interfaces with such equipment.

NOTE: The requirements for integrated equipment may be found in other relevant ETSs.

The tests in this ETS are applicable to receivers for operating on all frequencies in the bands 1 605 kHz to 4 000 kHz or 1 605 kHz to 27,5 MHz as allocated in the Radio Regulations [1], to the MMS.

Other spot frequency receivers should meet all the requirements of this ETS and other relevant standards as applicable for the frequencies and modes provided.

This ETS includes the International Maritime Organisation (IMO) and ITU requirements included in the relevant provisions of the Radio Regulations [1], the International Convention for the Safety Of Life At Sea (SOLAS) [3], and the IMO Resolutions A.421(XI), A.610(15), A.613(15), and A.694(17) [4].

If the equipment, or parts of it, are designed in such a manner that they can be used for other categories of maritime radiocommunication (e.g. Morse telegraphy or NBDP (ETS 300 067) [9]), those parts of the equipment should fulfil the relevant requirements of the appropriate standards for the service(s) in question e.g. ETS 300 067 [9].

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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] | ITU Radio Regulations. |
| [2] | 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". |
| [3] | International Convention for the Safety of Life at Sea, (SOLAS), as amended 1988. |
| [4] | IMO Resolutions A.421(XI), A.610(15), A.613(15) and A.694(17). |
| [5] | ITU-R Recommendation 493-5: "Digital Selective Calling System for use in the Maritime Mobile Service". |
| [6] | NMEA 0183, Version 2.00: "Standard for interfacing marine electronic devices". |
| [7] | ISO Standard 3791: "Office machines and data processing equipment - Keyboard layout for numeric applications". |

- [8] ETR 028: "Radio Equipment and Systems (RES); Uncertainties in the measurement of mobile radio equipment characteristics".
- [9] ETS 300 067: "Radio Equipment and Systems (RES); Radiotelex equipment operating in the maritime MF/HF service Technical Characteristics and methods of measurement".

3 Definitions, abbreviations and symbols

3.1 Definitions

For the purposes of this ETS the following definitions apply:

assigned frequency: The centre of the frequency band assigned to a station.

carrier frequency: The frequency to which the transmitter or receiver is tuned.

3.2 Abbreviations

For the purposes of this ETS the following abbreviations apply:

AGC	Automatic Gain Control
DSC	Digital Selective Calling
EE	Equipment Engineering
emf	electromotive force
FSK	Frequency Shift Keying
IEC	International Electrotechnical Committee
IMO	International Maritime Organisation
ISO	International Standards Organisation
ITU	International Telecommunications Union
MF	Medium Frequency
MF/HF	Medium and High Frequency
MMS	Maritime Mobile Service
NBDP	Narrow Band Direct Printing telegraphy
NMEA	National Maritime Electronic Association
RMS	Root Mean Square
SNR	Signal-to-Noise Ratio
SOLAS	Safety Of Life At Sea
SSB	Single SideBand
USB	Upper SideBand

3.3 Symbols

For the purposes of this ETS the following symbols apply as defined in the Radio Regulations [1]:

F1B	frequency modulation, single channel containing quantized or digital information without the use of a modulating sub-carrier, telegraphy for automatic reception.
H3E	SSB, full carrier, single channel containing analogue information, telephony.
J2B	SSB, suppressed carrier, single channel containing quantized or digital information with the use of a modulating sub-carrier, telegraphy for automatic reception.
J3E	SSB, suppressed carrier, single channel containing analogue information, telephony.

4 General requirements

4.1 Construction

4.1.1 Design

In all respects the mechanical and electrical design and construction and the finish of the equipment shall conform with good engineering practice, and the equipment shall be suitable for use on board ships at sea.

4.1.2 Inspection and maintenance

All parts of the equipment which are subject to inspection and maintenance adjustments shall be easily accessible. Components shall be easily identifiable, either by markings within the equipment or with the aid of the technical description.

The equipment shall be so designed that the main units can be replaced readily, without elaborate re-calibration or re-adjustment.

4.1.3 Illumination

Equipment intended to be installed on the navigating bridge of a ship shall be provided with adequate illumination to enable identification of controls and facilitate reading of indicators at all times. Means shall be provided for reducing continuously, to extinction, the output of any light source on the equipment which is capable of interfering with navigation.

4.1.4 Antenna static protection

In order to provide protection against damage due to static voltages which may appear at the input of the receiver, there shall be a dc path from the antenna terminal to chassis not exceeding 100 k Ω .

4.1.5 Digital input panels SIST ETS 300 373:1999

Where a digital input panel with the digits "0" to "9" is provided, the digits shall be arranged to conform with CCITT Recommendation E.161 [2]. However, where an alphanumeric keyboard layout is provided, the digits "0" to "9" may, alternatively, be arranged to conform with ISO Standard 3791 [7].

4.1.6 Audio frequencies interfaces

The following inputs and outputs applicable to the type of equipment shall be provided:

- a) transmitters:
- SSB Telephony:
 - 600 Ω earth free audio input;
 - microphone input;
 - DSC with analogue interfaces:
 - 600 Ω earth free audio input;
 - DSC with digital interfaces:
 - NMEA 0183 Version 2.00 [6] input.

The logic level and the appropriate functions shall comply with NMEA 0183 Version 2.00 [6]. The B-state shall be logic "0", and the Y-state shall be logic "1".