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**Radiotelefonska oprema za območje VHF za splošne komunikacije in pripadajoča oprema za digitalni selektivni klic (DSC) razreda D - Harmonizirani standard za dostop do radijskega spektra in za funkcije storitev v sili**

VHF radiotelephone equipment for general communications and associated equipment for Class D Digital Selective Calling (DSC) - Harmonised Standard for access to radio spectrum and for features for emergency services

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**ICS:**

33.060.99	Druga oprema za radijske komunikacije	Other equipment for radiocommunications
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**VHF radiotelephone equipment for general communications  
and associated equipment for Class "D"  
Digital Selective Calling (DSC);  
Harmonised Standard for access to radio spectrum and  
for features for emergency services**

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## Foreword

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

The present document has been prepared under the Commission's standardisation request C(2015) 5376 final [i.5] to provide one voluntary means of conforming to the essential requirements of Directive 2014/53/EU on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC [i.3].

Once the present document is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of the present document given in tables A.1 and A.2 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of that Directive and associated EFTA regulations.

### National transposition dates

Date of adoption of this EN:	21 December 2021
Date of latest announcement of this EN (doa):	31 March 2022
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 September 2022
Date of withdrawal of any conflicting National Standard (dow):	30 September 2023

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## Modal verbs terminology

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# 1 Scope

The present document specifies technical characteristics and methods of measurements for VHF radiotelephone with the following characteristics:

- operating in the channels and frequencies specified in the ITU Radio Regulations appendix 18 [1] as applicable, allocated to the maritime mobile service;
- using either 25 kHz or 12,5 kHz channels and associated equipment for DSC - class D;
- capable of operating on single frequency and two-frequency channels with manual control (simplex);
- supporting dual frequency simplex operation only;
- using phase modulation, G3E (frequency modulation with pre-emphasis of 6 dB/octave) for speech, and G2B for DSC signalling.

Full duplex operation is not supported.

The present document does not provide technical requirements for conformance with the essential requirements of Directive 2014/53/EU [i.3] for any integrated GNSS receiver providing locating function.

NOTE 1: Additional VHF channels for maritime use outside those defined by appendix 18 to the ITU Radio Regulations [1] may also be provided where permitted by administration.

NOTE 2: The relationship between the present document and essential requirements of article 3.2 and article 3.3(g) of Directive 2014/53/EU [i.3] is given in annex A.

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## 2 References (standards.iteh.ai)

### 2.1 Normative references

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The following referenced documents are necessary for the application of the present document.

- [1] ITU Radio Regulations (2020).
- [2] ETSI EN 300 338-3 (V1.3.1) (06-2020): "Technical characteristics and methods of measurement for equipment for generation, transmission and reception of Digital Selective Calling (DSC) in the maritime MF, MF/HF and/or VHF mobile service; Part 3: Class D DSC".
- [3] Recommendation ITU-R M.493-15 (01/2019): "Digital selective-calling system for use in the maritime mobile service".
- [4] ETSI TS 103 052 (V1.1.1) (03-2011): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Radiated measurement methods and general arrangements for test sites up to 100 GHz".
- [5] Recommendation ITU-T O.41 (1994): "Psophometer for use on telephone-type circuits".

## 2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] IMO Circular MSC/Circ-803: "Participation of non-SOLAS ships in the Global Maritime Distress and Safety System (GMDSS)".
- [i.2] Recommendation ITU-R SM.332-4 (07/78): "Selectivity of receivers".
- [i.3] Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC.
- [i.4] IEC 60945 (4<sup>th</sup> Edition 08-2002): "Maritime navigation and radiocommunication equipment and systems - General requirements - Methods of testing and required test results".
- [i.5] Commission Implementing Decision C(2015) 5376 final of 4.8.2015 on a standardisation request to the European Committee for Electrotechnical Standardisation and to the European Telecommunications Standards Institute as regards radio equipment in support of Directive 2014/53/EU of the European Parliament and of the Council.
- [i.6] ETSI EG 203 336 (V1.2.1): "Guide for the selection of technical parameters for the production of Harmonised Standards covering article 3.1(b) and article 3.2 of Directive 2014/53/EU".

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## 3 Definition of terms, symbols and abbreviations

### 3.1 Terms

For the purposes of the present document, the following terms apply:

**B:** one of the two signal elements used in DSC signalling

NOTE: See Recommendation ITU-R M.493-15 [3].

**block:** inhibit a function by making it inaccessible from the user interface

**carrier frequency:** frequency to which the transmitter or receiver is tuned

**class D:** class of DSC intended to provide minimum facilities for VHF DSC distress, urgency and safety as well as routine calling and reception, not necessarily in full accordance with IMO GMDSS carriage requirements for VHF installations

NOTE: See Recommendation ITU-R M.493-15 [3].

**dot pattern:** test signal consisting of alternating B and Y signals

**duplex operation:** operation when the transmitter and receiver operate on different frequencies at the same time

**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

**frequency deviation:** difference between the instantaneous frequency of the modulated RF signal and the carrier frequency

**G2B:** phase-modulation with digital information, with a sub-carrier for DSC operation

**G3E:** phase-modulation (frequency modulation with a pre-emphasis of 6 dB/octave) for speech

**linear demodulation:** FM demodulation with no audio filtering

**linear demodulator:** FM demodulator with no audio filtering

**modulation index:** ratio between the frequency deviation and the frequency of the modulation signal

**Y:** one of two signal elements used in DSC signalling

NOTE: See Recommendation ITU-R M.493-15 [3].

## 3.2 Symbols

For the purposes of the present document, the following symbols apply:

$\lambda$                       lambda (wavelength)

## 3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ad	amplitude difference
CSP	Channel SPacing
DSC	Digital Selective Calling
e.m.f.	electromotive force
EFTA	European Free Trade Association
EN	European Norm
EUT	Equipment Under Test
fd	frequency difference
FM	Frequency Modulation
FSK	Frequency Shift Keying
GMDSS	Global Maritime Distress and Safety System
GNSS	Global Navigation Satellite System
IF	Intermediate Frequency
IM	InterModulation
IMO	International Maritime Organization
ITU-R	International Telecommunication Union - Radiocommunications sector
ITU-T	International Telecommunication Union - Telecommunications sector
MPFD	Maximum Permissible Frequency Deviation
na	not available
nm	nautical mile
OOB	Out Of Band
ppm	parts per million
PTT	Push To Talk
r.m.s.	root mean square
RBW	Reference BandWidth
RF	Radio Frequency
SINAD	Signal + Noise + Distortion to Noise + Distortion
SOLAS	Safety Of Life At Sea
VHF	Very High Frequency

# 4 General and operational requirements

## 4.1 General

Compliance shall be established by simple inspection of the equipment and its technical documentation.