



SLOVENSKI STANDARD
SIST EN 303 132 V2.1.1:2023

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Pomorske naprave VHF za lociranje preživelih z uporabo digitalnega selektivnega klica (DSC, razred M) - Harmonizirani standard za dostop do radijskega spektra in za funkcije storitev v sili

Maritime VHF survivor locating devices employing Digital Selective Calling (DSC Class M) - Harmonised Standard for access to radio spectrum and for features for emergency services

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**Maritime VHF survivor locating devices employing Digital
Selective Calling (DSC Class M);
Harmonised Standard for access to radio spectrum and
for features for emergency services**

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Contents

Intellectual Property Rights	8
Foreword.....	8
Modal verbs terminology.....	9
1 Scope	10
2 References	10
2.1 Normative references	10
2.2 Informative references.....	11
3 Definition of terms, symbols and abbreviations.....	11
3.1 Terms.....	11
3.2 Symbols.....	12
3.3 Abbreviations	13
4 Requirements that can be visually inspected.....	13
4.0 Compliance	13
4.1 Construction.....	13
4.1.1 General.....	13
4.1.2 Categories of equipment	14
4.2 Controls	14
4.3 Indicators	14
4.3.1 General.....	14
4.3.2 Visual indicators	14
4.3.2.1 Alarm indicators.....	14
4.3.2.2 Test indicators	15
4.4 Self ID	15
4.5 Labelling.....	15
5 Technical information	15
5.1 Alerting and locating functions	15
5.2 Technical annexes	16
6 General conditions of measurement	16
6.1 Conformity testing.....	16
6.2 Unique identifier (self ID).....	16
6.3 Artificial Antenna	16
6.3.1 For equipment with an integral antenna.....	16
6.3.2 For testing the RF transmitter output.....	16
6.3.3 For testing the DSC RF receiver input.....	16
6.4 Normal DSC TX Test Modulation	17
6.4.1 Continuous B / Y state	17
6.4.2 Alternating B-Y sequence.....	17
6.4.3 Random B-Y sequence	17
6.4.4 Unmodulated carrier	17
6.5 AIS TX Test Modulation.....	17
6.5.1 Standard test signal number 1	17
6.5.2 Standard test signal number 2	17
6.5.3 Standard test signal number 3	17
6.5.4 Unmodulated carrier	17
6.6 AIS Reference timing signal	17
6.7 Standard test signals for DSC receiver testing	18
6.8 Test conditions power sources and ambient temperatures.....	18
6.8.1 Normal and extreme test conditions.....	18
6.8.2 Test power sources.....	18
6.9 Normal test conditions	18
6.9.1 Normal temperature and humidity	18
6.9.2 Normal test voltage.....	18
6.10 Extreme test conditions	18
6.10.1 Extreme temperatures	18

6.10.2	Extreme test voltages	19
6.10.2.1	Upper extreme test voltage	19
6.10.2.2	Lower extreme test voltage	19
6.11	Reference Bandwidths for emission measurements	19
7	Environmental tests	19
7.1	Introduction	19
7.2	Procedure	19
7.3	Performance check	20
7.4	Drop test	20
7.4.1	Definition	20
7.4.2	Test conditions	20
7.4.3	Method of measurement	20
7.4.4	Required results	20
7.5	Temperature tests	21
7.5.1	Definition	21
7.5.2	Dry heat test	21
7.5.2.1	Method of measurement	21
7.5.2.2	Requirements	21
7.5.3	Damp heat test	21
7.5.3.1	Method of measurement	21
7.5.3.2	Required results	21
7.5.4	Low temperature test	22
7.5.4.1	Method of measurement	22
7.5.4.2	Required results	22
7.5.5	Low temperature battery endurance test	22
7.5.5.1	Method of measurement	22
7.5.5.2	Required results	22
7.6	Vibration test	22
7.6.1	Definition	22
7.6.2	Method of measurement	22
7.6.3	Required results	23
7.7	Saltwater spray test	23
7.7.1	Definition	23
7.7.2	Method of measurement	23
7.7.2.1	The spraying apparatus	23
7.7.2.2	Preparation of EUT	24
7.7.2.3	Test cycles	24
7.7.2.4	Conclusion of testing	24
7.7.3	Required results	24
7.8	Thermal shock test	24
7.8.1	Definition	24
7.8.2	Method of measurement	24
7.8.3	Required results	25
7.9	Buoyancy test	25
7.9.1	Definition	25
7.9.2	Method of measurement	25
7.9.3	Required results and limit	25
7.10	Protection of the transmitter	25
7.10.1	Definition	25
7.10.2	Method of measurement	25
7.10.3	Required results	25
8	Tests on the DSC transmitter	26
8.1	DSC Frequency error	26
8.1.1	Definition	26
8.1.2	Method of measurement	26
8.1.3	Limit	26
8.2	DSC Conducted power variation	26
8.2.1	Purpose	26
8.2.2	Definition	26
8.2.3	Method of measurement	26
8.2.4	Limit	26

8.3	Effective Radiated Power (ERP)	27
8.3.1	Definition	27
8.3.2	Method of measurement	27
8.3.3	Limits	27
8.4	DSC Adjacent channel power	27
8.4.1	Definition	27
8.4.2	Method of measurement	28
8.4.3	Limit	28
8.5	DSC Transmitter transient frequency behaviour	28
8.5.1	Definition	28
8.5.2	Method of measurement	29
8.5.3	Limit	32
8.6	Frequency error (demodulated DSC signal)	32
8.6.1	Definition	32
8.6.2	Method of measurement	32
8.6.3	Limit	32
8.7	Modulation index for DSC	32
8.7.1	Definition	32
8.7.2	Method of measurement	32
8.7.3	Limit	33
8.8	Modulation rate for DSC	33
8.8.1	Definition	33
8.8.2	Method of measurement	33
8.8.3	Limit	33
8.9	Spurious emissions	33
8.9.1	Definition	33
8.9.2	Method of measurement	33
8.9.3	Limit	34
9	Tests on the AIS transmitter	34
9.1	AIS Frequency error	34
9.1.1	Definition	34
9.1.2	Method of measurement	34
9.1.3	Limit	34
9.2	AIS Conducted power variation	34
9.2.1	Purpose	34
9.2.2	Definition	34
9.2.3	Method of measurement	34
9.2.4	Limit	35
9.3	AIS Transmitter spectrum mask	35
9.3.1	Definition	35
9.3.2	Method of measurement	35
9.3.3	Limit	36
9.4	AIS Transmitter transient behaviour (output power)	36
9.4.1	Definition	36
9.4.2	Method of measurement	37
9.4.3	Limit	38
9.5	AIS Transmitter Transient Behaviour (frequency deviation)	38
9.5.1	Definition	38
9.5.2	Method of measurement	38
9.5.3	Limit	38
9.6	AIS Synchronization accuracy	39
9.6.1	Definition	39
9.6.2	Method of measurement	39
9.6.3	Limit	40
10	Tests on the DSC receiver	40
10.1	DSC Maximum usable sensitivity	40
10.1.1	Definition	40
10.1.2	Method of measurement	40
10.1.3	Limit	40
10.2	DSC Co-channel rejection	40
10.2.1	Definition	40

10.2.2	Method of measurement	41
10.2.3	Limit.....	41
10.3	DSC Adjacent channel selectivity	41
10.3.1	Definition.....	41
10.3.2	Method of measurement	41
10.3.3	Limit.....	41
10.4	DSC Spurious response	41
10.4.1	Definition.....	41
10.4.2	Spurious response frequency calculations	42
10.4.3	Method of measurement	42
10.4.4	Limit.....	42
10.5	DSC Intermodulation response.....	42
10.5.1	Definition.....	42
10.5.2	Method of measurement	42
10.5.3	Limit.....	43
10.6	Blocking or desensitization	43
10.6.1	Definition.....	43
10.6.2	Method of measurement	43
10.6.3	Limit.....	43
10.7	DSC Minimum dynamic range.....	43
10.7.1	Definition.....	43
10.7.2	Method of measurement	43
10.7.3	Limit.....	44
11	DSC Conformance Testing	44
11.1	Active mode tests	44
11.1.1	Listen Before Talk (LBT).....	44
11.1.1.1	Method of measurement.....	44
11.1.1.2	Required Results	44
11.1.2	First closed loop distress transmissions	44
11.1.2.1	Applicability.....	44
11.1.2.2	Method of measurement.....	44
11.1.2.3	Required Results	44
11.1.3	First open loop distress transmissions.....	45
11.1.3.1	Applicability.....	45
11.1.3.2	Method of measurement.....	45
11.1.3.3	Required Results	46
11.1.4	Open loop distress repeat transmissions	46
11.1.4.1	Applicability.....	46
11.1.4.2	Method of measurement.....	47
11.1.4.3	Required Results	47
12	AIS VDL Link layer tests.....	47
12.1	Active mode tests	47
12.1.1	Method of measurement	47
12.1.2	Initialization period - Required results.....	48
12.1.3	Message content of Message 1 - Required results	48
12.1.4	Message content of Message 14 - Required results	48
12.1.5	Transmission schedule for Message 1 - Required results	49
12.1.6	Communication state of Message 1 - Required results	49
12.1.7	Transmission schedule of Message 14 - Required results.....	49
12.1.8	Transmission with lost GNSS - Required results.....	49
13	Testing for compliance with technical requirements.....	50
13.1	Environmental conditions for testing	50
Annex A (informative):	Relationship between the present document and the essential requirements of Directive 2014/53/EU	51
Annex B (normative):	Measuring receiver for adjacent channel power measurement.....	53
B.1	Power measuring receiver specification.....	53
B.1.1	General	53
B.1.2	IF filter	53

B.1.3	Attenuation indicator.....	54
B.1.4	r.m.s. value indicator.....	54
B.1.5	Oscillator and amplifier.....	54
Annex C (normative): Additional Test Supports		55
C.1	Float-free support	55
Annex D (informative): AIS message bursts		56
D.1	Active mode	56
D.2	Test mode	57
D.3	Default message field values.....	58
Annex E (informative): Technical characteristics of class M MSLDs.....		59
E.1	General	59
E.2	DSC transmission characteristics	59
E.3	DSC messages and protocols	60
E.4	AIS transmission characteristics	60
E.4.1	General	60
E.4.2	AIS messages	60
E.4.2.1	General.....	60
E.4.2.2	Active mode.....	60
E.4.2.3	Test mode.....	60
E.4.3	Synchronization.....	61
E.4.3.1	General.....	61
E.4.3.2	Active mode.....	61
E.4.3.3	Test transmission	61
E.4.4	UTC.....	61
E.4.4.1	General.....	61
E.4.4.2	UTC parameters storage	62
E.4.5	Required settings	62
E.4.6	Minimum transmitter performance characteristics	62
E.4.7	VHF Data Link (VDL) Access.....	63
E.4.7.1	General.....	63
E.4.7.2	Active mode.....	63
E.4.7.3	Test mode.....	64
E.5	Position indication.....	64
E.6	Power source	64
E.7	Own vessel MMSI	64
Annex F (informative): Grey-box testing of class M MSLDs.....		65
F.1	Definitions.....	65
F.2	Test interface.....	65
F.3	Test modes.....	65
F.3.1	Supported Modes.....	65
F.3.2	DSC Receiver test mode.....	66
Annex G (informative): Maximum Measurement Uncertainty.....		67
Annex H (informative): Checklist		68
Annex I (informative): Change History		69
History		70

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Foreword

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.2] 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.1].

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 table A.1 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:	14 October 2022
Date of latest announcement of this EN (doa):	31 January 2023
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 July 2023
Date of withdrawal of any conflicting National Standard (dow):	31 July 2024

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1 Scope

The present document specifies technical characteristics and methods of measurements for Maritime Survivor Locating Devices (MSLDs) (man overboard devices) employing class M DSC signalling and AIS position locating signalling according to ETSI EN 300 338-6 [1], on the VHF maritime channels 70, AIS 1 and AIS 2.

Class M MSLD (man overboard devices) are included in group A Autonomous Maritime Radio Devices (AMRDs) according to Recommendation ITU-R M.2135.0 [i.6]. The present document incorporates the relevant provisions of the International Telecommunication Union (ITU) radio regulations [i.4] included in Recommendation ITU-R M.493-15 [2] and Recommendation ITU-R M.1371-5 [i.7].

The present document does not provide technical requirements for conformance with the essential requirements of Directive 2014/53/EU [i.1] for any integrated GNSS receiver providing locating function.

NOTE: The relationship between the present document and essential requirements of article 3.2 and 3.3(g) of Directive 2014/53/EU [i.1] is given in annex A.

2 References

2.1 Normative 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.

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

- [1] ETSI EN 300 338-6 (V1.2.1) (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 6: Class M DSC".
- [2] Recommendation ITU-R M.493-15 (01-2019): "Digital selective-calling system for use in the maritime mobile service".
- [3] 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".
- [4] Recommendation ITU-T O.153 (10-1992): "Basic parameters for the measurement of error performance at bit rates below the primary rate".
- [5] IEC 60945 (2002 with COR1:2008): "Maritime Navigation and Radiocommunication Equipment and Systems - General Requirements - Methods of Testing and Required Test Results".

2.2 Informative references

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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] 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.2] 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.3] 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".
- [i.4] ITU-R Radio Regulations (2020).
- [i.5] ETSI TS 101 570-6 (V1.1.1): "Interoperability Testing for Maritime Digital Selective Calling (DSC) Radios; Part 6: VHF Class M Test Descriptions".
- [i.6] Recommendation ITU-R M.2135.0 (10/2019): "Technical characteristics of autonomous maritime radio devices operating in the frequency band 156-162.05 MHz".
- [i.7] Recommendation ITU-R M.1371-5 (02/2014): "Technical characteristics for an automatic identification system using time-division multiple access in the VHF maritime mobile band".
- [i.8] Recommendation ITU-R M.585-8 (10/2019): "Assignment and use of identities in the maritime mobile service".
- [i.9] IMO Annex 11 - Resolution MSC.149 (77) - (adopted on 3 June 2003): "Adoption of the revised performance standards for survival craft portable two-way VHF radiotelephone apparatus".
- [i.10] EUROCAE ED-14G: "Environmental conditions and test procedures for airborne equipment".
- [i.11] IEC EN 60068-2-64:2008/A1:2019: "Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance".

3 Definition of terms, symbols and abbreviations

3.1 Terms

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

acknowledged: automated procedure it indicates that the objective of the initial DSC message has been achieved

activation: initial triggering of an MSLD i.e. both parts of the two-step procedure are performed

active mode: activated mode, transmitting in an emergency situation

closed loop: individual transmission to own vessel

dedicated antenna: removable antenna supplied and tested with the equipment, designed as an indispensable part of the equipment

default: value selected or an action taken by the equipment software in the absence of any operator input

distress alert: name given to the single distress DSC message with the format symbol 112

distress DSC message: DSC message or acknowledgement containing the distress information

distress information: symbols within a DSC message describing a distress situation consisting of the MMSI of the vessel in distress, the nature of distress, the position of the vessel in distress, the UTC time of that position and the mode of subsequent communication

factory default: default value that is set by the manufacturer such that the field or behaviour is defined prior to any operator intervention

information characters: set of symbols in a DSC message that contains the items of interest for the recipient and is used to compute the ECC symbol that terminates the message

integral antenna: antenna designed to be connected to the equipment without the use of a 50 Ω external connector and considered to be part of the equipment

NOTE: An integral antenna may be fitted internally or externally to the equipment.

non distress DSC message: DSC messages or acknowledgements that do not have the format specifier or category of "distress"

open loop: transmitting to all ships (broadcast)

personal floatation device: buoyancy aid, life jacket or vest worn by person

symbol (as part of the DSC sentence): 7 binary bits of a 10 bit DSC word that have the information content

test mode: self-testing mode, an individual test call to own vessel

UTC lock: GNSS has precisely locked to UTC so that it can determine SOTDMA slot timing correctly

UTC parameters: "Coordinated Universal Time (UTC) offset parameters" GNSS data that contains leap second offset information

word (as part of the DSC sentence): used to describe the 10 binary bits that make up the coded entities of a transmitted DSC message

NOTE: The 10 bits consist of a 7 bit "symbol" that gives the information content and 3 bit error check that gives the number of 0 binary bits in the 7 bit symbol.

3.2 Symbols

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

cSt	centi-Stokes
dB	decibel
dBc	Decibels referenced to the carrier power
dBm	Decibels referenced to 1 milliwatt
dB μ V	dB refence to 1 μ V (e.m.f)
GHz	GigaHertz
kHz	kiloHertz
MHz	MegaHertz
ms	milliseconds
mW	milliWatts
nW	NanoWatts
P_{Norm}	conducted power measured under normal conditions
P_{-20}	conducted power measured at the lower extreme temperature
P_{+55}	conducted power measured at the upper extreme temperature
pps	pulses per second
μ T	microtesla
μ W	MicroWatts

3.3 Abbreviations

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

AIS	Automatic Identification System
AMRD	Autonomous Maritime Radio Device
CIRM	Comité International Radio-Maritime
COG	Course Over Ground
CRC	Cyclic Redundancy Check
CSP	Channel SPacing
DSC	Digital Selective Calling
EIRP	Effective Isotropic Radiated Power
EN	European Norm
ERP	Effective Radiated Power
EUT	Equipment Under Test
FM	Frequency Modulation
FSK	Frequency Shift Keying
GLONASS	GLOBAL NAVIGATION Satellite System
GMDSS	Global Maritime Distress and Safety System
GMSK	Gaussian Minimum Shift Keying
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
ID	Identity
IERS	International Earth Reference and Rotation System Service
IMO	International Maritime Organization
LBT	Listen Before Talk
MMSI	Maritime Mobile Service Identity
MOB	Man Over-Board
MSC	Maritime Safety Committee
MSLD	Maritime Survivor Locating Device
NRZI	Non Return to Zero, Inverted
OOB	Out Of Band
RAIM	Receiver Autonomous Integrity Monitoring
RBW	Reference BandWidth
RF	Radio Frequency
SINAD	(Signal+Noise+Distortion) to (Noise + Distortion)
SOG	Speed Over Ground
SOTDMA	Self-Organized Time Division Multiple Access
TDMA	Time Division Multiple Access
UTC	Coordinated Universal Time
VDL	VHF Data Link
VHF	Very High Frequency
VSWR	Voltage Standing Wave Ratio

4 Requirements that can be visually inspected

4.0 Compliance

Compliance to the requirements of this clause (clause 4) shall be achieved by inspection of the supplied user documentation and by simple inspection of the equipment.

4.1 Construction

4.1.1 General

The exterior of the equipment should have no sharp edges or projections that could easily damage inflatable rafts or injure personnel so as to minimize the risk of internal and external damage during use or stowage.