



SLOVENSKI STANDARD

DSIST ETS 300 066:1999

01-1 b]1999

FUX]g_UcdfYa U]b'g]ghYa]'fF9GL!'Dfcgfc'd'Uj U'c]'dca cfg_]gUHY]hg_]fUX]g_] Uj`Ubl_]_fUUbi YZ_]XYi Y'c'bU(\$*ž&) 'A<n!'HY\ b] bY_UfU_hyf]gh_]Y]b a Yf]bYa YfcXY

Radio Equipment and Systems (RES); Float-free maritime satellite Emergency Position Indicating Radio Beacons (EPIRBs) operating on 406,025 MHz; Technical characteristics and methods of measurement

Ta slovenski standard je istoveten z: ETS 300 066 E2.% - *!\$-

ICS:

33.060.20	Sprejemna in oddajna oprema	Receiving and transmitting equipment
33.060.30	Radiorelejni in fiksni satelitski komunikacijski sistemi	Radio relay and fixed satellite communications systems

DSIST ETS 300 066:1999

en



EUROPEAN
TELECOMMUNICATION
STANDARD

ETS 300 066

September 1996

Second Edition

Source: ETSI TC-RES

Reference: RE/RES-01-10

ICS: 33.060.20, 33.060.50

Key words: EPIRB, maritime, radio, testing

**Radio Equipment and Systems (RES);
Float-free maritime satellite
Emergency Position Indicating Radio Beacons (EPIRBs)
operating on 406,025 MHz;
Technical characteristics and methods of measurement**

ETSI

European Telecommunications Standards Institute

ETSI Secretariat

Postal address: F-06921 Sophia Antipolis CEDEX - FRANCE

Office address: 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE

X.400: c=fr, a=atlas, p=etsi, s=secretariat - **Internet:** secretariat@etsi.fr

Tel.: +33 92 94 42 00 - Fax: +33 93 65 47 16

Copyright Notification: No part may be reproduced except as authorized by written permission. The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 1996. All rights reserved.

Contents

Foreword		7
1	Scope	9
2	Normative references	9
3	Definitions and abbreviations	10
	3.1 Definitions	10
	3.2 Abbreviations	10
4	General requirements	11
	4.1 Scope	11
	4.2 Operating conditions	11
	4.3 Lanyard	11
	4.4 Colour and surface	11
	4.5 Low duty cycle light	11
	4.6 Controls	11
	4.7 Indicators	12
	4.8 Self-test mode	12
	4.9 Labelling	12
	4.10 Operating instructions	12
	4.11 Homing device	13
	4.12 Accessories	13
	4.13 Power source	13
	4.13.1 Battery requirements	13
	4.13.2 Safety precautions	13
5	Test conditions	13
	5.1 General	14
	5.2 Performance check	14
	5.3 Preparation of satellite EPIRB for testing	14
	5.4 Test sequence	14
	5.5 Test power source	14
	5.6 Test site	15
	5.7 Test set-up	15
	5.8 Test receiver	16
	5.9 Measuring antenna	17
	5.10 Normal test conditions	19
	5.11 Extreme test conditions	19
	5.12 Procedure for tests at extreme temperatures	19
	5.13 Measurement uncertainties	19
	5.14 Interpretation of the measurement results	19
6	Environmental tests	20
	6.1 General	20
	6.2 Temperature tests	20
	6.2.1 Definition	20
	6.2.2 Dry heat test	20
	6.2.2.1 Method of measurement	20
	6.2.2.2 Requirement	21
	6.2.3 Damp heat test	21
	6.2.3.1 Method of measurement	21
	6.2.3.2 Requirement	21
	6.2.4 Low temperature test	21
	6.2.4.1 Method of measurement	21
	6.2.4.2 Requirement	21
	6.3 Vibration test	22

	6.3.1	Definition.....	22
	6.3.2	Method of measurement.....	22
	6.3.3	Requirement	22
6.4		Ruggedness test	22
	6.4.1	Definition.....	22
	6.4.2	Method of measurement.....	22
	6.4.3	Requirements	23
6.5		Corrosion test.....	23
	6.5.1	Definition.....	23
	6.5.2	Method of measurement.....	23
	6.5.3	Requirements	24
6.6		Drop test into water	24
	6.6.1	Definition.....	24
	6.6.2	Method of measurement.....	24
	6.6.3	Requirement	24
6.7		Thermal shock test.....	24
	6.7.1	Definition.....	24
	6.7.2	Method of measurement.....	24
	6.7.3	Requirements	24
6.8		Immersion test.....	24
	6.8.1	Definition.....	24
	6.8.2	Method of measurement.....	25
	6.8.3	Requirements	25
6.9		Hose stream test.....	25
	6.9.1	Definition.....	25
	6.9.2	Method of measurement.....	25
	6.9.3	Requirements	25
6.10		Buoyancy test.....	25
	6.10.1	Definition.....	25
	6.10.2	Method of measurement.....	25
	6.10.3	Requirements	25
6.11		Solar radiation test	26
	6.11.1	Definition.....	26
	6.11.2	Method of measurement.....	26
	6.11.3	Requirements	26
6.12		Oil resistance test.....	26
	6.12.1	Definition.....	26
	6.12.2	Method of measurement.....	26
	6.12.3	Requirements	27
7		Transmitter	27
	7.1	Output power.....	27
		7.1.1 Definition.....	27
		7.1.2 Method of measurement.....	27
		7.1.3 Limit	27
	7.2	Characteristic frequency.....	27
		7.2.1 Definition.....	27
		7.2.2 Method of measurement.....	27
		7.2.3 Limit	28
	7.3	Short term frequency stability.....	28
		7.3.1 Definition.....	28
		7.3.2 Method of measurement.....	28
		7.3.3 Limit	29
	7.4	Medium term frequency stability.....	29
		7.4.1 Definition.....	29
		7.4.2 Method of measurement.....	29
		7.4.3 Limits	30
	7.5	Temperature gradient.....	30
		7.5.1 Definition.....	30
		7.5.2 Method of measurement.....	30
		7.5.3 Limits	31
	7.6	RF spectrum mask.....	31
		7.6.1 Definition.....	31

	7.6.2	Method of measurement	31
	7.6.3	Limit	31
7.7		Phase deviation and data encoding	32
	7.7.1	Definition	32
	7.7.2	Method of measurement	32
	7.7.3	Limits	32
7.8		Rise and fall times	33
	7.8.1	Definition	33
	7.8.2	Method of measurement	33
	7.8.3	Limits	33
7.9		Modulation symmetry	34
	7.9.1	Definition	34
	7.9.2	Method of measurement	34
	7.9.3	Limit	34
8		Signal format	34
	8.1	General	34
	8.2	Repetition period	34
	8.2.1	Definition	34
	8.2.2	Method of measurement	35
	8.2.3	Limit	35
	8.3	Total transmission time	35
	8.3.1	Definition	35
	8.3.2	Method of measurement	35
	8.3.3	Limits	35
	8.4	Carrier Wave (CW) preamble	35
	8.4.1	Definition	35
	8.4.2	Method of measurement	36
	8.4.3	Limit	36
	8.5	Bit rate	36
	8.5.1	Definition	36
	8.5.2	Method of measurement	36
	8.5.3	Limit	36
9		Satellite EPIRB coding	36
	9.1	General	36
	9.2	System bit fields	39
	9.2.1	Bit synchronisation	39
	9.2.2	Frame synchronisation	40
	9.3	Protected field	40
	9.3.1	General	40
	9.3.2	Format flag	40
	9.3.3	Protocol flag	40
	9.3.4	MID number	40
	9.3.5	Maritime user protocol	40
	9.3.6	Test user protocol	41
	9.4	Error-correcting field	42
	9.5	Emergency code field	42
	9.6	Long message (optional)	43
10		Other technical requirements	44
	10.1	Effective luminous intensity of the low duty cycle light	44
	10.1.1	Definition	44
	10.1.2	Method of measurement	44
	10.1.3	Limit	44
	10.2	Battery capacity	44
	10.2.1	Definition	44
	10.2.2	Method of measurement	44
	10.2.3	Limit	45
	10.3	Homing device	45
	10.3.1	General	45
	10.3.1.1	Class of emission	45
	10.3.1.2	Modulation frequency	45

	10.3.1.3	Transmitter duty cycle.....	45
	10.3.1.4	Sweep repetition rate	45
10.3.2		Frequency error	45
	10.3.2.1	Definition	45
	10.3.2.2	Method of measurement	45
	10.3.2.3	Limit.....	45
10.3.3		Modulation duty cycle	45
	10.3.3.1	Definition	45
	10.3.3.2	Method of measurement.....	46
	10.3.3.3	Limit.....	46
10.3.4		Modulation factor	46
	10.3.4.1	Definition	46
	10.3.4.2	Method of measurement.....	46
	10.3.4.3	Limit.....	46
10.3.5		Peak effective radiated power	46
	10.3.5.1	Definition	46
	10.3.5.2	Method of measurement.....	46
	10.3.5.3	Limit.....	47
10.3.6		Spurious emissions.....	47
	10.3.6.1	Definition	47
	10.3.6.2	Method of measurement.....	47
	10.3.6.3	Limit.....	47
11		Radiation measurements.....	47
11.1		General.....	47
11.2		Radiated power	47
	11.2.1	Definition.....	47
	11.2.2	Method of measurement.....	47
	11.2.3	Limits	48
11.3		Antenna characteristics.....	48
	11.3.1	Definition.....	48
	11.3.2	Method of measurement.....	48
	11.3.3	Limits	49
12		Release mechanism	49
12.1		General.....	49
	12.1.1	Operating conditions.....	49
	12.1.2	Labelling.....	50
	12.1.3	Operating instructions.....	50
12.2		Automatic release of the satellite EPIRB	50
	12.2.1	Definition.....	50
	12.2.2	Method of measurement.....	50
	12.2.3	Requirement	50
Annex A (normative):		Requirements for non float free satellite EPIRBs	52
Annex B (informative):		Sample Bose-Chaudhuri-Hocquenghem error-correcting code calculation	53
Annex C (informative):		Bibliography	54
History			55