



Institut luxembourgeois de la normalisation
de l'accréditation, de la sécurité et qualité
des produits et services

ILNAS-EN 301 925 V1.6.1 (2020-12)

**Radiotelephone transmitters and
receivers for the maritime mobile
service operating in VHF bands;
Technical characteristics and methods**

12/2020



National Foreword

This European Standard EN 301 925 V1.6.1 (2020-12) was adopted as Luxembourgish Standard ILNAS-EN 301 925 V1.6.1 (2020-12).

Every interested party, which is member of an organization based in Luxembourg, can participate for FREE in the development of Luxembourgish (ILNAS), European (CEN, CENELEC) and International (ISO, IEC) standards:

- Participate in the design of standards
- Foresee future developments
- Participate in technical committee meetings

<https://portail-qualite.public.lu/fr/normes-normalisation/participer-normalisation.html>

THIS PUBLICATION IS COPYRIGHT PROTECTED

Nothing from this publication may be reproduced or utilized in any form or by any mean - electronic, mechanical, photocopying or any other data carries without prior permission!

ETSI EN 301 925 V1.6.1 (2020-12)



Radiotelephone transmitters and receivers for the maritime mobile service operating in VHF bands; Technical characteristics and methods of measurement

Reference

REN/ERM-TGMAR-607

Keywords

EMC, GMDSS, maritime, radio, telephony, VHF

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

The present document can be downloaded from:

<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the prevailing version of an ETSI deliverable is the one made publicly available in PDF format at www.etsi.org/deliver.

Users of the present document should be aware that the document may be subject to revision or change of status.

Information on the current status of this and other ETSI documents is available at

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://portal.etsi.org/People/CommitteeSupportStaff.aspx>

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2020.

All rights reserved.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members.

3GPP™ and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

oneM2M™ logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners.

GSM® and the GSM logo are trademarks registered and owned by the GSM Association.

Contents

Intellectual Property Rights	8
Foreword.....	8
Modal verbs terminology.....	8
1 Scope	9
2 References	9
2.1 Normative references	9
2.2 Informative references.....	10
3 Definition of terms, symbols and abbreviations.....	11
3.1 Terms.....	11
3.2 Symbols.....	12
3.3 Abbreviations	12
4 General requirements	13
4.1 Construction	13
4.2 DSC operation.....	13
4.3 Controls and indicators.....	14
4.4 Handset and loudspeaker.....	14
4.5 Safety precautions	15
4.6 Labelling.....	15
4.7 Warm up.....	15
4.8 Audio Processing.....	15
5 Technical requirements	16
5.1 Switching time.....	16
5.2 Class of emission and modulation characteristics	16
5.3 Multiple watch facilities.....	16
5.3.1 Additional performance standards	16
5.3.2 Scanning characteristics.....	17
5.4 Interfaces	17
5.4.1 General.....	17
5.4.2 Audio frequency	17
5.4.3 Digital interfaces.....	17
5.5 Voyage data recorder interface.....	18
6 Test conditions, power sources and ambient temperatures	18
6.1 Test conditions	18
6.2 Test power source.....	18
6.3 Normal test conditions.....	18
6.3.1 Normal temperature and humidity	18
6.3.2 Normal power source voltage	18
6.3.2.1 Mains powered equipment	18
6.3.2.2 Battery powered equipment	19
6.3.2.3 Other power sources.....	19
6.4 Extreme test conditions	19
6.4.1 Extreme temperatures	19
6.4.2 Extreme values of power source voltage	19
6.4.2.1 Mains powered equipment	19
6.4.2.2 Battery powered equipment	19
6.4.2.3 Other power sources.....	19
6.5 Procedure for tests at extreme temperatures.....	19
7 General conditions of measurement	19
7.1 Sequence of testing.....	19
7.2 Test channels	20
7.3 Squelch.....	20
7.4 Arrangements for test signals applied to the receiver input.....	20

7.5	Normal test modulation of the receiver wanted signal	20
7.6	Arrangements for monitoring the receiver output	20
7.7	Arrangements for test signals applied to the transmitter input	21
7.8	Normal test modulation of the transmitter.....	21
7.9	Arrangements for monitoring the transmitter output.....	21
7.10	Arrangements for test of DSC	21
7.11	Standard test signals for DSC.....	21
7.12	Determination of symbol error ratio in the output of the receiver	21
7.13	Reference bandwidths for spurious measurements.....	22
7.14	Interpretation of the measurement results	22
8	Performance checks.....	23
8.1	Performance checks - introduction	23
8.2	Performance check - transmitter frequency error	23
8.3	Performance check - transmitter carrier power	23
8.4	Performance check - transmitter audio frequency harmonic distortion.....	23
8.5	Performance check - receiver sensitivity	23
8.6	Performance check of DSC	23
9	Environmental tests	24
9.1	Procedure.....	24
9.2	Vibration test.....	24
9.2.1	Definition.....	24
9.2.2	Method of measurement	24
9.2.3	Requirement.....	25
9.3	Temperature tests	25
9.3.1	Introduction.....	25
9.3.2	General procedure.....	25
9.3.3	Dry heat	25
9.3.3.1	Definition	25
9.3.3.2	Method of measurement.....	25
9.3.3.3	Requirement	25
9.3.4	Damp heat.....	25
9.3.4.1	Definition	25
9.3.4.2	Method of measurement.....	25
9.3.4.3	Requirement	26
9.3.5	Low temperature cycle.....	26
9.3.5.1	Definition	26
9.3.5.2	Method of measurement.....	26
9.3.5.3	Requirement	26
10	Transmitter	26
10.1	General conditions.....	26
10.2	Frequency error	26
10.2.1	Definition.....	26
10.2.2	Method of measurement	26
10.2.3	Limits.....	27
10.3	Carrier power.....	27
10.3.1	Definitions	27
10.3.2	Method of measurement	27
10.3.3	Limits.....	27
10.3.3.1	General	27
10.3.3.2	Normal test conditions limits	27
10.3.3.3	Extreme test conditions limits.....	27
10.4	Frequency deviation	27
10.4.1	Definition.....	27
10.4.2	Maximum permissible frequency deviation.....	28
10.4.2.1	Method of measurement.....	28
10.4.2.2	Limits	28
10.4.3	Reduction of frequency deviation at modulation frequencies above 3 kHz.....	28
10.4.3.1	Method of measurement.....	28
10.4.3.2	Limits	28
10.5	Sensitivity of the modulator including the microphone	29