

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Global maritime distress and safety system (GMDSS) –
Part 12: Survival craft portable two-way VHF radiotelephone apparatus –
Operational and performance requirements, methods of testing and required test
results**

**Système mondial de détresse et de sécurité en mer (SMDSM) –
Partie 12: Radiotéléphone émetteur-récepteur portable VHF pour embarcation de
sauvetage – Exigences d'exploitation et de fonctionnement, méthodes d'essai et
résultats d'essai exigés**



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2023 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch

Discover our powerful search engine and read freely all the publications previews. With a subscription you will always have access to up to date content tailored to your needs.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 300 terminological entries in English and French, with equivalent terms in 19 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC -

webstore.iec.ch/advsearchform

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études, ...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch

Découvrez notre puissant moteur de recherche et consultez gratuitement tous les aperçus des publications. Avec un abonnement, vous aurez toujours accès à un contenu à jour adapté à vos besoins.

Electropedia - www.electropedia.org

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 300 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 19 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.



IEC 61097-12

Edition 1.2 2023-11
CONSOLIDATED VERSION

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Global maritime distress and safety system (GMDSS) –
Part 12: Survival craft portable two-way VHF radiotelephone apparatus –
Operational and performance requirements, methods of testing and required
test results**

**Système mondial de détresse et de sécurité en mer (SMDSM) –
Partie 12: Radiotéléphone émetteur-récepteur portable VHF pour embarcation de
sauvetage – Exigences d'exploitation et de fonctionnement, méthodes d'essai et
résultats d'essai exigés**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 00.000

ISBN 978-2-8322-7925-0

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

REDLINE VERSION

VERSION REDLINE



**Global maritime distress and safety system (GMDSS) –
Part 12: Survival craft portable two-way VHF radiotelephone apparatus –
Operational and performance requirements, methods of testing and required test
results**

**Système mondial de détresse et de sécurité en mer (SMDSM) –
Partie 12: Radiotéléphone émetteur-récepteur portable VHF pour embarcation de
sauvetage – Exigences d'exploitation et de fonctionnement, méthodes d'essai et
résultats d'essai exigés**

CONTENTS

FOREWORD.....	3
1 Scope.....	5
2 Normative references	5
3 Performance requirements	6
3.1 Introduction	6
3.2 General	6
3.3 General requirements.....	6
3.4 Environmental requirements.....	8
3.5 Electromagnetic compatibility	9
4 Technical characteristics	9
4.1 General	9
4.2 Class of emission and modulation characteristics	9
4.3 Transmitter.....	9
4.4 Receiver.....	9
5 Methods of testing and required test results	10
5.1 Test conditions.....	10
5.2 General conditions of measurement	13
5.3 (3.3.8) Power supply	14
5.4 Transmitter.....	15
5.5 Receiver.....	22
5.6 Battery charger	29
5.7 (3.5) Electromagnetic compatibility.....	29
Annex A (normative) Power measuring receiver specification	33
A.1 IF filter	33
A.2 Attenuation indicator	34
A.3 RMS value indicator	34
A.4 Oscillator and amplifier.....	34
Annex B (normative) Simulated solar radiation source	35
Annex C (informative) Bibliography	36
Figure 1 – Transmitter permissible frequency deviation.....	30
Figure 2 – Storage oscilloscope view t_1 , t_2 and t_3	31
Figure 3 – Test set-up for measuring transient frequency behaviour	32
Figure 4 – Receiver audiofrequency response	32
Figure A.1 – IF filter specification	33
Table 1 – Transmitter transient timing (ms).....	21
Table A.1 – Selectivity characteristic	33
Table A.2 – Attenuation points close to carrier.....	34
Table A.3 – Attenuation points distant from carrier.....	34
Table B.1 – Spectral energy distribution and permitted tolerances	35

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS) –
Part 12: Survival craft portable two-way VHF radiotelephone apparatus –
Operational and performance requirements, methods of
testing and required test results**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

This consolidated version of the official IEC Standard and its amendments has been prepared for user convenience.

IEC 61097-12 edition 1.2 contains the first edition (1996-12) [documents 80/126/FDIS and 80/136/RVD], its amendment 1 (2017-07) [documents 80/829/CDV and 80/843/RVC] and its amendment 2 (2023-11) [documents 80/1069/CDV and 80/1085/RVC].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendments 1 and 2. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

International Standard IEC 61097-12 has been prepared by IEC technical committee 80: Maritime navigation and radiocommunication equipment and systems.

Annexes A and B form an integral part of this standard.

Annex C is for information only.

The committee has decided that the contents of this document and its amendments will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS) – Part 12: Survival craft portable two-way VHF radiotelephone apparatus – Operational and performance requirements, methods of testing and required test results

1 Scope

This part of IEC 61097 specifies the minimum performance requirements, technical characteristics and methods of testing with required test results of survival craft portable two-way radiotelephone apparatus as required by chapter III of the 1988 amendments to the 1974 International Convention for the Safety of Life at Sea (SOLAS), and which is associated with IEC 60945. When a requirement in this standard is different from IEC 60945, the requirement in this standard shall take precedence.

This standard incorporates the applicable parts of the performance requirements included in IMO Resolution ~~A.809(19) annex 4~~ MSC.515(105) and the technical characteristics included in ITU M.489-2 ~~and ITU-R M.542-1~~, and takes account of the general requirements contained in IMO Resolution A.694(17), and conforms with the ITU Radio Regulations where applicable.

NOTE – All text of this standard, whose wording is identical to that in IMO Resolutions ~~A.809(19)~~ MSC.515(105) and A.694(17) and ITU-R M.489-2 is printed in italics and the Resolution/Recommendation and paragraph numbers are indicated in brackets.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61097. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 61097 are encouraged to investigate the possibility of applying the most recent edition of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60529:1989, *Degrees of protection provided by enclosures (IP code)*

IEC 60945:1994/2002, ~~Marine navigational~~ *Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required test results*

IMO International Convention for the Safety of Life At Sea (SOLAS):1974, as amended 1988 (GMDSS) – ~~Chapter III: Life-saving appliances and arrangements~~ *Chapter IV: Radiocommunication*

IMO Resolution A.694(17):1991, *General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids*

~~IMO Resolution A.809(19):1995, Performance standards for survival craft two-way VHF radiotelephone apparatus~~

IMO Resolution MSC.515(105):2022, *Performance standards for survival craft portable two-way VHF radiotelephone apparatus*

ITU Radio Regulations:1995/2020, *Appendix S3: Table of maximum permitted spurious emissions power levels*

ITU Radio Regulations:1990/2020, *Appendix 18: Table of transmitting frequencies in the band 156 – 174 MHz for stations in the maritime mobile service*

ITU-R M.489-2:1995, *Technical characteristics of radiotelephone equipment operating in the maritime mobile service in channels spaced by 25 kHz*