

# INTERNATIONAL STANDARD

**IEC**  
**1097-12**

First edition  
1996-11

---

---

## **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*

© CEI 1996 Droits de reproduction réservés — Copyright - all rights reserved

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'éditeur.

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 the publisher

Bureau central de la Commission Electrotechnique Internationale 3, rue de Varembe Genève Suisse



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

CODE PRIX  
PRICE CODE

**W**

● *Pour prix, voir catalogue en vigueur  
For price, see current catalogue*

## CONTENTS

	Page
FOREWORD .....	3
Clause	
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.....	8
4 Technical characteristics .....	8
4.1 General .....	8
4.2 Class of emission and modulation characteristics .....	8
4.3 Transmitter .....	8
4.4 Receiver .....	9
5 Methods of testing and required test results .....	9
5.1 Test conditions .....	9
5.2 General conditions of measurement .....	12
5.3 Power supply.....	13
5.4 Transmitter .....	14
5.5 Receiver .....	22
5.6 Battery charger.....	29
5.7 Electromagnetic compatibility.....	29
Figures	
1 Transmitter permissible frequency deviation .....	30
2 Storage oscilloscope view $t_1$ , $t_2$ and $t_3$ .....	31
3 Test set-up for measuring transient frequency behaviour .....	32
4 Receiver audiofrequency response .....	32
Annexes	
A Power measuring receiver specification .....	33
B Simulated solar radiation source .....	35
C Bibliography.....	36

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 IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 1097-12 has been prepared by IEC technical committee 80: Maritime navigation and radiocommunication equipment and systems.

The text of this standard is based on the following documents:

FDIS	Report on voting
80/126/FDIS	80/136/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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

Annex C is for information only.

The French version of this standard will be issued separately.

This is a preview - click here to buy the full publication

## **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 1097 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 945. When a requirement in this standard is different from IEC 945, 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 1 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) 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 1097. 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 1097 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 529: 1989, *Degrees of protection provided by enclosures (IP code)*

IEC 945: 1994, *Marine navigational equipment – 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*

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*

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

ITU Radio Regulations: 1990, *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*

ITU-R M.542-1: 1982, *On-board communications by means of portable radiotelephone equipment*