



www.nemko.co

## EC Type-Examination Certificate

### N°. MED-B-12031

This is to certify that Nemko AS did undertake the relevant Type Approval Procedures for the product identified below

*The product*

## Search and Rescue Transponder 9 GHz

*Designated*

### Tron SART 20 SIMRAD SA70 RADAR SART

*Manufactured by*

### Jotron AS

*Address*

### Østbyeien 1, P.O.Box 54, NO-3280, Tjodalyng, Norway

which was found to be in compliance with the requirements of the Radio communication equipment of the Marine Equipment Directive (MED) 96/98/EC, as amended, last amended by Directive 2010/68/EU, of 22 October 2010, subject to any conditions in the schedule of approval attached hereto.

Specified regulations and standards:

Module B of the Directive. Solas 74 as amended, Regulation III/6.2.2, IV/7.1.3, IMO Res. MSC.97 (73) 14.7.1.3, MSC.247(83), IMO Res. A.530 (13), IMO Res. A.802 (19), IMO Res. A.694 (17), ITU-R M.628-3 (11/93), IEC 61097-1:1992, IEC 61097-1(2007), IEC 60945:1996 and IEC 60945 ed.4:2002

This certificate replaces certificate NO. MED-B-11031, which is revoked.

This certificate loses its validity if the manufacturer makes any changes or modifications to the approved equipment, which have not been notified to and agreed upon with Nemko. Before any software changes are implemented, the changes must be recorded and documentation must be provided to Nemko for review and acceptance. Major software changes must be approved by Nemko prior to any implementation. Should the specified regulations or standards be amended during the validity of this certificate, the products are to be re-approved prior to them being placed on board vessels to which the amended regulations or standards apply.

The attached Schedule of Approval forms part of this certificate. The certificate remains valid unless cancelled or revoked, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory in service.

Place and date of issue: Oslo 30 March, 2012

Issued by: Nemko AS, Notified Body EU Id # 0470

Date of expiry: 30 March, 2017

Signed:



This certificate consists of 3 pages

Name: Einar Midtgard, Authorized Signatory

**Annex to EC Type-Examination Certificate, N°. MED-B-12031**

**SCHEDULE OF APPROVAL**

**Product description**

- Main unit: Jotron TRON SART 20 - Radar Transponder – Maritime search and rescue (Module 83010)
- Battery module - two high power C-size Lithium batteries LSH 14 Light 3v6, SAFT (Module 82615)
- Transceiver module (Module 82616)
- Software module (Module 84151)
- Antenna
- Housing
- OEM variant SIMRAD SA70 RADAR SART is identical both electrically and mechanically with TRON SART 20

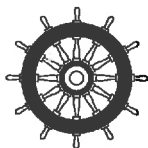
**Any limitations on the acceptance or use of the product or specific requirements**

- 9 GHz radar transponder TRON SART20 to be used on vessels and life rafts in the maritime service
- TRON SART20 performs a secondary alarm when search and rescue units are searching for a life raft/lifeboat in distress.

**The approval documentation**

- Jotron AS – User Manual, 84245\_UM\_SART20\_A, rev. 14 September 2007
- Jotron AS – Technical Manual, 84150\_TM\_SART20\_B, rev. 24 February 2008
- Jotron AS – Principle Diagrams, Transceiver board, TRON SART20, KP-82617\_top, rev. 0719, X-82617\_bottom, rev. 0719
- Jotron AS – Block Diagrams, Transceiver board TRON SART20, E-82617, rev. 0719, FD-83010, rev. 19 September 2007
- Jotron AS – Circuit Diagrams, Transceiver board TRON SART20, E-82617, rev. 0719
- Jotron AS – Part/Component list
- Jotron AS - Label Layout
- Jotron AS - ISO 9000 Certificate
- Jotron AS – QA manual
- Jotron AS – Test report of 6 February 2008, rev A, project no. SART\_MK2\_200502, Test of receiver front end protection, thermal shock and water tightness, drop onto hard surface. All tests supervised by Nemko AS.
- Jotron AS – Statement OEM MED-B Certification, dated 27.03.12
- Nemko Comlab – Test plan no. 93193/5, of 1 October 2007, rev. 1.0
- Nemko Comlab – Test report no. 93193/10, of 11 March 2008, IEC 61097-1:1992, Radar Transponder – Maritime search and rescue (SART) – Operation and performance requirements, methods of testing and required results
- Nemko Comlab – Test report no. 93193/11, of 11 March 2008, IEC 60945:1996 and IEC 60945 ed. 4:2002, Parts of clause 9 and 10, Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required results (Third edition, 1996-11; Fourth edition, 2004)
- Nemko Comlab – Test report 93193/12, of 11 March 2008, IEC 61097-1:1992, Radar Transponder – Maritime search and rescue (SART) – Operation and performance requirements, methods of testing and required results (First edition, 1992-07)
- Nemko AS – Amendment to Test report 93193/12, of 10 March 2011, Comparison and evaluation of changes between IEC 1097-1(1992) and IEC 61097-1(2007)
- Nemko Comlab – Test report no. 93193/12, of 11 March 2008, IEC 60945:1996 and IEC 60945 ed.4:2002, Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required results (Third edition, 1996-11; Fourth edition, 2002-08)

### Limitations/restrictions



"The Mark of Conformity" (i.e. the Wheel mark) may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production control phase module D (Production Quality Assurance), E (Product Quality Assurance), or F (Product Verification), of Annex B of the Directive (MED) is fully complied with and controlled by a written inspection agreement with a notified body."

----- End of certificate -----