



Danmark

Marine Equipment Directive EU Type Examination Module B Certificate

This is to certify that TÜV SÜD DANMARK ApS did undertake the relevant type approval procedures for the equipment identified below, which was found to be in compliance with the Marine Equipment Directive (2014/90/EU) requirements, under the following Implementing Regulation for the listed types of equipment

Implementing Regulation	(EU)2022/1157
Certificate Holder and Manufacturer	Jotron AS Ringdalskogen 8 3270 Larvik Norway
Product(s)	Tron AIS TR-8000 MkII
Product Sector	Navigation equipment
Product Type	MED/4.32 Universal automatic identification system equipment (AIS)

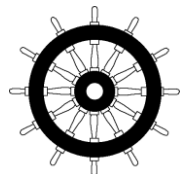
and on the basis of the Technical Data and information detailed in the Annex to this certificate.

Valid from: 13 June 2023

(Signature)

Expiry Date: 04 December 2027

This certificate has been issued in accordance with the TÜV SÜD Testing and Certification Regulations and constitutes page 1 of the combined Certificate and Annex.
The Conditions for the validity of this certificate are listed in the Annex.
For further details, related to this certification please contact BABT@tuvsud.com

**2443**

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Annex to Marine Equipment Directive Module B Type Examination Certificate

1 Equipment Description

Universal automatic identification system equipment (AIS)

1.1 Models

Model
103650 Tron AIS TR-8000 MkII Transponder Unit ^{Note 1}
103660 Tron AIS TR-8000 MkII Class A complete with GPS antenna
103670 Tron AIS TR-8000 MkII complete IMO package

1.1.1 System Components

Model	Description
103708	TR-8000 Transponder Unit
85400	TR-8000 Display Unit
86853	GPS Antenna, std
86581	Power cable, Display unit

1.2 Software ^{Note 2}

Identity	Description
01.02	Software display
01.02	Software transponder

2 Assessed Requirements

2.1 Implementing Regulation (EU)2022/1157

2.2 Compliance Requirements for MED/4.32 ^{Notes 3,4&5}

IMO Resolutions	International Testing Standards	
IMO Res.A.694(17)	IEC 60945:2002 inc. Corr.1:2008	Maritime navigation and radiocommunication equipment and systems - General requirements
IMO Res.MSC.74(69)	IEC 61993-2:2018	Maritime navigation and radiocommunication equipment and systems - Automatic identification systems (AIS) - Part 2: Class A shipborne equipment of the automatic identification system (AIS) - Operational and performance requirements
ITU-R M.1371-5		
IMO Res.MSC.191(79)	IEC 62288:2014	Maritime navigation and radiocommunication equipment and systems - Presentation of navigation-related information on shipborne navigational displays - General requirements
IMO Res.MSC.302(87)	IEC 62923-1:2018	Maritime navigation and radiocommunication equipment and systems - Bridge alert management - Part 1: Operational and performance requirements
	IEC 62923-2:2018	Maritime navigation and radiocommunication equipment and systems - Bridge alert management - Part 2: Alert and cluster identifiers and other additional features

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IMO Resolutions	International Testing Standards	
	IEC 61162-1:2016	Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 1: Single talker and multiple listeners
	IEC 61162-2:1998	Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 2: Single talker and multiple listeners, high-speed transmission

3 Technical Documentation

3.1 Declaration of Conformity

12.04.2023_v.36_Tron_AIS_TR8000MkII_DoC Modified 2023-04-12

3.2 User Guide

103836 Rev.A TR8000 MkII - Quick Reference Guide Dated 2021-08-26
 103839 Rev.A TR8000 MkII - Operation and Installation Manual Dated 2021-07-02
 103840 Rev.6 TR8000 Technical Manual Dated 2020-12-17

3.3 Test Reports

3.3.1 IEC 60945:2002 inc. Corr.1:2008

161140/2 Dated 2011-12-28
 BSH/46121/4321890/12-6 Dated 2012-04-18
 BSH/46121/4321890/12-4 Dated 2012-04-20

3.3.2 IEC 61993-2:2018

BSH/454.AIS-A/Jotron Tron TR-8000/4 Dated 2021-06-18
 BSH/46121/4321890/12-1 Dated 2012-04-19
 BSH/4543/001/4322981/15-1 Dated 2015-12-02
 BSH/46121/4321890/12-4 Dated 2012-04-20
 150521 Dated 2012-04-18
 BSH/454.AIS-A/Jotron Tron TR-8000/5 Dated 2022-11-18

3.3.3 IEC 62288 Ed. 2.0:2014-07

BSH/46121/4321890/12-3 Dated 2019-04-12
 BSH/4543/001/4322981/15-3 Dated 2015-12-02
 BSH/454.AIS-A/Jotron Tron TR-8000/5 Dated 2022-11-18

3.3.4 IEC 61162-1:2016 and IEC 61162-2 Ed.1.0:1998-09

BSH/4543/001/4322725/14-1 Dated 2014-07-09
 BSH/46121/4321890/12-1 Dated 2012-04-19
 BSH/4543/001/4142941/15 Dated 2015-12-07
 BSH/454.AIS-A/Jotron Tron TR-8000/5 Dated 2022-11-18

3.3.5 IEC62923-1:2018 and IEC62923-2:2018

BSH/454.AIS-A/Jotron Tron TR-8000/4 Dated 2021-06-18
 Statement BAM - TR-8000MkII Dated 2022-11-21



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3.4 Build Status

3.4.1 Hardware

Schematics_TR8000 MkII Controller Drawing 85301	Dated	2009-10-16
BOM TR8000 MkII rev 2036	Dated	2021-06-14
EngineeringPartRevision85400TR8000DisplayUnit 221018-125151	Dated	2022-10-18

3.5 Notes

- Note 1 An additional minimum keyboard and display (MKD) is required to meet the requirements of (EU)2022/1157 item MED/4.32.
- Note 2 This approval remains valid for equipment including subsequent minor software amendments which have been formally accepted in accordance with the [TÜV SÜD Testing and Certification Regulations](#).
- Note 3 Ethernet port is only for connection between TR8000 transceiver and TR8000 display(s).
- Note 4 The products listed meet the requirements of IEC 62923-1 for EUT function type P.
- Note 5 (EU)2022/1157 gives a last placing on board date of 01/07/2025 for equipment approved against the test standards listed above. See Conditions of Validity.

4 U.S. Coast Guard Number

This product has been assigned U.S. Coast Guard Module B number

165.155/EC2443

To note type approval to Module B only as it pertains to obtaining US Coastguard approval as allowed by the "Agreement between the European Community and the United States of America on Mutual Recognition of Certificates of Conformity for Marine Equipment", Decision No. 1/2023 signed May 26th, 2023.

5 Conditions of Validity

This certificate ceases to be valid if the manufacturer makes any changes or modifications to the approved type of equipment, which have not been notified to, and agreed with TÜV SÜD DANMARK ApS or a person appointed by TÜV SÜD DANMARK ApS to perform that role.

During the period of validity of this certificate the applicable regulations (international conventions and relevant resolutions and circulars of the IMO) and testing standards of the Commission Implementing Regulation may change, therefore the product conformity may need to be re-assessed by TÜV SÜD DANMARK ApS.

The Mark of Conformity 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, E, or F) of the directive is fully complied with and controlled by a written inspection agreement with a notified body.

Signature:

M Hardy
(Michelle Hardy)

Date:

13/06/2023

On behalf of TÜV SÜD DANMARK ApS