

## Marine Equipment Directive EC 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** Northrop Grumman Sperry Marine B.V.  
Haringbuisweg 33  
3133 KP Vlaardingen  
The Netherlands

**Product(s)**

- a) VisionMaster FT, CAT1 34 - Radar Systems
- b) VisionMaster FT, CAT1C 34 – Chart Radar Systems
- c) VisionMaster FT Dual Channel, CAT1 34 – Radar System
- d) VisionMaster FT Dual Channel, CAT1C 34 – Chart Radar System
- e) VisionMaster FT, CAT1H 34 - Radar Systems
- f) VisionMaster FT, CAT1HC 34 – Chart Radar Systems
- g) VisionMaster FT Dual Channel, CAT1H 34 – Radar System
- h) VisionMaster FT Dual Channel, CAT1HC 34 – Chart Radar System

**Product Sector** Navigation Equipment

**Product Type** MED/4.34 Radar Equipment CAT 1  
MED/4.37 Radar Equipment for high speed craft applications CAT 1H  
MED/4.38a Radar Equipment approved with a chart option; CAT 1C  
MED/4.38c Radar Equipment for high speed craft applications approved with a chart option; CAT 1HC

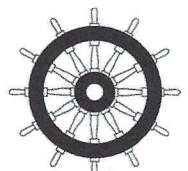
and on the basis of the Technical Data and information detailed in the Annex to this certificate.

Valid from: 08 March 2023

  
(Tom Twynam)

Expiry Date: 24 April 2024

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 [BAAT@tuvsud.com](mailto:BAAT@tuvsud.com)



2443

Issued by TÜV SÜD DANMARK ApS under document number: DK-MED001128 Issue 06

Page 1 of 5

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# Annex to Marine Equipment Directive Module B Type Examination Certificate

## 1 Equipment Description

Radar Systems with high speed craft and chart options (CAT 1, CAT 1H, CAT 1 C & CAT 1HC).

### 1.1.1 Processor and Display Options

Part No.	Description
65901AT, 65901AU, 65901AE (Dual), 65901AF (Dual)	Processor
65926H, 65926P, 65926L	26" Display
65823A, 65923C	23" Display
65900AA or 65900AB and Auxiliary PCIO Interface Unit for Dual – 65940AA	PCIO Interface Unit
65903AF, 65903AG, 65903KF or 65903KG	Control Panel
32SDT001, 32SDT002, 32SDT005 or 32SDT006 <sup>Note 1&amp;2</sup>	Security Device

### 1.1.2 Transceiver, Turning Units and Antenna Options

Part No.	Description
65910*AR, 65910*AT, 65910*AU, where * can be M, N, P, T or W <sup>Note 3</sup>	10kW X-Band Transceiver and Turning Units
65925*AR, 65925*AT, 65925*AU, where * can be M, N, P, T or W <sup>Note 3</sup>	25kW X-Band Transceiver and Turning Units
65810E, 65810F, 65810G, 65810H and 65810L	10kW X-Band Transceivers (Bulkhead)
65825E, 65825F, 65825G, 65825H and 65825L	25kW X-Band Transceivers (Bulkhead)
65901BAR, 65901CAR, 65901CAT, 65901CAU	X-Band Turning Unit (Bulkhead)
65604A, 65606A, 65608A	X-Band Antenna
65830M*R, 65830N*R, 65830N*T, 65830N*U, where * can be E, F, G, H, J, K, L, M, P, Q, R or S <sup>Note 4</sup>	S-Band Transceivers
65831A or 65831B	S-Band Transceivers (Bulkhead)
65830B*R, 65830C*R, 65830C*T, 65830C*U where * can be E, F, G, H, J, K, L, M, P, Q, R or S <sup>Note 4</sup>	S-Band Turning Unit
65837AB, 65837AC, 65837AE, 65837AF, 65837AH	Scanner Control Unit
65612A	S-Band Antenna

### 1.1.3 Optional Components

Part No.	Description
65842A and 65846A	Interswitches
65849A	Slave Junction Box
4802181	Network Serial Interface
65900614, 65900615, 65900667, 65900635 and 65900625	Kit Format Units
68001AA <sup>Note 8</sup>	Secure Maritime Gateway

## 1.2 Software

Identity	Version
VisionMaster FT Software	15.3.0 <sup>Note 5</sup>
Baseline Operating System	Windows 10 IoT Enterprise LTSC, Version: 1809

# Annex to Marine Equipment Directive Module B Type Examination Certificate



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## 2 Assessed Requirements

### 2.1 Implementing Regulation (EU)2022/1157

### 2.2 Compliance Requirements for MED/4.34, 4.37, MED/4.38a and MED/4.38c <sup>Note 9</sup>

IMO Resolutions		International Testing Standards
Resolution MSC.192(79)	IEC 62388 (2013)	Maritime navigation and radiocommunication equipment and systems — Shipborne radar
Resolution MSC.191(79)	IEC 62288 (2014)	Maritime navigation and radiocommunication equipment and systems — Presentation of navigation-related information on shipborne navigational displays — General requirements
Resolution A.694(17)	IEC 60945 (2002) incl. IEC 60945 Corr. 1 (2008)	Maritime navigation and radiocommunication equipment and systems — General requirements
	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
	IEC 61162-450 (2018) <sup>Note 7</sup>	Maritime navigation and radiocommunication equipment and systems — Digital interfaces Part 450: Multiple talkers and multiple listeners — Ethernet interconnection
Resolution MSC.302(87)	IEC 62923-1 (2018) <sup>Note 6</sup>	Maritime navigation and radiocommunication equipment and systems — Bridge alert management Part 1: Operational and performance requirements, methods of testing and required test results
	IEC 62923-2 (2018)	Maritime navigation and radiocommunication equipment and systems — Bridge alert management Part 2: Alert and cluster identifiers and other additional features
ITU-R Recommendation	ITU-R M.1177-4 (2011)	Techniques for measurement of unwanted emissions of radar systems

## 3 Technical Documentation

### 3.1 Declaration of Conformity

DOC080-MED VMFT Series

### 3.2 User Guide

VisionMaster FT Chart Radar User Guide Part No. 65900010-19

VisionMaster FT Ships Manual Vol 1 Part No.65900011V1- 23

VisionMaster FT Ships Manual Vol 2 Part No. 65900011V2- 23

### 3.3 Test Reports

IEC 60945:2002 (inc Corr.1)	QinetiQ/D&TS/SS/CR0607592/1.0, 2006-12-06	P18-0055-1, 2018-12-04
	QinetiQ/EMEA/iX/CR070194/Issue 1.0, 2007-12-20	MET EMC19618-EN60945, 2006-08-28
	QINETIQ/MS/EES/TSTR0801152/1.1, 2008-07-08	103230862LHD-001 Issue 4, 2018-01-02
	QinetiQ-MS-EES-TC0802918, 2008-10-17	21009 Rev 0, 2017-02-10
	75906944 Report 01 Issue 1, 2010-01-14	QinetiQ/EMEA/iX/CR0802757/Issue 1.1, 2008-02-19
	75920230 Report 01 Issue 1, 2012-11-22	QinetiQ-MS-EES-TC0905317, 2009-12-14
	75924948 Report 01 Issue 1, 2014-01-07	QINETIQ/MS/EES/TSTR0903808/3.0, 2009-12-14
	75931934 Report 01 Issue 1, 2015-12-16	QINETIQ/TEG/TECS/TSTR1000030, 2010-08-19
	BO613465/1, 2004-12-24	QinetiQ/TEG/TECS/TC1100272, 2011-02-02



Danmark

# Annex to Marine Equipment Directive Module B Type Examination Certificate

## Test Reports - Continued

IEC 60945:2002 (inc Corr.1) -continued	2008-3142 Rev 01, 2008-03-11	QinetiQ/MS/EES/TC0803242, 2008-11-14
	2008-3464, Rev 02, 2008-09-18	QinetiQ/MS/EES/TSTR0801808-1, 2008-08-29
	2010-3124, Rev 02, 2010-04-20	QINETIQ/MS/WD/TSTR1201598, 2012-07-03
	DANAK-196393, 2002-09-04	QinetiQ/TEG/TECS/TSTR1102226, 2011-08-22
	DANAK-198181, 2005-12-23	JA 340-8596-1, 2006-07-14
	DANAK-198236, 2006-01-20	JA 340-8596-2, 2006-05-08
	DANAK-1911472, 2011-07-18	JA 340-8596-4, 2006-03-16
	DANAK-19/12564, 2012-11-02	TL1016, 2006-10-30
	DANAK-198899 Revision 2, 2007-12-10	TL1316, 2009-06-29
	DANAK-1910255, 2008-08-18	416.095.1, 2016-06-17
	DANAK-1910681 Revision B, 2010-01-25	416.095.2, 2016-05-11
	5P05969-1, 2015-10-30	416.095.3, 2016-05-18
	4P07869, 2014-12-05	962, 2017-03-08
	4P00022-2, 2014-05-06	8P06394 CSD, 2018-08-27
	5000657, 2007-06-28	SP 6P03819-2, 2016-09-13
	103230862LHD-001, 2017-12-06	-
	TR-V15.0.0-NML-090, 2021-12-01	P20-0136, 2020-10-07
	200909004T Rev.1, 2020-12-16	5P05962 rev 1, 2015-12-16
	200909005T Rev.1, 2020-12-10	P21-0035-2, 2021-06-24
	P19-0173, 2019-10-25	TL19111 Issue 2, 2020-03-30
	TL19112 Issue 2, 2020-03-30	TL18115 Issue 1, 2018-11-21
	TL18116 Issue 1, 2018-11-21	TL21009 Issue 1, 2021-03-05
	Mariner 60945 12.1, 2022-01-19	Mariner 60945 Section 8.12, 2022, 01-27
P21-0035-2, 2021-06-24	P22-0126 rev.1, 2022-11-01	
IEC 62388:2013	QINETIQ/MS/EES/TSTR0904084/3, 2009-12-15	TR-V11-NML-018, 2018-11-12
	TR-V10-NML-005, 2017-09-15	TR-V12-NML-032, 2019-08-08
	TR-V12-NML-031, 08-08-2019	TR-V11.1-NML-022, 2019-01-14
	TR-V12.2-NML-040 Issue: 1, 2020-02-20	TR-V12.4-NML-052 Issue 1, 2020-09-24
	TR-V15.0.0-NML-086, 2021-12-01	TR-V15.1.0-NML-093, 2022-05-05
	TR-V15.3.0-NML-114 Issue 1, 2023-02-09	-
IEC 62288:2014	ECDIS Monitor (LCD) Test Procedure and Report, 2005-04-13	TR-V10.0.1-NML-011, 2018-02-12
	DOC102351-1 Rev 2, 2017-04-05	TR-V10-NML-004, 2017-09-18
	DOC102352-3 Rev 1, 2016-11-11	TR-V11-NML-017, 2018-11-12
	DOC102352-4 Rev 2, 2017-04-03	362879 Issue 00, 2018-11-06
	TR-V12-NML-028, 2019-09-02	TR-V11.1-NML-021, 2018-12-20
	TR-V10.0.1-NML-010, 2018-02-12	TR-V12.2-NML-042 Issue: 1, 2020-02-20
	TR-V12.4-NML-055 Issue: 1, 2020-09-30	TR-V15.0.0-NML-085, 2021-12-01
	75952849 Report 03 Issue 01, 2021-12-16	TR-V15.1.0-NML-098, 2022-05-10
	TR-V15.3.0-NML-113 Issue 1, 2023-02-10	-
IEC 61162 Series	BSH 46162-0040380-07, 2007-09-12	TR-V11-NML-015, 2018-11-12
	TR-V12-NML-029, 2019-09-02	TR-V12-NML-030, 2019-08-08
	TR-V12.2-NML-039 Issue: 1, 2020-02-20	TR-V12.2-NML-043 Issue: 1, 2020-02-20
	75952849 Report 02 Issue 01, 2021-12-06	TR-V15.0.0-NML-088, 2021-12-03
	TR-V15.3.0-NML-115 Issue 1, 2023-02-10	-
IEC 62923 Series	75952849 Report 01 Issue 01, 2021-12-16	75952849 Report 01 Issue 02, 2022-05-16
	TR-V15.1.0-NML-097, 2022-06-09	-
Miscellaneous	VisionMaster FT Release 10.0.0 System Performance Test Report, 2017-11-27	TR-V12-NML-033, 2019-08-08
	TR-V11-NML-019, 2018-11-12	TR-V11.1-NML-023, 2018-12-20
	TR-V10.0.1-NML-012, 2018-02-16	TR-V11.1-NML-024, 2019-01-03
	TR-V12.2-NML-041 Issue: 1, 2020-02-20	TR-V15.0.0-NML-091, 2021-12-01
	TR-V15.1.0-NML-100, 2022-06-09	TR-V15.3.0-NML-111 Issue 2, 2023-02-16

### 3.4 Build Status

#### 3.4.1 Hardware

VisionMaster FT Technical File VMFTRPRT Issue 17, 2023-02-24



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# Annex to Marine Equipment Directive Module B Type Examination Certificate

## 3.5 Notes

- Note 1 The 32SDT005 Multi-node security device allows operation of an integrated multi display ships bridge. A security string defines the product type on all the nodes for a particular vessel's bridge operating plan. The product type must be set to CAT1 Radar, CAT1C Chart Radar or Total Watch as appropriate.
- Note 2 A Total Watch product enables operation as a Multi-Function workstation and allows the operator to switch between Chart Radar and other functions. This certificate only applies when the mode is set to Chart Radar for a Total Watch System.
- Note 3 These letters determine whether a 3kHz short pulse trigger option, an additional features option or a bias limiter is fitted.
- Note 4 These letters determine the voltage and frequency of the motor used and is described in the Ships Manual Volume 1.
- Note 5 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 6 The VisionMaster Radar System meets the requirements of IEC 62923-1 for EUT function type P, type R and type S.
- Note 7 Image transfer to a Voyage Data Recorder via IEC 61162-450 Interface.
- Note 8 The 68001AA Secure Maritime Gateway is compliant with IEC 60945 (2002) requirements. This Type Approval does not cover any application or function on the external network that uses data exchanged via the Secure Maritime Gateway.
- Note 9 (EU)2022/1157 gives a last placing on board date of 01/01/2024 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

165.115/EC2443 (Radar Equipment CAT 1)

165.216/EC2443 (Radar Equipment for high speed craft applications (CAT 1H))

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. 1/2018, signed February 18th, 2019

## 5 Conditions of Validity

This certificate ceases to be valid if the manufacturer makes any changes or modifications to the approved 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.

Should the specified regulations (internal conventions and the relevant resolutions and circulars of the IMO) or standards be amended and enforced through an Implementing Regulation during the validity of this certificate, the product(s) is/are to be reapproved prior to it/them being placed on the market or onboard vessels to which the amended regulations or standards apply.

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 Annex B of the directive is fully complied with and controlled by a written inspection agreement with a notified body.

Signature:

(Thomas J. Twynam)

Date:

2023-03-08

On behalf of TÜV SÜD DANMARK ApS