

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)2020/1170
Certificate Holder and Manufacturer	Northrop Grumman Sperry Marine B.V. Haringbuisweg 33 3133 KP Vlaardingen The Netherlands
Product(s)	a) VisionMaster FT, CAT2 25 – Radar System b) VisionMaster FT, ECAT2 25 – Radar System c) VisionMaster FT, ECAT2C 25 – Chart Radar System d) VisionMaster FT Dual Channel, ECAT2 25 – Radar System e) VisionMaster FT Dual Channel, ECAT2C 25 – Chart Radar System f) VisionMaster FT, CAT2H 25 – Radar System g) VisionMaster FT, ECAT2H 25 – Radar System h) VisionMaster FT, ECAT2HC 25 – Chart Radar System i) VisionMaster FT Dual Channel, ECAT2H 25 – Radar System VisionMaster FT Dual Channel, ECAT2HC 25 – Chart Radar System
Product Sector	Navigation Equipment
Product Type	MED/4.35 Radar Equipment CAT 2 MED/4.37 Radar Equipment for high speed craft applications (CAT 2H) MED/4.38b Radar Equipment approved with a chart option; CAT 2C MED/4.38d Radar Equipment for high speed craft applications approved with a chart option; CAT 2HC

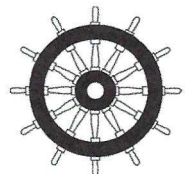
and on the basis of the Technical Data and information detailed in the Annex to this certificate.

Valid from: 14 October 2020


(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 BABT@TUV-SUD.co.uk



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1 Equipment Description

Radar Systems with high speed craft and chart options (CAT 2, CAT 2H, CAT 2C, CAT 2HC).

1.1.1 Processor and Display Options

Part No.	Description
65901AT, 65901AU, 65901AE (Dual), 65901AF (Dual)	Processor
65817G	19" Display
65900AA or 65900AB and Auxiliary PCIO Interface Unit for Dual – 65940AA	PCIO Interface Unit
65903KF or 65903KG	Control Panel
32SDR001, 32SDR002, 32SDR005, 32SDR006, 32SDR008 or 32SDT001, 32SDT002, 32SDT005, 32SDT006 or 32SDT008 ^{Note 1&2}	Security Device
65920BTAF, 65920BTAG, 65920BTBF, 65920BTBG (not Dual), 65920CTAF, 65920CTAG, 65920CTBF or 65920CTBG (not Dual)	Integrated Tabletop Display

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 ^{Note 3}	10kW X-Band Transceiver and Turning Units
65925*AR, 65925*AT, 65925*AU, where * can be M, N, P, T or W ^{Note 3}	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 ^{Note 4}	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 ^{Note 4}	S-Band Turning Unit
65837AB, 65837AC, 65837AE, 65837AF, 65837AH	Scanner Control Unit
65612A	S-Band Antenna

1.1.3 Ancillary 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
67050FA	Secure Maritime Gateway



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1.2 Software

Identity	Version
VisionMaster FT Software	12.4.0 <small>Note 5</small>

2 Assessed Requirements

2.1 Implementing Regulation (EU)2020/1170

2.2 Compliance Requirements for MED/4.35, 4.37, MED/4.38b and MED/4.38d Notes 6&7

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) Resolution MSC.302(87)	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 (2011) with Am 1 (2016)	Maritime navigation and radiocommunication equipment and systems — Digital interfaces Part 450: Multiple talkers and multiple listeners — Ethernet interconnection
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

DoC071B VMFT CAT 2

3.2 User Guide

Radar/Chart Radar User Guide Part No. 65900010-15
VisionMaster Ships Manual Part No.65900011V1- 19 Rev A
VisionMaster Ships Manual Part No.65900011V2- 19 Rev A

3.3 Test Reports

IEC 60945:2002 (inc Corr.1)	QinetiQ/D&TS/SS/CR0607592/1.0, 2006-12-06	5P05969-1, 2015-10-30
	QinetiQ/EMEA/iX/CR070194/Issue 1.0, 2007-12-20	5000657, 2007-06-28
	QINETIQ/MS/EES/TSTR0801152/1.1, 2008-07-08	6P03819-2, 2016-09-13
	QINETIQ/MS/EES/TSTR0801840/1, 2008-09-03	103230862LHD-001, 2017-12-06
	QinetiQ/MS/EES/TC0802918, 2008-10-17	P18-0055-1, 2018-12-04
	MET EMC19618-EN60945, 2006-08-28	103230862LHD-001 Issue 4, 2018-01-02
	75919870 Report 04 Issue 1, 2013-04-29	QinetiQ/EMEA/iX/CR0802757/Issue 1.1, 2008-02-19
	75921754 Report 01 Issue 1, 2013-04-25	QinetiQ-MS-EES-TC0905317, 2009-12-14
	75920230 Report 01 Issue 1, 2012-11-22	QINETIQ/MS/EES/TSTR0903808/3.0, 2009-12-14
	75924948 Report 01 Issue 1, 2014-01-07	QINETIQ/TEG/TECS/TSTR1000030, 2010-08-19
	75909781 Report 02 Issue 01, 2010-08-24	QinetiQ/MS/EES/TSTR0801808-1, 2008-08-29
	75931934 Report 01 Issue 1, 2015-12-05	JA 340-8596-1, 2006-07-14

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Test Reports - continued

IEC 60945:2002 (inc Corr.1) -continued	2008-3143, 2008-03-11	JA 340-8596-2, 2006-05-08
	2005-3112 Rev 01, 2005-03-14	JA 340-8596-4, 2006-03-16
	2013-3038, 2013-04-03	TL1016, 2006-10-30
	DANAK-198181, 2005-12-23	TL1316, 2009-06-29
	DANAK-198236, 2006-01-20	416.095.1, 2016-06-17
	DANAK-1910255, 2008-08-18	416.095.2, 2016-05-11
	DANAK-1912564, 2012-11-02	416.095.3, 2016-05-18
	DANAK-198899 Revision 2, 2007-12-10	962, 2017-03-08
	DANAK-1910255, 2008-08-181910	8P06394 CSD, 2018-08-27
	DANAK-1910681 Revision B, 2010-01-25	75948540 Report 01 Issue 1, 2020-06-12
75948540 Report 02 Issue 2, 2020-06-22	-	
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
IEC 62288:2014	ECDIS Monitor (LCD) Test Procedure and Report, 2005-04-13	TR-V12-NML-028, 2019-09-02
	TR-V10-NML-004, 2017-09-18	TR-V11-NML-017, 2018-11-12
	TR-V10.0.1-NML-010, 2018-02-12	362879 Issue 00, 2018-11-06
	TR-V10.0.1-NML-011, 2018-02-12	TR-V11.1-NML-021, 2018-12-20
	TR-V12.2-NML-042 Issue: 1, 2020-02-20	TR-V12.4-NML-055 Issue: 1, 2020-09-30
	278-226, 2020-06-17	-
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
Miscellaneous	VisionMaster FT Release 10.0.0 System Performance Test Report, 2017-11-27	TR-V12-NML-033, 2019-08-08
	TR-V10.0.1-NML-012, 2018-02-16	TR-V11.1-NML-023, 2018-12-20
	TR-V11-NML-019, 2018-11-12	TR-V11.1-NML-024, 2019-01-03
	TR-V12.2-NML-041 Issue: 1, 2020-02-20	-

3.4 Build Status

3.4.1 Hardware

VisionMaster FT Technical File VMFTRPRT Issue 13

Dated

2019-10-28

3.5 Notes

- Note 1 The 32SDR005 or 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 (for ECAT2), CAT1C Chart Radar (for ECAT2C), CAT2 Radar for (CAT2) 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, ECDIS and conning display. 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 If applicable (EU)2020/1170 gives a last placing on board date of 29/08/2021 for equipment approved against the test standards listed above. See Conditions of Validity.
- Note 7 Image transfer to a Voyage Data Recorder via IEC 61162-450 Interface.



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4 U.S. Coast Guard Number

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

165.116/EC2443 (Radar Equipment CAT 2)

165.217/EC2443 (Radar Equipment for high speed craft applications (CAT 2H))

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: *T. J. Twynam*
(Tom Twynam)

Date: 2020-10-14

On behalf of TÜV SÜD DANMARK ApS