



TYPE APPROVAL CERTIFICATE

Certificate No:
TAA000024U
Revision No:
6

This is to certify:

That the Central Alert Management System

with type designation(s)
VisionMaster FT

Issued to

Northrop Grumman Sperry Marine B.V. - UK Branch
New Malden, Surrey, United Kingdom

is found to comply with

DNV rules for classification – Ships
IMO Resolution MSC.302(87) Performance standards for Bridge Alert Management
MSC.191(79) Performance standards for presentation of navigation-related information on shipborne navigational displays
IMO Res. A.694(17) General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids

Application :

See page 2.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2022-05-24**

for **DNV**

This Certificate is valid until **2024-02-12**.

DNV local station: **Southampton**

Approval Engineer: **Steinar Kristensen**

Trond Sjøvåg
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 251

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Product description

VisionMaster FT Central Alert Management System is available either as a part of a Multi Function Display (MFD) or as a dedicated CAM system, consisting of the below modules:

VisionMaster FT Hardware modules, alternative 1:

Unit	Description	Type Number	Comment
Computer	Processor unit	65901AX	<i>X= C or E or F or N or P or T or U</i>
Display	LED display unit, 25.5"	65926X	<i>X= H or L or P</i>
Interface Unit	PCIO Interface Unit	65900AX	<i>X= A or B</i> 9x RS422/RS232 input 6x RS422/RS232 outputs
Control Panel	HMI control	65903AX or 65903KX	<i>X=F or G or H</i> 2x USB, 1x PS2 connectors
Data Control Unit	Digital Interface Unit	65932605	
Network Switch	Managed Ethernet Switch, EDS-405A or EDS-408A or EDS-G509	RA 00004325 RA 00014423 RA 00009746	<i>5 x RJ45 ports</i> <i>8 x RJ45 ports</i> <i>9 x RJ45 ports</i>

VisionMaster FT Hardware modules, alternative 2:

Unit	Description	Type Number	Comment
Computer & Display	Panel computer with integrated display unit, 25.5" display	65926AA or 65926AB	
Interface Unit	PCIO Interface Unit	65900AX	<i>X= A or B</i> 9x RS422/RS232 input 6x RS422/RS232 outputs
Control Panel	HMI control	67003AH or 67003KH	3x USB connectors
Data Control Unit	Digital Interface Unit	65932605	
Network Switch	Managed Ethernet Switch, EDS-G509	RA 00009746	<i>9 x RJ45 ports</i>

All units listed above are to be installed in a protected environment, i.e. indoor.

Software modules

- | | Version |
|---------------------|---|
| • Operating System: | Windows 10 IoT Enterprise LTSC, Version: 1809 |
| • VisionMaster FT: | 15.1.x |

Application/Limitation

- The system is to be installed as specified in equipment manuals.
- The VisionMaster FT Central Alert Management system has been tested in a Multi-Function-Display (MFD) system with functions for ECDIS, Radar and Conning.
- The VisionMaster FT Central Alert Management complies with the applicable requirements for BAM compliant equipment (EUT function type P *) and CAM system (EUT function type Q *).
- When installed in a Multi-Function-Display (MFD) system, the VisionMaster FT Central Alert Management may, depending on configuration, support:
 - Revaluation of alerts (EUT function type R *), as described in equipment manuals.
 - Legacy alert conversion (EUT function type S *)

* As defined in IEC 62923-1

Tests carried out

- Environmental testing: IEC 60945 (2002) incl. Corr.1 (2008)
- Serial interface testing: IEC 61162-1 (2016) and IEC 61162-2 (1998)
- Presentation of navigation information: IEC 62288 (2014)
- Bridge Alert Management: IEC 62923-1 (2018) and IEC 62923-2 (2018)
- Performance testing: DNV Type Approval program 847.40 for Central Alert Management system

Type Approval documentation

DNV No	Document ID	Rev.	Description
87		2022-05-19	Report: NGSM, VisionMaster FT Central Alert Management, CAM-HMI Type Approval Test Report
84	5P05969-1	1	Report: SP, IEC 60945 test report for PCM4-Q87 Marine Computer
83	P21-0035-2	2021-06-24	Report: EKTOS, Supplementary IEC60945 test report for PCM4-Q87 computer
70	5P03620	1	Report: SP, EMC and environmental test report for DuraPanel 24 Glass and DuraPanel 26 Glass
69	P19-0152-1	2019-09-03	Report: EKTOS, EMC and environmental test report for Slim line 25,5" Panel PC
60	362879	2018-11-06	Report: Nemko, Display performance tests for Visionmaster Net 26" Panel PC
59	8P06394 CSD	2018-08-27	Report: RISE, Compass Safe Distance test of Panel PC
58	P18-0055-1	2018-12-04	Report: EKTOS, EMC and environmental test report for VisionMaster Net 26" Panel PC
55	582/1	2008-11-19	Certificate: BSH, Compass Safe Distance for DCU 5
54	D/16/4419/04	2017-08-11	Report: Tesseq GmbH, EMC test report for DCU 5
51		2018-12-20	Report: NGSM, VisionMaster FT Central Alert Management, CAM-HMI Type Approval Test Report
50	9401/12	1	Report: Autoteam, Environmental test report of DCU5
49	D/12/3938/02	2012-07-27	Report: Tesseq, EMC test report of DCU5
48	Man_DCU5_2.10_eng		Manual: Veinland, Technical manual for Data Control Unit-DCU5
45	QINETIQ/TEG/TECS/TS TR1000308	2010-10-22	Report: QinetiQ, EMC and environmental test report for VisionMaster FT Client Server Radar
44	TL1316	2009-06-29	Report: Mariner System, EMC and environmental test report for EDS-G509 series Ethernet switches
43	TL1016	2006-10-30	Report: Mariner System, EMC and environmental test report for EDS-510 and EDS-405A series Ethernet switches
40	298985-5	2016-02-25	Report: Nemko, Display performance test for DuraMON 26 Classic display (65926P)
35	103230862LHD-001	4	Report: Intertek, EMC test report of VisionMaster 340 Pedestal Console (65926P)
34	103230862LHD-001 Climatic and Vibration	1	Report: Intertek, Environmental test report of VisionMaster 340 Pedestal Console (65926P)
32	6P03819-2	2016-09-13	Report: SP, EMC and environmental test report of PCM4-Q87 Marine Computer
29	DOC102351-1	2	Report: Hatteland Display, Minimum brightness test of GDCX keypad controller Rev 4 (65926H)
28	21009	0	Report: Applica, EMC and environmental test report of HD 26T22 MMD-MA1-FAGP-ES (65926H)
24	DOC102352-4	2	Report: Hatteland Display, Conformance test report for HD 26T22 MMD-MA1-FAGA-ES display (65926H)
21	65900012	16	Manual: NGSM, Vision Master ECDIS User Guide
20	65900006	4	Manual: NGSM, BridgeCard Quick Reference for VisionMaster FT Central Alarm Management (CAM)
19	DANAK-1912564	2012-11-02	Report: Delta, EMC and environmental test report for PCM4-H77 marine computer
18	DANAK-1911472	2011-07-18	Report: Delta, EMC and environmental test report for DuraMON 26 WS monitor (65926L)

DNV No	Document ID	Rev.	Description
17	CR0607592-1.0	2006-12-06	Report: QinetiQ, EMC and Environmental test report for VisionMaster FT Radar
16	75906944	1	Report: TÜV SÜD, EMC test report for MRD26 26" LCD Marine Monitor
15	65900011V2	21	Manual: Northrop Grumman Sperry Marine, VisionMaster Ships Manual- Vol 2
14	65900011V1	21	Manual: Northrop Grumman Sperry Marine, VisionMaster Ships Manual- Vol 1
13	5006934	2	Report: Northrop Grumman Sperry Marine, ECDIS Monitor LCD Test Procedure and Report- ISIC 26in Monitor
12	75931934	1	Report: TÜV SÜD, Environmental test report for PCM4-Q87 Marine Computer in VMFT 340 Console
10	TSTR1201598	2012-07-03	Report: QinetiQ, EMC and environmental test report for ISIC 25,5 Inch Monitor
9	TSTR1102226	2011-08-22	Report: QinetiQ, IEC 61174 (2008), IEC 62388 (2008), IEC 60945 (2002) and IEC 62288 (2008) test report for DuraMON26WS display
8	TSTR1001283	2010-04-26	Report: QinetiQ, IEC 61174 (2008) and IEC62288 (2008) test report for VisionMaster FT ECDIS with 26" Monitor
6	TSTR0900216	1	Report: QinetiQ, IEC 62288 (2008) test report for VisionMaster FT ECDIS
5	TC0905317	2	Report: QinetiQ, VisionMaster Vibration test report for G43 Processor and 25.5 Display
4	E12140.01	2012-08-01	Report: Nemko, Colour verification test report for MD 26 KM05 monitor
3	DANAK-1910681-B	2010-01-25	Report: Delta, EMC and environmental test report for PCM4-G43 marine computer

Marking of product

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location. In addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage and reference to the Type Approval certificate number.

Periodical assessment

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

The scope of the periodical/renewal assessment is to verify that the production quality conditions stipulated for the type approval are complied with and that no alterations are made to the product design or its components and/or materials without appraisal by the Society.

This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>