



EC TYPE EXAMINATION (MODULE B) CERTIFICATE

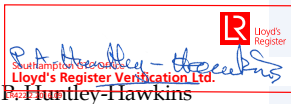
This is to certify that:

LLOYD'S REGISTER VERIFICATION LIMITED (LRV), designated as a "notified body" under the terms of the Merchant Shipping (Marine Equipment) Regulations 2016 (S.I. 2016 No. 1025) did undertake the relevant type approval procedures for the equipment identified below which was found to be in compliance with the essential Navigation equipment requirements of Marine Equipment Directive (MED) 2014/90/EU and Commission Implementing Regulation (EU) 2018/773 indicating design, construction and performance requirements and testing standards for marine equipment, subject to any conditions in the Design Appraisal Document attached hereto.

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| Manufacturer (Applicant) Address | Northrop Grumman Sperry Marine BV 118 Burlington Road New Malden Surrey, KT3 4NR United Kingdom (UK) |
| Reference Regulation Item (No & Item designation) | Regulation (EU) 2018/773 MED/4.34 Radar Equipment CAT 1 MED 4.37 RADAR EQUIPMENT FOR HIGH SPEED CRAFT APPLICATIONS (CAT 1H AND CAT 2H) MED 4.38(A) RADAR EQUIPMENT APPROVED WITH A CHART OPTION, NAMELY: (A) CAT 1C MED 4.38(C) RADAR EQUIPMENT APPROVED WITH A CHART OPTION, NAMELY: (C) CAT 1HC FOR HSC |
| USCG Category Number | 165.115 - In Relation to MED/4.34 165.216 - in Relation to MED/4.37 165.217 - in Relation to MED/4.37 |
| Product Type | System types known and designated as:- a) VisionMaster FT, CAT1 34, - Client/Server Radar Systems b) VisionMaster FT, CAT1C 34, - Client/Server Chart Radar Systems c) VisionMaster FT, CAT1H 34, - Client/Server Radar Systems d) VisionMaster FT, CAT1HC 34, - Client/Server Chart Radar Systems Hardware component parts of the equipment above are listed in the attached design appraisal document. Software version: - 11.0.0 |
| Product Description | Shipborne Radar Equipment (IEC 62388 Category 1 & 1C) Radar Equipment for High Speed Craft Applications (IEC62388 Category 1H & 1HC) |
| Specified Standard | IMO Resolutions: A.278 (VIII), A.694 (17), MSC.191 (79), MSC.192 (79), MSC.302(87), MSC.1/Circ.1349, MSC.36 (63) -13, MSC.97 (73) - 13 and ITU-R M.1177-4 (04/11). IEC 60945 (2002) incl. IEC 60945 Corr. 1 (2008) IEC 61162-1 Ed5.0 (2016), IEC 61162-2 Ed1.0 (1998) and IEC 61162-450 (2011) IEC 62288 Ed. 2.0(2014-07) IEC 62388 Ed. 2.0 (2013) |

The attached Design Appraisal Document (schedule) forms part of this certificate.

This certificate remains valid unless cancelled or revoked, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory in service.

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|-----------------|----------------|-------------|--|
| Date of issue | 12 June 2019 | Expiry date | 24 April 2024 |
| Certificate No. | MED 1900003/M2 | Signed |  |
| Sheet No | 1 of 5 | Name | P. Huntley-Hawkins |

For and on behalf of Lloyd's Register Verification
LRV EC Distinguishing No. 0038

Note:

This certificate is issued under the authority of the MCA.

This certificate is not valid for equipment; the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify the notified body named on this certificate of any modification or changes to the equipment in order to obtain a valid Certificate.

This equipment is covered by the scope of the "Agreement between the European Community and the United States of America on Mutual Recognition of Certificates of Conformity for Marine Equipment signed February 27th, 2004 and amended by Decision No.1/2018 dated February 18th, 2019 according to U.S. Coast Guard approval category USCG Module B number: 165.115/EC0038, 165.216/EC0038 & 165.217/EC0038

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production Module certificate (Module D, E or F)

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| Issue number 1 |

DESIGN APPRAISAL DOCUMENT

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| Date 12 June 2019 | Quote this reference on all future communications UKITSO/ETS/TA/PHH/WP35151589 |
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ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. MED 1900003/M2

The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions and European Union legislation for the EC Type Examination of Marine Equipment for use on Merchant Ships Registered in the European Economic Area.

This Design Appraisal Document (schedule) forms part of the Certificate.

This Certificate is an amendment of Certificate No. MED 1900003/M1.

HARDWARE DETAILS

Schedule 1 - Type numbers of processor and display unit.

- Processor - 65901AS (Radar Server), 65901AC (Radar Client)
- Display - 65926H, 65926P, 65926L (25.5") or 65823A, 65923C (23.1")
- PCIO Interface Unit - 65900AA or 65900AB
- Control Panel - 65903AH, 65903KH
- Network Switch - RA00009746
- Security Device - 32SDR005 or 32SDT005

NOTES

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, CAT1C Chart Radar or Total Watch as appropriate.
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.
3. This approval remains valid for Minor software amendments, as allowed by the 11.0.x numeric format, where written details of the modifications have been submitted to and accepted by the Notified Body.
4. Image Transfer to a Voyage Data Recorder via IEC 61162-450 Interface.

Schedule 2 - Type numbers of transceivers, turning units and antennae.

- 10kW X-Band Transceivers and Turning Units - 65910*AR, 65910*AT, 65910*AU, where * can be M, N, P, T or W.
- 25kW X-Band Transceivers and Turning Units - 65925*AR, 65925*AT, 65925*AU, where * can be M, N, P, T or W.
- 10kW X-Band Transceivers (Bulkhead) - 65810E, 65810F, 65810G, 65810H and 65810L
- 25kW X-Band Transceivers (Bulkhead) - 65825E, 65825F, 65825G, 65825H and 65825L
- X-Band Turning Unit (Bulkhead)- 65901BAR, 65901CAR, 65901CAT or 65901CAU
- X-Band Antennae - 65604A, 65606A or 65608A
- S-Band Transceivers - 65830M*R, 65830N*R, 65830N*T or 65830N*U, where * can be E,F,G,H,J,K,L,M,P,Q,R or S
- S-Band Transceivers (Bulkhead) - 65831A or 65831B
- S-Band Turning Unit - 65830B*R, 65830C*R, 65830C*T or 65830C*U where * can be E,F,G,H,J,K,L,M,P,Q,R or S
- Scanner Control Unit - 65837AB, 65837AC, 65837AE, 65837AF or 65837AH
- S-Band Antennae - 65612A

Schedule 3 - Ancillary Units

- Network Serial Interface - 4802181
- Mains Distribution Unit - 65900685
- Kit Format Units - 65900614, 65900615, 65900668, 65900635 and 65900625
- Secure Maritime Gateway - 67050FA



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ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. MED 1900003/M2

APPROVAL DOCUMENTATION

| | |
|---|------------|
| QINETIQ/D&TS/SES/TC0703744 | 30.03.2007 |
| Change Note 65612/124 | 07.02.2012 |
| Change Note 65801/077 | 06.03.2012 |
| Change Note 65901/115 | 04.11.2013 |
| Change Note JLR037 Issue 1 | 28.10.2016 |
| Change Note JLR039 (SC4 EEPROM) Issue 2 | 14.03.2017 |
| Change Note JLR042 | 15.06.2017 |
| Change Note JLR043 | 26.06.2017 |
| Change Note JLR045 issue 2 (VisionMaster 340 Pedestal Console) | 02.01.2018 |
| Change Note JLR048 issue 1 (ISIC 65926P Display) | 22.05.2018 |
| VisionMaster Technical File | 10.06.2015 |
| VMFT V.7.0 Impact Assessment + Results | 18.02.2015 |
| VMFT V.8.0 Impact Assessment + Results | 15.04.2016 |
| IA-V10-NML-008 (Impact Assessment VMFT 10.0.0) | 18.09.2017 |
| IA-V10.0.1-NML-009 (VMFT V10.0.1 Impact Assessment) | 13.02.2018 |
| GA-V11-NML-002 (Gap Analysis IEC 61162-1 Ed.4 to Ed.5) | 18.10.2017 |
| IA-V11-NML-011 (Impact Assessment VMFT V11.0.0) | 11.12.2018 |
| Radar/Chart Radar User Guide, 65900010-14 Rev C | - |
| VisionMaster Ships Manual 65900011V1-18 Rev A | - |
| VisionMaster Ships Manual 65900011V2-18 Rev A | - |
| Hatteland Display, HD 26T22 MMD - IEC 60945 & IACS E10 Statement DOC205830-1-1-Rev. 3 | Undated |

TEST REPORTS

| | |
|---|------------|
| DANAK-196393 | 04.09.2002 |
| BO613465/1 | 24.12.2004 |
| ECDIS Monitor, LCD, Test Procedure and Report | 13.04.2005 |
| DANAK-198181 | 23.12.2005 |
| DANAK-198236 | 20.01.2006 |
| JA 340-8596-4 | 16.03.2006 |
| JA 340-8596-2 | 08.05.2006 |
| JA 340-8596-1 | 14.07.2006 |
| MET EMC19618-EN60945 | 28.08.2006 |
| TL1016 | 30.10.2006 |
| QINETIQ/D&TS/SS/CR0607592/1.0 | 06.12.2006 |
| Sperry Marine Report 5000657 | 28.06.2007 |
| BSH 46162/0040380/07 | 12.09.2007 |
| DANAK-198899 Revision 2 | 10.12.2007 |
| QINETIQ/EMEA/iX/CR070194/Issue 1.0 | 20.12.2007 |
| QINETIQ/EMEA/iX/CR0802757/Issue 1.1 | 19.02.2008 |
| DNV 2008-3142 | 11.03.2008 |
| QINETIQ/MS/EES/TSTR0801152/1.1 | 08.07.2008 |
| DANAK-1910255 | 18.08.2008 |
| QINETIQ/MS/EES/TSTR0801808/1 | 29.08.2008 |
| DNV 2008-3464 | 18.09.2008 |
| QinetiQ/MS/EES/TC0802918 | 17.10.2008 |
| QinetiQ/MS/EES/TC0803242 | 14.11.2008 |
| TL1316 | 29.06.2009 |



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|---|---------------|
| QINETIQ/MS/EES/TC0905317 | 14.12.2009 |
| QINETIQ/MS/EES/TSTR0903808/3.0 | 14.12.2009 |
| QINETIQ/MS/EES/TSTR0904084/3 | 15.12.2009 |
| TUV 75906944 Report 01 Issue 1 | 14.01.2010 |
| DANAK-1910681 Revision B | 25.01.2010 |
| DNV 2010-3124 rev. 2 | 13.08.2010 |
| QINETIQ/TEG/TECS/TSTR1000030 | 19.08.2010 |
| QINETIQ/TEG/TECS/TSTR1000308 | 22.10.2010 |
| QINETIQ/TEG/TECS/TC1100272 | 02.02.2011 |
| QINETIQ/TEG/TECS/CR1100320 | 14.03.2011 |
| DANAK 1911472 | 18.07.2011 |
| QINETIQ/TEG/TECS/TSTR1102226 | 22.08.2011 |
| QINETIQ/MS/WD/TSTR1201598 | 03.07.2012 |
| DANAK 1912564 | 02.11.2012 |
| TUV 7590230 Report 01 Issue 1 | - |
| TUV 75924948 Report 01 Issue 1 | January 2014 |
| TUV 75931934 Report 01 Issue 1 | December 2015 |
| SP4P07869 | 05.12.2014 |
| SP4P00022-2 | 06.05.2014 |
| SP5P05969-1 | 30.10.2015 |
| VisionMaster FT Release 10.0.0 Client Server Radar Performance Test Report, Issue 1 | 29.08.2017 |
| VisionMaster FT Release 10.0.0 System Performance Test Report | 04.09.2017 |
| TR-V10-NML-004 (IEC 62288-2014 Test Report), Issue 2 | 18.09.2017 |
| TR-V10-NML-005 (IEC 62388-2013 Test Report), Issue 2 | 18.09.2017 |
| APPLICA Test and Certification, 21009, rev 0 | 10.02.2017 |
| Hatteland Display, DOC102352-4, rev 2 | 03.04.2017 |
| Hatteland Display, DOC102351-1, rev 2 | 05.04.2017 |
| Hatteland Display, DOC102352-3, rev 1 | 11.11.2016 |
| TR-V10.0.1-NML-010 (IEC 62288 - 2014 Test Report) | 12.02.2018 |
| TR-V10.0.1-NML-011 (MSC.302(87) Test Report) | 12.02.2018 |
| TR-V10 0 1-NML-012 (System Performance Test) Issue 2 | 16.02.2018 |
| TR-V11-NML-015 (IEC 61162-1 - 2016 Test Report) | 12.11.2018 |
| TR-V11-NML-017 (IEC 62288 - 2014 Test Report) | 12.11.2018 |
| TR-V11-NML-018 (IEC 62388 - 2013 Test Report) | 12.11.2018 |
| TR-V11-NML-019 (System Performance Test) | 12.11.2018 |
| 103230862LHD-001 (Intertek Environmental Test Report) | 06.12.2017 |
| 103230862LHD-001 ISS 4 (Intertek EMC Test Report) | 02.01.2018 |
| 416.095.1 (kmf_suv_magicnetgwr) | 17.06.2016 |
| 416.095.2 (kmf_klima_magicnetgwr) | 11.05.2016 |
| 416.095.3 (emc_nomatronics_magicnetgwr) | 18.05.2016 |
| 962 (CSD_MagicNet) | 08.03.2017 |

CONDITIONS OF CERTIFICATION

1. Production items of the subject equipment are to be manufactured in accordance with either an approved Production Quality Assurance system (Module D), a Product-Quality assurance system (Module E) or a Product Verification Process (Module F). The wheelmark cannot be affixed to the product until a conformity assessment module is in place
2. Each item, batch or lot of the equipment is to be issued with a "Declaration of Conformity" and have the "Mark of Conformity" affixed after a conformity assessment module is in place



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ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. MED 1900003/M2

SOFTWARE VERSIONS

11.0.0

STANDARDS NOT APPLICABLE

The following MED specified standards do not apply to this product:
IEC 61162-3 ed1.2 Consol. with am1 ed. 1.0 (2010-11) and am2 ed. 1.0 (2014-07)
IEC 61162-460 ed1.0 (2015-08)

PLACE OF PRODUCTION

Northrop Grumman Sperry Marine B.V.
118 Burlington Road,
New Malden
Surrey
KT3 4NR
United Kingdom (UK)



Peter Huntley-Hawkins
Principal Specialist
Engineering Systems
UK&I Technical Support Office, Marine & Offshore
For and on behalf of Lloyd's Register Verification
LRV EC Distinguishing No. 0038