

TYPE EXAMINATION CERTIFICATE

This is to certify:

That the **Miscellaneous**

with type designation(s)
Oceanstar system platform

Issued to

Fugro Norway AS
Oslo, Norway

is found to comply with
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
MSC.191(79) Performance standards for presentation of navigation-related information on shipborne navigational displays

Application :

See page 2

This Certificate is valid until **2022-03-14**.

Issued at **Høvik** on **2017-03-15**

DNV GL local station: **Station Oslo Maritime and CAP**

for **DNV GL**

Approval Engineer: **Steinar Kristensen**

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Jan Tore Grimsrud
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.

Job Id:
Certificate No: **TAA00000VC**

Product description

The units listed below are the HW and SW modules required for the assembly of the Fugro Oceanstar system. The system is available in either Server with Monitor and Keyboard, or Flat Panel Computer configurations, consisting of the below:

Unit	Description	Model name	Comment/versions
GNSS receiver	GPS/GLONASS receiving unit	9205-GNSS receiver	
Power and Interface unit	IPDU Isolating Power Data Unit	Fugro IPDU	Interfaces: 1x RJ 45 Ethernet 2x RS232/RS422 in/out 1x 24V DC power input
Server with Display and Keyboard or	PCS Server	enix 2000	SW version: 2.3.0.x ^{*)} , 2.3.6.x ^{*)} or 2.3.7.x
	Display unit	JH 15T17 MMD-DA1	
	Keyboard	NSI KSML 92S0001-W-MC1	
Flat Panel Computer	Computer with integrated display unit and with touch functionality	HD19T21 MMC-MXX-XCAA or HD19T21 MMC-M4I-PCBG	SW version: 2.3.6.x ^{*)} or 2.3.7.x
Gyro	Vertical Gyro	MS-350-CA-300	
Antenna unit	GNSS antenna unit	Trimble GA 810 or Zephyr Model 2 Rugged or Alison AD491 or Trimble GA 830	
Network Switch	Ethernet switch	Moxa EDS-408A-3M-ST-T or Moxa EDS-208A-M-ST-T	Model Moxa EDS-208A-M-ST-T is to be mounted inside equipment rack specified below
Power Supply	230VAC to 24VDC Power Supply unit	STEP-PS/ 1AC/24DC/4.2 or STEP-PS/ 1AC/24DC/2.5 or STEP-PS/ 1AC/24DC/1.75	All STEP-PS power supply units are to be mounted inside equipment rack specified below
Equipment rack	Cabinet for installation of equipment	Rittal AE 1034.500 or Rittal AE 1045.500	IP66
Options			
GNSS receiver	GPS/GLONASS receiving unit	9200-GNSS receiver	
Mounting bracket	Monitor mounting bracket	HD TMB SX1-B1	
Interface unit	External RS422/485 Interface unit	HT 00262 OPT-A1	4x RS422/485 in/out

^{*)} Without support for GLL sentence

Units listed above, except antenna units, are to be installed in a protected environment, i.e. indoor. Antenna units may be installed in an exposed environment, i.e. outdoor.

Operating System: Windows XP or Windows 7

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Application/Limitation

Equipment is to be installed according to manufacturers installation guide.

Tests carried out

Environmental tests: IEC 60945 (2002) incl Corr. 1 (2008)

Interface tests: IEC 61162-1 (2010), IEC 61162-1 (2016) and IEC 61162-2 (1998)

Presentation of information: IEC 62288 (2014)

Type Approval documentation

DNV GL No	Doc. ID	Rev.	Description
63	2013-3135	0	Report: DNV, EMC and environmental testing of marine computer HT B22GE STC-C4K-M100 incl PCB100293 NMEA interface
61	20053	1	Report: Applicata, EMC and environmental testing of HT 00262 OPT-A1 RS422/485 external module
60	E13184.01	2016-06-29	Report: Nemko, EMC test report for HT 00262 OPT-A1 RS422/485 external module
59	E17009.00	00	Report: Nemko, Excessive power supply test report for STEP-PS/ 1AC/24DC-series power supplies
53	U72596i	2008-05-28	Report: Phoenix Testlab, Environmental test report for STEP-PS/1AC/24DC/2.5
52	U110377E1	2011-09-28	Report: Phoenix Testlab, Environmental test report for STEP-PS/1AC/24DC/4.2 (+additional models)
51	U081212E1	2008-08-21	Report: Phoenix Testlab, Environmental test report for STEP-PS/1AC/24DC/1.75
50	E71517B	2007-11-06	Report: Phoenix Testlab, EMC test report for STEP-PS/1AC/24DC/1.75
49	E70313B	2	Report: Phoenix Testlab, EMC test report for STEP-PS/1AC/24DC/2.5
48	E080182E2	2008-06-11	Report: Phoenix Testlab, EMC test report for STEP-PS/1AC/24DC/4.2
26	2012-3302	2	Report: DNV, HD 19T21 MMD-MA1-FAGA Technical Report
25	2013-3154	0	Report: DNV, HD 19T21 MMC-MWI-PAAA Technical report
24	2012-3081	1	Report: DNV, HD 15T21 STD-MA1-FAGA Technical Report
23	ESLU41836B-IEC	1	Report: MET laboratories, Environmental test report for GA830 antenna
22	EMCS41837-IEC 60945	2014-08-12	Report: MET Laboratories, EMC test report for SPS356 with GA830 antenna
21	E15122.01	2015-07-21	Report: Nemko, Vibration and compass safe distance test for GA830 antenna
20	E08460.04	2012-01-23	Report: Nemko, EMC and environmental test report for enix-2000 and enix-3000 computers
19	2011-3365	01	Report: DNV, EMC and environmental test report for Fugro 9205 GPS/GLONASS receiver
18	2009-3572	04	Report: DNV, EMC and environmental test report for Fugro 9200-G2 GPS/GLONASS receiver
17	2008-3330	01	Report: DNV, EMC test report for SPS551F GPS receiver
16	20113784200	1.0	Report: Telefication, EMC test report for NSI KSML92YXXXX-Z-MCW backlight keyboard
15	E11171.02	2012-03-12	Report: Nemko, EMC test report for MS-350CA-300 Gyro
14	E12003.01	2012-02-10	Report: Nemko, Environmental test report for MS-350CA-

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DNV GL No	Doc. ID	Rev.	Description
			300 Gyro
13	TL1316	Issue 2	Report: Mariner Systems, Moxa EDS-, IM-, SFP- and VPort-series products test report
12	2008-3146	1	Report: DNV, JH 19T12 MMD-DA1-AAAA Technical Report
11	2008-3324	2	Report: DNV, JH 15T17 MMD-DA1-AOAA Technical Report
10	20282	0	Report: Applicia ,HD 26T21 MMD-MA1-FOGA HW04 Technical Report
9	E12086.01	2012-06-15	Report: Nemko, EMC test report for HD 12T21 MMC-MWF-AABA
8	2012-3351	1	Report: DNV, HD 12T21 MMC-MWF-AABA Technical Report
7	2013-3135	0	Report: DNV, HT B22GE STC-C4K-M100 Technical report
6	2012-3311	1	Report: DNV, HT 216 STD Technical Report
5	2012-3372	1	Report: DNV, HD 24T21 MMD-MA1-FAGP Technical report
4	2011-3481	1	Report: DNV, HD 24T21 MMD-MA1-FAGA Technical Report
3	2013-3122	0	Report: DNV, HD 24T21 MMC-MYI-HABA Technical Report
2	2011-3475	1	Report: DNV, HD 24T21 MMC-MJD-AAB2 Technical Report
1	20178	0	Report: Applicia, HD 24T21 MEC-M3K-AAB9-ES Technical Report

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.

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.