



EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB000004E
Revision No:
2

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV AS under the authority of the Government of Norway.

This is to certify:

That the Rate-of-turn indicator (ROTI)

with type designation(s)
Bridge Mate Navigation Display

Issued to
Marine Technologies LLC
Egersund, Norway

is found to comply with the requirements in the following Regulations/Standards:

Regulation **(EU) 2020/1170**,
item No. MED/4.9. SOLAS 74 as amended, Regulations V/18, V/19 & X/3, IMO Res. A.526(13), IMO Res. A.694(17), IMO Res. MSC.36(63), IMO Res. MSC.97(73), IMO Res. MSC.191(79), IMO Res. MSC.302(87)

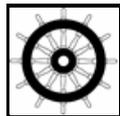
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2026-04-29**.

Issued at **Høvik** on **2021-04-30**

DNV local station:
Norway CMC, West

Approval Engineer:
Steinar Kristensen



Notified Body
No.: **0575**

for **DNV AS**

Sverre Olav Bergli
Head of Notified Body

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), as allowed by the "Agreement between the United States of America and the EEA EFTA states on the mutual recognition of Certificates of Conformity for Marine Equipment" signed 17 October 2005, and amended by Decision No 1/2019 dated February 22nd, 2019.



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-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

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.



Product description

Bridge Mate Navigation Display Rate-of-Turn Indicator Indicator consists of the below modules:

Unit	Component	Note
Computer	MT-COMPUTER-300 <i>or</i>	Computer with on-board DVI interface
	MT-COMPUTER-400	
Display	Hatteland HD 13T21 MMD <i>or</i>	DVI interface
	Hatteland HD 17T22 MMD	
Network switches	Netgear GS728TP <i>or</i>	24 ports, 10/100/1000Mbs, PoE, RJ 45
	MT-PoE—SWITCH-1080-8-PORT <i>or</i>	8 ports, 10/100/1000Mbs, PoE, RJ 45
	ORing IGPS-1080-24V	8 ports, 10/100/1000Mbs, PoE, RJ 45
I/O Interface units	MT IOB mK2 (I/O card) <i>or</i>	Listener according to IEC 61162-1 and IEC 61162-2
	MT-PoE-IOB (I/O card)	Thruster/Rudder Interface: ±10V and 4-20mA Listener and talker according to IEC 61162-1 and IEC 61162-2
Options		
NMEA-CONVERTER	MT-NMEA-CONVERTER	Listener and talker according to IEC 61162-1 and IEC 61162-2
Input Device	Keyboard Cherry / MT Type	

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

Software modules

- | | Version |
|-----------------------------------|-------------------------------------|
| • Operating System: | Windows 8.1 Industrial Pro Embedded |
| • Bridge Mate Navigation Display: | 1.6.x.x |

Application/Limitation

- The Bridge Mate Navigation Display Rate-of-Turn Indicator is to be connected to a source approved for output of rate-of-turn information
- The Bridge Mate Navigation Display may in addition repeat the following information:
 - Course over Ground
 - Wind
 - Speed over Ground
 - Depth
- The Bridge Mate Navigation Display is restricted to be used in MT Bridge Mate applications
- The Bridge Mate Navigation Display does not issue alerts, hence testing according to IEC 62923-1 and IEC 62923-2 is deemed as not being applicable.

Type Examination documentation

DNV No	Document ID	Rev.	Description
45	1907-2-29-IGPS-1080-1	V1.1	Manual: ORing, Quick Installation Guide for IGPS-1080-24V
43	202-11136-01	V1.0	Manual: Netgear, Netgear GS728TP Hardware Installation Guide
42	MT-DEV-5648	1.0	Manual: MT, Installation Manual MT-COMPUTER-300 WINDOWS 8.1
40	MT-DEV-5469	1.0	Manual: MT, Maintenance manual for computer based systems
39	MT-DEV-0683	7.0	Manual: MT, Overhead Indicator Display, User and Technical Manual
38	MT-DEV-5653	2.0	Manual: MT, Installation manual MT-COMPUTER-400 Operating Systems
37	INB101192-1	16	Manual: Hatteland, User Manual- Series X G2 Maritime Multi Display (MMD) models
31	141011F	2014-03-11	Report: TesLab, EMC and environmental test report for Netgear GS728TP
30	MRA0000006	2	Certificate: DNV, EU-MR-TA certificate for Maritime Multi Displays and Standard Displays – Series X
29	17A284F	2018-01-25	Report: TesLab, EMC and environmental test report for MT-COMPUTER-400
28	17A283F	2018-01-25	Report: TesLab, EMC and environmental test report for MT-COMPUTER-300

DNV No	Document ID	Rev.	Description
27	T140319D03-E	24.03.2014	Report: CCS, EMC Test Report ORing-IGPS-1080-24V MT-PoE—SWITCH-1080-8-PORT
26	133040F-H	2013-05-30	Report: TesLab, EMC and Environmental tests computer MT 200AC
24	147125F	2014-09-15	Report: TesLab, NMEA CONV IEC 60945 report
23	MT-DEV-5457	0.7	Report: MT, IEC 61162-1 and -450 MT NMEA Converter Test Program
22	MRA0000016	2	Certificate: DNV, Hatteland HD XXT22 MMD Monitor series
20	DOC206405-1	R01	Report: Hatteland, Conformance test report HD 19T22 MMD-MA1-FAGA HTB30-DVI-D
19	DOC206081-1	R01	Report: Hatteland, IEC62288 flicker test report HD 19T22 MMD
18	DOC206452-1	R01	Report: Hatteland, Conformance test report HD 17T22 MMD-MA1-FAGA HTB30-DVI-D
17	DOC206444-1	R01	Report: Hatteland, IEC 62288 flicker test report HD 17T22 MMD
16	T140319D03-RL	00	Report: CCS, Environmental Test Report ORing-IGPS-1080-24V MT-PoE—SWITCH-1080-8-PORT
15	MT-DEV-0683	5.5	Manual: MT, Operations manual Bridge Mate Overhead Panels
14	MT-DEV-5461	2.5	Report: DNV, MT-DEV-5461 Gyro DNV GL Test result signed copy
13	MT-DEV-5450	2.8	Report: DNV, MT-DEV-5450 RoT DNV Test result signed copy

Tests carried out

- Performance testing: ISO 20672 (2007)
- Performance testing: ISO 8728 (2014) ch. 6.8
- Performance testing: ISO 16328 (2014) ch. 6.8
- Environmental testing: IEC 60945 (2002) incl. Corr.1 (2008)
- Presentation of navigation information: IEC 62288 (2014)
- Serial interface testing: IEC 61162-1 (2016) and IEC 61162-2 (1998)

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.