

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB000029X
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 Electronic chart display and information system (ECDIS)

with type designation(s)
BridgeMate ECDIS

Issued to

Marine Technologies LLC
Egersund, Norway

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

Regulation **(EU) 2022/1157**,

item No. MED/4.30. SOLAS 74 as amended, Regulations V/18, V/19, V27 & X/3, IMO Res. A.694(17), IMO Res. MSC.36(63), IMO Res. MSC.97(73), IMO Res. MSC.191(79), IMO Res. MSC.232(82), IMO Res. MSC.302(87), IMO MSC.1/Circ.1503 Rev.1

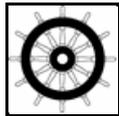
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2024-01-01**.

Issued at **Høvik** on **2023-04-27**

DNV local unit:
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

BridgeMate ECDIS, consisting of the modules below:

Hardware modules:

Unit	Description	Component	Note
Computer with separate Display unit	Computer with embedded graphical processor	MT-COMPUTER-100 <i>or</i>	Computer with on-board DVI interface
		MT-COMPUTER-300 <i>or</i>	
		MT-COMPUTER-600	
	Display Unit	Hatteland HD 17T22 MMD <i>or</i>	DVI interface
		Hatteland HD 19T22 MMD <i>or</i>	
		Hatteland HD 24T22 MMD <i>or</i>	
		Hatteland HD 26T22 MMD <i>or</i>	
		Hatteland HD 27T22 MMD <i>or</i>	
Hatteland HD 32T22 MVD <i>or</i>			
Hatteland HD 55T22 MVD			
<i>or</i>			
Panel PC	Computer with integrated display unit and embedded graphical processor	Compact OS JX/AP <i>or</i>	
		C-Vision 27	
<i>and</i>			
Network equipment	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
Interfaces	I/O Interface units	MT IOB mK2 (I/O card) <i>or</i>	Listener according to IEC61162-1 and IEC61162-2
		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			
Converter	NMEA-Converter	MT-NMEA-CONVERTER	Listener and talker according to IEC 61162-1 and IEC 61162-2
Input Device	Keyboard with trackball	Keyboard Cherry / MT Type	

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

Software modules:

- Ecdis 3.0.x
- IHO S-52 Ed. 4.0.x, IHO S-64 Ed. 3.0.x
- Navtor SDK version 3.0.x
- Windows Embedded 8.1 Pro, Windows 10 IoT Enterprise LTSC (Version 1809)

Application/Limitation

- The installation shall be verified and tested onboard according to Installation manual. Depending on installation ECDIS may comply with DNV rules for classification of ships.
- A dual installation of BridgeMate ECDIS is found to comply with the requirements for ECDIS with Back-up arrangements.
- BridgeMate ECDIS may be optionally provided with HCS remote control.
- BridgeMate ECDIS may be optionally provided with Admiralty Information Overlay.
- BridgeMate ECDIS may interface NAVBOX function for downloading of chart information.
- BridgeMate ECDIS may interface Navtex, and present Navtex information
- BridgeMate ECDIS is tested for Search and Rescue function for presentation of route search patterns.
- BridgeMate ECDIS may present radar overlay and target CPA/TCPA alerts, when interfaced to MT Radar in MT network.
- BridgeMate ECDIS is certified and found to be in compliance with the requirements for MultiFunctionDisplay (MFD), when connected in a MT network. MFD may serve as BridgeMate ECDIS, BridgeMate HCS, BridgeMate TCS, BridgeMate Conning and BridgeMate Nautoscan NX Radar in MT Application Manager Software 5.0.x.x.

Tests carried out

- Performance testing: IEC 61174 (2015)
- Environmental testing: IEC 60945 (2002) incl. Corr. 1 (2008)
- Serial interface testing: IEC 61162-450 (2018) ^{*)}
- Presentation of information: IEC 62288 (2014)
- Bridge Alert Management: IEC 62923-1 (2018) and IEC 62923-2 (2018)

^{*)} For interface to Central Alert Management (CAM) system and for binary file transfer of images to VDR and routes to backup ECDIS

Type Examination documentation

DNV No	Document ID	Rev.	Description
132	MRA0000016	Rev. 6	Certificate: DNV, EU RO MRA certificate for HD xxTxx MMD series display monitors
131	DOC102352-1	Rev. 01	Report: Hatteland Conformance test report HD 24T22 MMD-MA1-FAGA-ES_HTC02-DP
130	DOC102352-4	Rev. 01	Report: Hatteland - Conformance test report HD 26T22 MMD-MA1-FAGA-ES
129	DOC205969-1	Rev. 01	Report: Hatteland - IEC62288 flicker test report HD26T22
128	DOC205958-1	Rev. 5	Report: Hatteland - Minimum brightness test of GDCX
127	T140319D03-RL	00	Report: CCS, Environmental Test Report ORing-IGPS-1080-24V MT-PoE—SWITCH-1080-8-PORT
126	T140319D03-E	2014-03-24	Report: CCS, EMC Test Report ORing-IGPS-1080-24V MT-PoE—SWITCH-1080-8-PORT
125	20094390200	2010-04-22	Report: Telefication, Keyboard-NSI KSML92F1RLED-1077-EN 60945 testing
124	MT-DEV-5344	1.0	Report: MT, MFD Testing-HCS, BN ECDIS900, BM Arpa 2008, BM Conning, BM HCS
123	MT-DEV-5421	2.0	Report: MT, Audible test of external buzzer
122	2012-3398	00	Report: DNV, EMC and environmental testing of Maritime System Computers and PA Equipment
121	147124F	2014-09-15	Report: TesLab, NMEA CONV IEC 60945 TestLab report 147125F
120	MT-DEV-5457	0.7	Report: MT, MT-DEV-5457 - IEC61162-1 and -450 MT NMEA Converter Test Program
118	DOC205984-1		Report: Hatteland, Conformance test report HD 55T22 MVD-AA1-TOGP_HTC02-DP
117	DOC205971-1		Report: Hatteland, IEC62288 flicker test report HD55T22
116	DOC205992-1		Report: Hatteland, Conformance test report HD 32T22 MVD-MA1-AOGP_HTC02-DP

DNV No	Document ID	Rev.	Description
115	DOC205970-1		Report: Hatteland, IEC62288 flicker test report HD32T22_SIGNED
114	DOC206417-1	Rev. 01	Report: Hatteland, Conformance test report_HD 27T22 MMD-MA1-FAGA_HTB30-DVI-D
113	DOC206156-1	Rev. 02	Report: Hatteland, IEC62288 flicker test report_HD 27T22 MMD
112	DOC205967-1	Rev. 05	Report: Hatteland IEC62288 flicker test report HD24T22
110	209201F	2020-11-11	Report: TesLab, EMC and environmental test report for MT-COMPUTER-600-AC
109	209200F	2020-11-11	Report: TesLab, EMC and environmental test report for MT-COMPUTER-600-POE
108	MT-DEV-5451	6	Report: MT, IEC 61162-450 (2018) Test Report for MT Bridge Mate ECDIS
107	MT-DEV-xxxx	2023-03-22	Report: MT, BAM part of ECDIS Type Approval Test Report
104	EDG2111150189 R00701R	2022-01-12	Report: EMTEK, Vibration test report for MT-Switch-P124F2-AC
102	MT-DEV-5750-IEC-62288	A	Report: MT, IEC 62288 Flicker test report for C-Vision 27 panel PC
99	21C289F	2022-06-13	Report: TesLab, EMC and environmental test report for C-Vision 27 Panel PC
96	N. TES_121121_02_RP_001_00	00	Report: MATE SRL, Vibration test report for C-Vision 27 Panel PC
94	MT-DEV-5749	A	Report: MT, Conformance test report C-Vision ECDIS
90	MT-DEV-5748	2.0	DEV-5748 BAM part of ECDIS Type Approval Test Procedure
85			Report: BridgeMate Ecdis IEC 62388 chapter 11
76			Report: BridgeMate ECDIS IEC61174 inc IEC62288 - IEC61162
73	MT-DEV-5617	Rev. 1.0	Report: S-64 MT-DEV-5617 - BridgeMate Ecdis (sw 2.0.X.X)
65	MT-DEV-5440	7.0	Manual: Installation Manual BridgeMate ECDIS
64	MT-DEV-5439	3.1	Manual: BridgeMate ECDIS User Guide
53	MT-DEV-5451	3.0	Test Program for MT Bridge Mate ECDIS

Marking of product

The type designation and name and contact address of the manufacturer shall be affixed visibly, legibly and indelibly to the product. In addition the product shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.