

Certificate No:
MED-B-9942
 Item No:
A.1/4.30
 Job Id:
344.1-000515-11

EC-TYPE EXAMINATION CERTIFICATE

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2013/52/EU, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

This is to certify:

That the Electronic Chart Display and Information System (ECDIS)

with type designation(s)
TECDIS

Issued to

Telko AS
TJØME, Norway

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

Annex A.1, item No. A.1/4.30 and Annex B, Module B in the Directive. IMO Resolutions A.694(17), MSC.191(79) & MSC.232(82)

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

Høvik, 2015-05-26
 for DNV GL AS

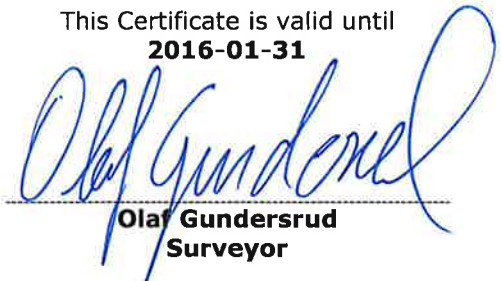


This Certificate is valid until
2016-01-31


Marianne Strand Valderhaug
 Head of Department

Notified Body No.: **0575**

DNV GL local office:
Sandefjord


Olaf Gundersrud
 Surveyor



The Certificate is subject to terms and conditions overleaf. Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this Certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended. The Mark of Conformity may only be affixed to the product and a Declaration of Conformity may only be issued when the production/product assessment module referred to in the council directive, is fully complied with.

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Product description

The TECDIS consists of the following units:

Unit	Location
Main Processing unit (PC)	Protected
Monitor (display)	Protected
Keyboard/trackball	Protected

For details see Appendix.

For latest revision of the Appendix, see <http://exchange.dnv.com/tari>

Application/Limitation

For details see Appendix.

For latest revision of the Appendix, see <http://exchange.dnv.com/tari>

Type Examination documentation

For details see Appendix.

For latest revision of the Appendix, see <http://exchange.dnv.com/tari>

Tests carried out

- Performance testing, IEC 61174 (2008)
- Performance testing, presentation, IEC 62288 (2008)
- Environmental testing, IEC 60945 (2002)
- Serial interface testing, IEC 61162-1 (2010)

Marking of product

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

Mark of Conformity

The manufacturer is allowed to affix the Mark of Conformity according to Article 11 in the Council Directive 96/98/EC on Marine Equipment and shall issue a Declaration of Conformity, only when the module D or E or F of Annex B in the same directive is fully complied with.

Module D: The quality system for production and testing shall be approved by the Notified Body.

Module E: The quality system for inspection and testing shall be approved by the Notified Body.

Module F: Compliance of the products to type as described in this EC Type-Examination Certificate must be verified by the Notified Body who also shall issue a Certificate of Conformity.



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Product description

The TECDIS is consisting of the following components:

Unit	Components	Remark
Main processing unit:	HT C01 TEL-A596, or	<i>Embedded graphics</i>
	HT C01 TEL-D596, or	
	HD 24T21 MEC-M3D-ACB2 or	
	Enix-2077-TEL-D1 or	
	HT C02HJ TEC-C44-AA00	
Display unit:	Hatteland Display JH19T14MMD, or	<i>DVI connection</i>
	Hatteland Display JH20T17MMD, or	
	Hatteland Display JH23T12MMD, or	
	Hatteland Display JH23T14 MMD, or	
	Hatteland Display HD19T03 BOAA, or	
	Hatteland Display HD19T21 MMD, or	
	Hatteland Display HD24T21 MMD, or	
	Hatteland Display HD26T21 MMD, or	
	Furuno MU-201CE, or	
	Furuno MU-231CE or	
	ISIC DuraMON 19 LED or ISIC DuraMON 26 WS	
Keyboard/ Trackball ¹⁾ :	BTC5100C PS/2, or Cherry G84-4100LCMGB-2 or Keytouch Panel QWERTY, <i>and</i>	<i>^{1)Both keyboard and a trackball are required}</i>
	MouseTRAK B-MPIND-XROHS, or Logitech Trackman Marble - ELK, or Keytouch Panel Trackball, or Keytouch Panel Combo ²⁾ ,	
	TECDIS Keypad ³⁾ (Keytouch PN17610415) RCU-018 ³⁾	<i>^{2)Combined unit}</i> <i>^{3)Option}</i>
Loudspeakers(option):	DNH HP-6, or DNH HPS-6	<i>Loudspeaker is required only when display unit does not include a buzzer and RCU-018 is not connected.</i>
Serial Interface:	Moxa Opt.8F	<i>^{4)Enix-2077 only}</i> <i>^{5) HD 24T21 MEC-M3D-ACB2 and HT C02HJ TEC-C44-AA00}</i>
	Moxa CP-114EL-I(CV-150k) ⁴⁾	
	Hatteland Display PCA100293-1 ⁵⁾	
LAN interface:	Intel IQ87-PLH3 ⁶⁾	<i>^{6)HT C02HJ TEC-C44-AA00}</i>
Software Versions:		
TECDIS	4.7.1.x or 4.7.2.x	<i>x ≥ 18</i>
Telko Chart Loader	2.nn	
OS	Windows 7 Windows XP ⁷⁾	<i>^{7) HT C01 TEL-A596 and HT C01 TEL-D596}</i>



Signature

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Application/Limitation

- A dual installation of TECDIS is found to comply with the SOLAS requirements for ECDIS with Back-up arrangements.
- TECDIS may optionally be provided with radar overlay functionality.
- TECDIS may optionally be provided with weather information overlay functionality.
- TECDIS may optionally be provided with C-Routes routing advisory functionality.
- TECDIS may optionally be connected to internet via "secure web-tunneling".¹⁾
- TECDIS may optionally support uploading of SENC delivery (CM93/3 format) via external link.
- TECDIS may be optionally provided with C-Map Update Service functionality.
- TECDIS may be optionally provided with Navtor NavSync chart update functionality.
- TECDIS may provide conning information to a separate monitor.²⁾
- TECDIS may be optionally provided with chart synchronization functionality.
- The TECDIS monitor may optionally be interconnected with a video source via a separate input port for presentation of video. The ECDIS monitor shall be marked with "ECDIS".
- The TECDIS shall be commissioned and tested onboard according to the Installation Manual.

Note

¹⁾ a physical disconnection device (e.g. switch) shall be provided in the vicinity of the TECDIS – and be properly marked

²⁾ dual installation may be required depending on the ship's class notation.

Type Examination documentation

DNVGL No.	Document No.	Document Title
92	IQ87-PLH3 and MAX3535E	LAN and Serial interface documentation
91	DNV 2013-3135	TECDIS Installation Manual
90	DNV 2013-3135	EMC and environmental testing of HT B22GE STC-C4K-M100
89	Applica 20385	EMC and environmental testing of HT 221HK STC-A6D-A000-ES12
88	Applica 20287	EMC and environmental testing of HT 221HJ STC-A4D-A000-ES1
87	Applica 20286	EMC and environmental testing of HT C02HJ STC-A4D-A000-ES2
86	Applica 20373	EMC and environmental testing of HT C02HJ STC-A4D-A000-ES11
85	Applica 20285	EMC and environmental testing of HT C02HJ STC-A4D-A000-ES1
84	20316	Interconnection test of Moxa Multiport Serial board -IEC61162
83	2014.03.04	TECDIS Keypad Conformance test w/video switch
82		TECDIS Keypad user manual
80	25.02.2014	Installation notes - TECDIS Keypad EN
78	2008-3425	DNV Environmental & EMC test report: Keytouch
77	Nemco E12134.04	IEC60945 - Test Report: enix-2067/3076/3000/2077
76		TECDIS Conformance test of a Electronic Chart Display and Information System 26 August 2013



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Type Examination documentation cont.:

DNVGL No.	Document No.	Document Title
74	2013-3135	EMC and Environmental Testing of Maritime Computer HT B22GE STC-C4K-M100
72	2012-3372	EMC and Environmental Testing of Maritime Multi Display HD 24T21 MMD-MA1-FAGP
71	2011-3396	EMC and Environmental Testing of JH 26T11 MMD-MA1-AOBC Maritime Multi Display
70	DOC101183-1	Conformance Test Report of LCD for use in Radar and ECDIS - HD 26T21 MMD-MA4-FAGA
69	DOC101257-1	Conformance Test Report of LCD for use in Radar and ECDIS - HD 24T21 MMD-MA1-FAGA
68	DOC101223-1	Conformance Test Report of LCD for use in Radar and ECDIS - HD 19T21 MMD-MA1-FOGA
67	DOC101028-1	Conformance Test Report of LCD for use in Radar and ECDIS - HD 24T21 MMC-MJD-AAB2
66	DOC101145-1	Series X Corrosion Statement
65	E12140.02	Nemko Test Report Color Verification MD 26 KM05
64	E13034.02	Nemko Test Report Color Verification DuraMon 19 LED
63	DANAK-1911472	Test for Marine Type Approval of MD26 16:10 ECDIS KM05
62	PX25885-1	Type approval test of 19" DuraMon monitor
59	2012-3302	EMC and Environmental testing of Maritime Display HD 19T21 MMD-MA1-FAGA
58	2011-3475	EMC and Environmental testing of panel computer HD 24T21 MMC-MJD-AAB2
57		Conformance test of chart synchronization and new updating means dated 27. June 2013
56		TECDIS Synchronization User Guide 27. June 2013
55		TECDIS Synchronization Installation Guide 25. June 2013
53		Operator Manual
51	DOC100883-4	Conformance Test Report of LCD for use in RADAR and ECDIS - JH23T14MMD-MA1-AABA
50	E501200-2	Test Report - DANAK - Type Approval Testing of 23.1 Inch MarineMonitor
49	E501200-1	Test Report - DANAK - Type Approval Testing of 20.1 Inch MarineMonitor
47	DOC100883-2	Conformance Test Report of LCD for use in RADAR and ECDIS - ISIC MU-231CE



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Type Examination documentation cont.:

DNVGL No.	Document No.	Document Title
46	DOC100883-1	Hatteland - Conformance Test Report of LCD for use in RADAR and ECDIS
45	DOC100883-3	Hatteland - Conformance Test Report of LCD for use in RADAR and ECDIS
44	2010-3124	Technical Report - Hatteland Display AS - EMC AND ENVIRONMENTAL TESTING OF MARITIME DISPLAY JH 23T14 MMD-MA1
43	2010-3243	TECHNICAL REP - HATTELAND DISPLAY AS - EMC AND ENVIRONMENTAL TESTING OF MARITIME COMPUTER HT C01 STD-D100
41		Survey Report
34	2009-3161	EMC and Environmental type testing of Maritime computer HT C01 STD
33	2006-3107	EMC and Environmental type testing of HD19T03MMDII-A1, 19 inch AC monitor
32	DOC100828-4	Telko Conformance test report 19T03
31	DOC100828-3	Telko Conformance test report 23T12
30	DOC100828-2	Telko Conformance test report 20T17
29	DOC100828-1	Telko Conformance test report 19T14
28		TYPE TESTING OFHFM20T07 MIL-E1 Rev. 1 - 2007-3008.pdf
26		JH19T12MMD-AA1-AAAC Technical Report 2008-3143.pdf
25		JH 19T12 MMD-DA1-AAAA Technical Report 2008-3146.pdf
24	2008-3190	MONITOR MODEL JH19T12MMD -AA1-AAAA Technical Report Rev.2.pdf
21		TECDIS conformance test report
17	2008-3418	Dry heat test of Maritime Computer type HT405P4 TEL
7	DOC100541-1	Conformance Test Rep.
6	DOC100496-1	Conformance Test Report
5	DOC100495-1	Conformance Test Report (Hatteland)
3	TELKO S63	Telco - S63 Loader Manual (User Guide) EN
5018*	DOC100193	ECDIS color verification test report
5017*	3010-05-0284	Environmental test report loudspeaker HPS-6 and HP-6
5015*	2005-3248	Compass safe distance testing of Loudspeakers HP-6 and HPS-6 according to IEC 60945
5013*	200112106	Test Report IEC 60065 - Loudspeaker DNH HP-6



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Type Examination documentation cont.:

5011*	A503175	Amendments to "Type Approval testing of MOUSE-TRAK trackball"
5010*	E501359-2	Type Approval testing of MOUSE-TRAK trackball
5004*	DOC100132	ECDIS Colour Verification and Acoustic noise and signals test report
5003*		TECDIS Conformance test report

*Folder no.TAA4363

Place and date
HØVIK, 2015-05-26



Olaf Gundersrud



End of certificate