



DET NORSKE VERITAS

EC TYPE-EXAMINATION CERTIFICATE

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2002/75/EC, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This certificate is issued by Det Norske Veritas under the authority of the Government of the Kingdom of Norway.

CERTIFICATE NO. MED-B-3154

This Certificate consists of 5 pages

This is to certify that the product
Electronic Chart Display and Information System (ECDIS)
with backup

with the type designation
TECDIS

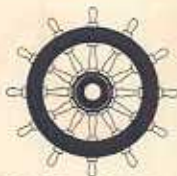
Manufactured by
Telko AS
TJØME, Norway

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. SOLAS 74,
IMO Res.A 817(19) as amended by MSC.64(67) Annex 5 and by MSC.86(70) Annex 4,
IMO Res A.694(17).

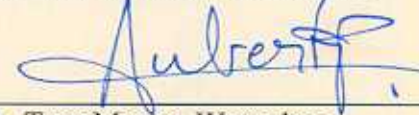
Further details of the product and conditions for certification are given overleaf.

Place and date
Høvik, 2005-08-30
for DET NORSKE VERITAS AS

This Certificate is valid until
2010-08-30




Notified Body No. 0575

for 
Tore Morten Wetterhus
Manager, MTPNO370
Department Systems & Components


Arve Lepsøe
Surveyor

DNV local office:
DNV Sandefjord



 **Notice:** 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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: MED-B-3154
Case No.: TAA4363
File No.: A.1/4.30

Product description

See Appendix.

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

Applications/Limitations

- The ECDIS shall be supplied by an Uninterruptible Power Supply (UPS) in accordance with TECDIS Installation manual.
- The installation shall be verified and tested onboard according to TECDIS Installation manual - Checklist regarding Installation.

Notes

- A dual installation of TECDIS is found to comply with the requirements for ECDIS with Back-up arrangements.
- The TECDIS has been additionally assessed, and found compliant with, the recommendations of SN/Circ.217 and relevant parts of SN/Circ.243.

Type Examination documentation

See Appendix.

Tests carried out

- Performance testing, IEC 61174 Ed. 2.0, including Annex G
- Environmental testing, IEC 60945 Ed. 3.0
- Serial interface testing, IEC 61162 Ed. 2.0

Marking of product


The products shall be marked in accordance with IEC 60945.





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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 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.



Amc
Qm



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APPENDIX REV. NO. 1 (PAGE 1 OF 2)

Product description

TECDIS consisting of the following components:

Main processing unit:	HT 403P4 TEL-A1, or HT B04PM TEL-A1	
Display unit:	JH 20T04 MMD-E1, or JH 20T04 MMD-E11, or JH 19T02 MMD-E1, or JH 19T02 MMD-E11	(20" Colour TFT) (20" Colour TFT w/buzzer) (19" Colour TFT) (19" Colour TFT w/buzzer)
Keyboard:	BTC5100C PS/2	
Trackball:	MouseTRAK B-MPIND	
Loudspeakers:	DNH HP-6, or DNH HPS-6	See Note 1 See Note 1
Software Version:	4.6.x	

Note 1: Loudspeaker is required only when display unit does not contain buzzer.

Type Examination documentation

- TECDIS operator's manual, edition 1.4
- TECDIS installation manual, edition 1.2
- TECDIS conformance test report, revision 2
- ECDIS Colour Verification and Acoustic noise and signals test report, Doc. No.: DOC100132 Rev.1
- Conformance test report of a flat panel display for use as Radar – and ECDIS – Monitor, Doc. No.: 4612/4300107/05/S3330
- EMC/ Environmental Testing of Personal computer HT403P4 STD-A1, Doc. No.: 2004-3139 Rev.01
- EMC/ Environmental Testing Blackbox HTB04PM STD-A1 and HTB04PM STD-A2/24, Doc. No.: 2004-3511 Rev.01
- Type Approval testing of 20.1 inch Maritime Multi Display with remote control and external video and power, Doc. No.: E500247
- Type testing of 19 inch panel display type JH19T02 MMD E1, Doc. No.: 2005-3112 Rev.01
- Type Approval testing of MOUSE-TRAK trackball, Doc. No. E501359-2, as amended by Doc. No.: A503175
- Test Report for Furuno Inmarsat-C SES, FELCOM 15, Report No.: FLI 12-02-047
- Test Report IEC 60065, Doc. No.: 200112106
- Test Report for Furuno Terminal unit IB-583, Report No.: FLI 12-02-036





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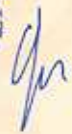
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- Compass safe distance testing of loudspeakers HP-6 and HPS-6 according to IEC 60945, Doc. No.: 2005-3248 Rev.01
- Environmental test of loudspeakers HP-6 and HPS-6, Doc. No.: 3010-05-0284

Place and date
HØVIK, 2005-08-30


ARVE LEPSØE





END OF CERTIFICATE