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 2011/75/EU, 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-8481**

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

with type designation(s)
HLD-ECDIS100

Manufacturer
Beijing Highlander Digital Technology Co., LTD
Beijing, China

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, 2013-07-19
for **Det Norske Veritas AS**

for **Marianne Strand Valderhaug**
Head of Department

Notified Body No.: **0575**

DNV local office:
Tianjin

This Certificate is valid until
2018-07-19

Steinar Kristensen
Surveyor

NORWEGIAN ACCREDITATION PROD 019

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.

Product description
See Appendix.

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

Application/Limitation
- The installation shall be tested onboard according to the commissioning test procedure to be found in the Installatoin Manual Doc. No. HLD 3100.1 IM

Notes
- A dual installation of HLD- ECDIS100 is found to comply with the requirements for ECDIS with Back-up arrangements.
- The HLD-ECDIS100 is found to comply with the requirements for ECDIS in RCDS mode of operation when using HCRF navigational chart data format.
- The HLD-ECDIS100 may be optional provided with radar overlay functionality.

Type Examination documentation
See appendix for details.

Tests carried out
- Performance testing: IEC 61174 (2008)
- Environmental testing: IEC 60945 (2002)
- Serial interface testing: IEC 61162-1 (2010)
- Presentation of information: IEC 62288 (2008)

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.

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.

Certificate No.: MED-B-8481
Item No.: A.1/4.30
Job Id.: 344.1-003681-1

APPENDIX REV. NO. 0 (Page 1 of 2)

Product description

HLD-ECDIS100 consisting of the following components:

Component	Article no	Type	Description/ details
• Main Control Unit	HLD-MCU 200	MC-5157-DC-N8D	ECDIS Computer
- Graphical interface	N/A	DVI	Built in (computer motherboard)
- Audio	N/A	Buzzer	Built in (monitor)
- Serial interface	N/A	RS-422/485	NMEA (only ports labeled NMEA are to be used).
• Display Units (alternatives)	HLD-DU 130	HD 19T21 MMD-MA1-FAGA	19" monitor
	HLD-DU 131	HD 24T21 MMD-MA1-FAGA	24" monitor
	HLD-DU 132	HD26T21 MMD-MA1-FAGA	26" monitor
	HDL-DU-112	JH 23T14 MMD-MA1-AABA	23" monitor
• Human Interface	HLD-IU 200	KSML92YXXXX-Z-MCW	Keyboard with trackball

The Digital Video Interface (DVI) shall be used for all monitor options.

System is to be installed in a protected environment.

Software modules:

- Operating System: Windows XP
- ECDIS900 version: 4.5.4.xx
- IHO presentation Library version: 3.4
- C-Map SDK version: 4.5

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Type Examination documentation

Doc. ID	Description
A-12922	Certificate: DNV, MOXA Marine Computer-MC-5150_5157 series
A-12839	Certificate: Hatteland, Marine Multi Displays and Standard Displays- Series X
A-12836	Certificate: Hatteland, TFT-displays JH 15T15, 15T17, 19T12, 19T14, 20T17, 22T11, 23T12, 23T14, 26T11, 27T11 MMD
HLD3300JL	Drawing: HLD, HLD-ECDIS 100, System Wiring Diagram
HLD 3100.1 IM	Manual: HLD, HLD-ECDIS 100 Installation Manual
HLD 3100CZ	Manual: HLD, HLD-ECDIS 100 Operation Manual
2012-3282	Report: DNV, Environmental test report for MC5150-series maritime computers
DOC101238-1	Report: Hatteland, Conformance test report for HD 19T21 MMD-MA1-FAGA
DOC101237-1	Report: Hatteland, Conformance test report for HD 24T21 MMD-MA1-FAGA
DOC101234-1	Report: Hatteland, Conformance test report for HD 26T21 MMD-MA1-FAGA
DOC101245-1	Report: Hatteland, Conformance test report for JH 23T14 MMD-MA1-AABA
QR01-RD-EC001	Report: HLD, HLD-ECDIS 100 performance test report
QR01-RD-EC01	Report: HLD, IEC 61162 test report, selected tests
VT-120403-1	Report: KDI, Vibration and Low Temperature test for model MC-5150-DC-CP
VT-120403-1	Report: KDI, Vibration and Low Temperature test for model MC-5150-DC (N8D)
VT-120403-3	Report: KDI, Vibration and Low Temperature test for model MC-5150-AC (N8D)
CE-MED-1207-111228	Report: Ming Technology, MOXA Type Approval Report including all Products-Information
122353R-ITCEP26V01	Report: QuieTek, EMC test report for MC series marine computers
UT101021	Report: Universal Testing Inc., Environmental test report

Place and date
HØVIK, 2013-07-19

Steinar Kristensen

Steinar Kristensen

END OF CERTIFICATE