EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB000088V

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV GL SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

That the Radar equipment CAT1, CAT2; with chart option CAT 1C, CAT 2C

with type designation(s)
HLD-RADAR900S

Issued to
Jiangsu Highland Integration Technology Co.,Ltd.
Nantong, Jiangsu, China

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2022/1157,**
item No. MED/4.64 SOLAS 74 as amended, Reg. V/18, 19, X/3, IMO Res. MSC.36(63)-(1994 HSC Code) 13, IMO Res. MSC.97(73)-(2000 HSC Code) 13, IMO Res. A.278 (VIII), A.694(17), MSC.191(79), 192(79), 302(87), IMO MSC.1/Circ.1349, ITU-R M.1177-4 (04/11)

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

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

Issued at **Hamburg** on **2023-10-07**

DNV local unit:
Nantong

Approval Engineer:
Jörg Rebel

Notified Body
No.: **0098**

for **DNV GL SE**

Christine Mydlak-Röder
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 European Community and the United States of America on Mutual Recognition of Certificates of Conformity for Marine Equipment", signed February 27th, 2004, and amended by Decision No 1/2018 dated February 18th, 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 GL SE 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This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

The solid-state S-Band Radar upmast version type HLD-RADAR900S comprises of:

No.	Designation	Type Designation
1	**Transceiver Units** Radar Antenna Radar Transceiver	**One or more units** as defined in separate certificate*) as defined in separate certificate*)
2	**Main Processing Units** Display Electronics	as defined in separate certificate*)
3	**Display Units 250mm** (for Radar CAT 2 & ECDIS, alternatively)	as defined in separate certificate*)
4	**Display Units 320mm** (for Radar CAT 1 & ECDIS alternatively)	as defined in separate certificate*)
5	**Operator Units** (alternatively)	as defined in separate certificate*)
6	**Sensor Interfaces** (alternatively)	as defined in separate certificate*)
7	**Network Switches** (alternatively)	as defined in separate certificate*)
8	**Optional Components**	as defined in separate certificate*)

Software:

No.	Designation	Version no.
1	Application software	V2.0.x with x ≥ 23001
2	Operating system of Display Electronics	Microsoft Windows 7 SP1

† Version numbers as defined in separate certificate*)

Application/Limitation

- The HLD-RADAR900S is to be installed according to manufacturer's instructions.
- IMO SN.1/Circ.MSC.1/Circ.1503: ECDIS that is not updated for the latest version of IMO Standards may not meet the chart carriage requirements as set out in SOLAS regulation V/19.2.1.4.
- Chart data formats: as defined in separate certificate*)
- System interfaces (undisturbed operation): as defined in separate certificate*)
- Backup arrangements (ECDIS): as defined in separate certificate*)

*) The Type Approval certificate TAA000035G for HLD navigation system platforms in its latest revision at the date of placing the system on the market is part of this certificate, for the relevant revision see also https://approvalfinder.dnv.com/.

Tests carried out

- Environmental and EMC testing: IEC 60945 (2002) incl. Corrigendum 1 (2008)
- Interface testing: IEC 61162-1 (2016), IEC 61162-2 (1998) and IEC 61162-450 (2018)
- Presentation testing: IEC 62288 (2014)
- Bridge alert management testing: IEC 62923-1 (2018) and IEC 62923-2 (2018)
- Performance testing: IEC 62388 (2013)

Note:
If compliance with IEC 62288 (2021) been verified, the validity of this certificate to be extended to 2028-10-06.

Type Examination documentation

DNV	Document ID	Rev.	Description

No.			
5	DNV-5-31-HLD-RADAR900S	V01E	Report: HLD, Test acc. to IEC 62388, Clauses 6.7.3, 6.8.3 to 6.8.5, 6.9.2 and 6.9.3
4	DNV-6-28-HLD-RADAR900S	01C	Report: HLD, Tests acc. to IEC 62388
3	HLD10100CZ	1.2	Operation manual for HLD-RADAR900S
2	HLD10100AZ	1.2	Installation manual for HLD-RADAR900S
1	TAA000035G	Latest rev.	Certificate: DNV, HLD navigation systems platforms

Marking of product

According to IEC 60945, Sect.4.9:

The product to be marked with following information, where practicable:

- Identification of the manufacturer,
- Equipment type number or model identification under which it was type tested,
- Serial number of the unit,
- Compass safe distance.

Alternatively, the marking may be presented on a display at equipment start-up, and in case of fixed equipment compass safe distance may be given in the equipment manual.

END OF CERTIFICATE