TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MERB000058F
Revision No:
0

This Certificate is issued by DNV UK Limited based on authorisation of the Maritime & Coast Guard Agency (MCA) as an UK Approved Body to undertake conformity assessments on marine equipment in accordance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2016 as amended.

This is to certify:

That the Radar equipment (CAT 1, CAT 2, CAT 3, CAT 1H, CAT 2H)

with type designation(s)
SYNAPSIS Radar Nautoscan NX

Issued to
Raytheon Anschütz GmbH
Kiel, **Germany**

is found to comply with the requirements in the following Regulations/Standards:
Regulation **MSN 1874 Amendment 6,**
item No. UK/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 **2025-01-06**.

Issued at **London** on **2022-12-05**

for **DNV UK Ltd.**

DNV local unit:
Hamburg – CMC North/East

Approval Engineer:
Jörg Rebel

Approved Body No.: **0097**

Christine Mydlak-Röder
MER Service Responsible

Maritime & Coastguard Agency
UK Approved Body Authorised by the MCA

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-control phase module (D, E or F) of Schedule 2 of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended is fully complied with and controlled by a written inspection agreement with an approved body. The product liability rests with the manufacturer or his representative in accordance with the Merchant Shipping (Marine Equipment) Regulations 2016.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV UK Ltd. of any changes to the approved equipment. 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. This certificate remains valid unless suspended, withdrawn, re-called, or cancelled.

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 Raytheon Anschütz Synapsis Radar Nautoscan NX comprises of the following equipment necessary for functioning:

No.	Designation	Type Designation
1	**Transceiver units** Pedestal / Transceiver Pedestal / Transceiver Pulse Compression Arrays Waveguide coupler	**One or more units** As defined in separate certificate *)
2	**Main Processing Unit** Computer	As defined in separate certificate *)
3	**Display Units CAT 1, CAT 1H** PPI diameter min. 320mm, may be also used for CAT 2 and CAT 3, ECDIS, INS	As defined in separate certificate *)
4	**Display Units CAT 2, CAT 2H** PPI diameter min. 250mm, may be also used for CAT 3, ECDIS, INS	As defined in separate certificate *)
5	**User Interface** Operator Units KVM Equipment	As defined in separate certificate *)
6	**Interfaces** Serial to ethernet converter VDR interface	As defined in separate certificate *)
7	**Network switches** Ethernet switches / Fiber LAN converter	As defined in separate certificate *)
8	**Optional components**	As defined in separate certificate *)

*) The Type Approval certificate TAA00002JU for Synapsis 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.dnvgl.com/.

The following Software is necessary for the Raytheon Anschütz Synapsis Radar Nautoscan NX:

No.	Designation	Type Designation
1	Operating System	Windows 10 IoT Enterprise LTSC
2	Bridge Integration Platform Synapsis Service Tool Synapsis Radar NX Synapsis Naval Radar NX	NB46-001 05.XX.YY (XX ≥ 03) NB48-001 05.XX.YY (XX ≥ 03) NB45-015 05.XX.YY (XX ≥ 03) NB45-016 05.XX.YY (XX ≥ 03)

Type Examination documentation

DNV No	Document ID	Rev.	Description
1	TTD04-11-19	Rev.3	Overview Testreports
2	10000000963 Dok. 4428 10000000964 Dok. 4424		SYNAPSIS Radar NX SYNAPSIS Service Tool SYNAPSIS System Manual SYNAPSIS Naval Radar NX
3	TAA00002JU	Latest	Certificate: DNVGL, Synapsis platform

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)

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