EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00006GB
Revision No:
4

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV AS under the authority of the Government of Norway.

This is to certify:

That the Ship Earth station for use in the GMDSS

with type designation(s)
LT-3100S GMDSS system

Issued to
Lars Thrane A/S
Holte, **Denmark**

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2021/1158,**
item No. MED/5.22. SOLAS 74 as amended, Reg. IV/14, Reg. X/3, Reg. IV/10, IMO Res.A694(17), IMO Res.MSC.36(63)-(1994 HSC Code) 14, IMO Res.MSC.97(73)-(2000 HSC Code) 14, IMO Res.MSC.302(87), IMO Res.MSC.434(98), IMO MSC/Circ.862, IMO COMSAR/Circ.32.

In addition:
IMO Res. MSC.147(77) Revised performance standards for a ship security alert system (SSAS)
IMO Res. MSC.263(84) Revised performance standard and functional requirements for the long range identification and tracking of ships (LRIT)

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

This Certificate is valid until **2025-12-08**.

Issued at **Høvik** on **2022-03-21**

DNV local station:
Denmark CMC

Approval Engineer:
Steinar Kristensen

Notified Body
No.: **0575**

for **DNV AS**
Digitally Signed By: Sjåvåg, Trond
Location: DNV Høvik, Norway
on behalf of

Sverre Olav Bergli
Head of Notified Body

NORWEGIAN ACCREDITATION PROD 019

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 AS 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

Product description

The LT-3100S GMDSS system provides Global Maritime Distress and Safety System (GMDSS) services through the Iridium Satellite System, and consists of the following units:

Unit	Type/Part no.	Comment/ Description	Location
Control Unit	LT-3110S	Master unit with external interfaces and operational user interface and bracket mount. Interfaces: 1 x 12 or 24V DC input power 1 x Antenna Unit 1 x Power 1 x LAN 1 x Handset 1 x AUX connector for • 1x Digital input, • 1x Digital output and • 1 x RS422 NMEA in/out	Protected
Handset	LT-3120	Handset for voice interface, on/off hook detection with LT-3121 cradle	Protected
Cradle	LT-3121	Cradle for LT-3120 Handset	Protected
Antenna Unit	LT-3130	Antenna for Iridium Satellite System and Global Navigation Satellite System (GNSS)	Exposed
Options			
Interface Unit *)	LT-3140S	Interfaces: 4 x LAN (RJ-45 connector) 2 x RS422 NMEA in/out 4 x GPIO for SSAS 4 x CAN for Alarm panels and Printer adapter 1 x 12 or 24V DC input power	Protected
Alarm Panel	LT-3150S	Remote alarm panel with Distress button, DIM-button and sounder	Protected
Alert buttons	91-102073 91-102074	SSAS Alert Button (incl. 50m cable) SSAS Test Button (incl. 50m cable)	Protected
Printer Adapter	LT-3160S	Adapter for connection to GMDSS printer, 36 pin connector	Protected

*) Interface Unit is required for installations that includes Alarm Panel or Printer Adapter or SSAS functionality.

Location specifies the location for the units according to IEC 60945 (2002).

Software modules	**Version**
LT-3100S GMDSS SW	v1.06R-xxxx

Application/Limitation

The LT-3100S GMDSS system:

- shall be installed according to manufacturer's User & Installation Manual.
- includes an integrated Global Navigation Satellite System (GNSS) receiver for position fixing.
- is type approved as Ship Security Alert System, as an option, in accordance with the requirements specified in IMO Res. MSC.147(77)- Revised performance standards for Ship Security Alert System (SSAS).
- is type approved for Long-Range Identification and Tracking (LRIT), as an option, in accordance with the relevant requirements for shipborne equipment in IMO Res. MSC.263(84)- Revised performance standards and functional requirements for the Long-Range Identification and Tracking of ships, using the Iridium as Communication Service Provider (CSP).
- supports combined operation of GMDSS, SSAS and LRIT services.
- supports SSAS and LRIT services in Sea Areas A1, A2, A3 or A4.
- complies with the requirements for Other Network Function (ONF) as specified in IEC 61162-450 (2018)
- can be used for GMDSS services in Sea Areas A1, or A2 or A3 defined by SOLAS 1974 as amended, where Flag states have recognized Iridium as a mobile satellite service for use in the GMDSS.
- complies with the requirements for reception of MSI through the Iridium SafetyCast service and can be used for compliance with the carriage requirements for EGC when such services are made available through the Iridium satellite system.

Tests carried out

- Performance tests: IEC 61097-16 (2019)
- Environmental tests: IEC 60945 (2002) incl. Corr.1 (2008)
- Radio test: ETSI EN 301 441 V2.1.1 (2016)
- Serial interface tests: IEC 61162-1 (2016) and IEC 61162-2 (1998)
- Presentation of information: IEC 62288 (2014)
- Bridge Alert Management: IEC 62923-1 (2018) and IEC 62923-2 (2018)
- Ship Security Alert (SSAS): DNV TA programme 849.01
- Long-Range Identification and Tracking (LRIT): IEC 62729 (2012)

Type Examination documentation

DNV No	Document ID	Rev.	Description
54	75954891 Report 01	1	Report: TÜV SÜD, GNSS testing of the LT-3100S in accordance with IEC 61108-1
53	BSH/454.GNSS/TUVSUDLtd 11	2022-03-09	Report: BSH, Conformance test of integrated GPS receiver
52	64-102821	1.00	Report: Lars Thrane, LT-3100S GMDSS LRIT Certification test report SW v1.06
46	64-102722	1.00	Report: Lars Thrane, LT-3100S GMDSS SSAS Test Report
42	64-102622	1.00	Report: Lars Thrane, Additional Test Cases for modem data with GMDSS
34	64-102504	1.03	Report: Lars Thrane, IEC 61097-16 test report for LT-3100S GMDSS
29	64-102338	2020-11-27	Report: Lars Thrane, RS-422 Test Report for LT-3110S and LT-3140S incl IEC 61162-1 and -2 electrical tests
28	64-102488	1.01	Report: Lars Thrane, IEC 62288 Test Report for LT-3100S
26	071-75946681-000	2020-02-14	Report: TÜV SÜD, IEC 60950-1 (Safety) test report
22	75942068-10	02	Report: TÜV SÜD, Environmental test report for LT-3100 incl. LT-3130 Antenna Unit
21	75932207-04	3	Report: TÜV SÜD, Radio testing of Iridium Core 9523N according to ETSI EN 301 441
20	75936870-08	01	Report: TÜV SÜD, Radio testing of Iridium radio module 9523N according to ETSI EN 301 331
19	75946681-02	Issue 03	Report: TÜV SÜD, EMC test report for LT-3100S GMDSS
18	75946681-07	Issue 02	Report: TÜV SÜD, Environmental test report for LT-3100S GMDSS
17	75946681-05	01	Report: TÜV SÜD, Radio test report for LT-3100S GMDSS, ETSI EN 301 441:V2.1.1

DNV No	Document ID	Rev.	Description
16	95-102251	1.07	Manual: Lars Thrane, LT-3100S GMDSS User & Installation Manual
13	64-102342	1.00	Report: Lars Thrane, IEC 62923 series test report for LT-3100S GMDSS
8	64-102341	1.04	Report: Lars Thrane, IEC 61162 series test report for LT-3100S GMDSS

Marking of product

The type designation and name and contact address of the manufacturer shall be affixed visibly, legibly and indelibly to the product. In addition the product shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.