

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

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 GL AS under the authority of the Government of the Kingdom of Norway.

This is to certify:

That the Echo-sounding equipment

with type designation(s)
Skipper GDS101

Issued to
Skipper Electronics AS
Oslo, Norway

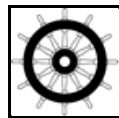
is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2017/306**,
item No. MED/4.58. SOLAS 74 as amended, Regulations V/18, V/19 & X/3, IMO Res. A.224(VII), IMO Res. A.694(17), IMO Res. MSC.36(63), IMO Res. MSC.74(69), IMO Res. MSC.97(73), IMO Res. MSC.191(79), IMO Res. MSC.302(87)

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

This Certificate is valid until **2019-02-24**.

Issued at **Høvik** on **2017-04-05**

DNV GL local station:
Oslo Maritime and CAP



for **DNV GL AS**

Approval Engineer:
Roger Lauritsen

Notified Body
No.: **0575**

Vidar Dolonen
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 United States of America and the EEA EFTA states on the mutual recognition of Certificates of Conformity for Marine Equipment" signed 17 October 2005.

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

Hardware modules:

- Echo sounder operator unit GDS101
- Transducer 50 kHz; TGM60-50-xxL
- Transducer 200 kHz; NGM100-200-xxL and TGM50-200-xxL

xx is a numerical value for the cable length in meters.

Software modules:

- SW version 5.xx

Optional Features:

- Remote dimming control:
- Transducer selector fore/aft.:
- Digital depth repeater:
SW version 2.xx

Type:

- IR30DIM
- ENS518
- IR301

- UDD SAM 4900
- CD 401 MR

Marking:

- IR30DIM
- ENS518
- Skipper IR301
- Raytheon IR301
- Kongsberg Maritime RD301
- UDD SAM 4900
- CD 401 MR

- Digital depth repeater:
- Digital multi repeater:

Application/Limitation

- The echosounding equipment shall be connected to an external alarm unit for power failure alarm.
- The environmental test set-up included the transducer tank ETNST.

The certificate is also valid for the echosounding equipment with the type designations:

- Kongsberg Maritime EN 250
- Raytheon GDS101
- Kelvin Hughes GDS101

Type Examination documentation

DNV GL No	Drawing No	Rev.	Title
10027	TAA000015T		Certificate: DNV GL, Type approval CD 401 MR
10025		13.01.2017	Report: Additional testing for Display standards for GDS101, GDS102, DL850, EML224, CD401
10024	DM-G001-SB	1702	Manual: GDS101 Operation and Installation Manual
10022	PS-G002-A2	2014-02-21	Report: Skipper, Change report for transceiver module PS-G002 from rev 2E to A2
10021			Report: Survey report- IEC 61162 (2010) testing
10020	EO8580.00		Report: NEMKO, Tests acc. to EN60945 (2002)
10019		23.02.2009	Report: Operational test for GDS101 Echo Sounder
10011	Several		Reports: Test reports for SAM 4900
10010	October 2006		Report: Integration test for SAM 4900 UDD with GDS101, GDS102 and DL850
10008	22185		Report: NEMKO, Test report - EN 60945
10007		A1/180903	Report: Performance test program IR301

Job Id: **344.1-000203-5**
Certificate No: **MEDB00001XZ**

10006		20050408sw2.6	Manual: IR301 Digital Depth Repeater. Operation & Installation Manual
10005	DANAK-196857		Report: DANAK, Type approval testing ED-165, IR-300 and IR-301
10004	2000-1363	2	Report: DNV, EMC and environmental testing of Skipper marine electronic units
10003	20001208		Report: Performance test program for GDS101 echosounder
10002	20041218		Manual: SKIPPER GDS101 Graphic Depth Sounder Service Manual
10001	20050121	sw5.04.11	Manual: SKIPPER GDS101 Graphic Depth Sounder Operation And Installation Manual

Tests carried out

- Environmental Tests, IEC 60945 (2002)
- Performance Tests, ISO 9875 (2000)
- Serial Interface Tests, IEC 61162-1 (2010)
- Serial Interface Tests, IEC 61162-1 (2016)
- Performance tests optional features 2003
- Performance tests. IEC 62288 (2014)

Marking of product

- Skipper GDS101, or
- Kongsberg Maritime EN 250, or
- Raytheon GDS101, or
- Kelvin Hughes GDS101

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location and in addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/ or supply voltage.