mcmurdo

KANNAD marine

**McMurdo Limited**
Silver Point, Airport Service Road
Portsmouth PO3 5PB
United Kingdom
Tel: +44 (0) 23 9262 3900
Fax: +44 (0) 23 9262 3998
www.mcmurdo.co.uk

## KLS-S5 Exhibit 2a - Attestation Statement

The evidence assembled in this submission, itemised in Exhibit 0, deals with a new Search And Rescue Locating Device equipment, of the AIS-SART type, to be placed on the market in the US as three differently branded but technically identical products, designated as follows:

McMurdo Smartfind S5 AIS SART

Kannad Marine Safelink AIS SART

Sailor 5051 AIS SART

For the purposes of this submission the device will be referred to as the S5.

The AIS-SART is a new equipment type.

The SOLAS Convention mandates the carriage of certain equipment onboard commercial vessels subject to the Convention; in the category of LIFE-SAVING APPLIANCES AND ARRANGEMENTS the 9 GHz Radar SART (Search And Rescue Transponder) has been one such mandatory carriage item.

A recent amendment to the Convention adopted by IMO Resolution MSC.256(84) replaces the carriage requirement for a SART with the carriage requirement for a Search And Rescue Locating Device, which may be either the aforementioned 9 GHz Radar SART or alternatively an AIS-SART.

This change came into force 1 January 2010.

IMO Resolution MSC.246(83) sets out the performance standard adopted by IMO for the AIS-SART equipment type.

The International Standard IEC 61097 addresses the shipboard components of the Global Maritime Distress and Safety System (GMDSS), of which the Search And Rescue Locating Device is one, in a number of parts; part IEC 61097-14 has been developed specifically to address the AIS Search And Rescue Transmitter (AIS-SART); at time of gathering the test evidence contained in this TCF, and generating the test reports, IEC 61097-14 existed at FDIS status; at time of making the present submission, the FDIS has been voted and approved, and publication of the issued International Standard is in train.



McMurdo Limited
Registered in England No. 06952856 Registered Office: Silver Point, Airport Service Road Portsmouth PO3 5PB
VAT No. GB 980 2079 17

The AIS-SART equipment type is not a radar transponder and it does not meet the performance standards applicable to the conventional radar transponder SART as set out in 47 CFR 80.1101.

The AIS-SART equipment type does meet all international requirements for a Search And Rescue Locating Device, as explained above, and the S5 AIS-SART does meet all performance standards applicable to this equipment type.

McMurdo Limited has applied to the FCC for a waiver to allow certification and use of its S5 AIS-SART in place of the 'radar transponder' for the purposes of the carriage requirements defined in:

47 CFR 80.1085 (a)(3)

47 CFR 80.1095 (b)

For reference the Public Notice associated with the request for waiver is copied at:

KLS-S5 Exhibit 2b - FCC Waiver Public Notice

For reference the FCC ORDER granting the waiver is copied at:

KLS-S5 Exhibit 2c - FCC Grant of Waiver

In accordance with the requirements of Section 6 of this FCC ORDER all necessary details of the S5 AIS-SART have been submitted to US Coast Guard, and their letter confirming that the device complies with all the requirements specified in IEC 61097-14 will be copied at:

KLS-S5 Exhibit 2g - USCG Letter of Approval

—

The Smartfind S5 has been tested in a combination of work carried out by two independent test laboratories:

TUV Product Services and

BSH, the German Federal Maritime and Hydrographic Agency,

The product has been tested against a range of international standards appropriate to the intended use of the product.

Attestation of compliance with the relevant requirements of:

| | |
|---|---|
| 47 CFR Part 2 | Subpart J |
| 47 CFR Part 15 | Subpart B |
| 47 CFR Part 80 | Subpart E |

is provided in the test report:

KLS-S5 Exhibit 6a - TUV Report 3 iss1 of 75907213

EMC testing to the applicable requirements of IEC 60945 :2002, appropriate to the intended commercial maritime environment in which the equipment will operate, is documented in the test report:

KLS-S5 Exhibit 6b - TUV Report 1 iss1 of 75907213

Tests covering the physical radio characteristics of the VHF transmitter component of the equipment, to the requirements of clause 7 of IEC 61097-14, are documented in the test report:

KLS-S5 Exhibit 6c - TUV Report 2 iss3 of 75907213

Requirements specific to the proper operation and endurance of the equipment in distress circumstances, and its proper characteristics of resistance to the stresses imposed by the commercial maritime environment, are detailed in Clause 6 of IEC 61097-14 in association with IEC 60945 :2002. Except where examination against such requirements depends upon 'observation of the VDL' the relevant tests are also documented in the above test report.

At Annex A the above test report also contains a Waiver Submission addressing the requirements for Corrosion and Oil Resistance testing and Solar Radiation testing which fall into this same category and arise from these same standards. The submission consists of a Materials Declaration and a report on McMurdo in-house testing of oil resistance.

At Annex C the above test report also contains calculations of the lifetime battery drain of the equipment by design - this information is used for preconditioning in the tests of endurance of the equipment in operation, as mentioned above.

The requirement detailed in Clause 4.6.3 of IEC 60945 regarding X-radiation is addressed by the manufacturer's declaration and request for waiver at:

KLS-S5 Exhibit 2f - statement on X-Ray characteristics

Link Layer testing of the transmissions of the equipment on the AIS VHF Data Link (VDL), to the requirements of clause 8 of IEC 61097-14, is documented in the test report:

KLS-S5 Exhibit 6d - BSH Report 4615-4321410-09-s3140

Where elements of the Performance Tests detailed in Clause 6 of IEC 61097-14 require assessment of the equipment by 'observation of the VDL', conformity can be verified from a consideration of the test results in the above test report.

The required response of the system in the absence of a position fix from the EPFS is defined by Clause 4.1.6.3 of IEC 61097-14; again conformity can be verified from a consideration of the test results in the above test report.

Testing of the Electronic Position Fixing System (EPFS) component of the equipment, as required by Clause 6.9 of IEC 61097-14 in association with IEC 61108, is documented in test reports:

KLS-S5 Exhibit 6e - TUV Report 1 iss3 of 75908379

and

KLS-S5 Exhibit 6f - BSH Report 4615-4321410-09

while the additional particular requirements of Clause 4.1.6.2 of IEC 61097-14 in respect of minimum update rate, resolution, datum, and cold start activation are addressed in our statement:

KLS-S5 Exhibit 2e - statement on EPFS characteristics

An RF Exposure Assessment, carried out to demonstrate compliance with various national restrictions on human exposure to electromagnetic fields, is documented in the test report:

KLS-S5 Exhibit 11 - TUV Report 4 iss1 of 75907213

—

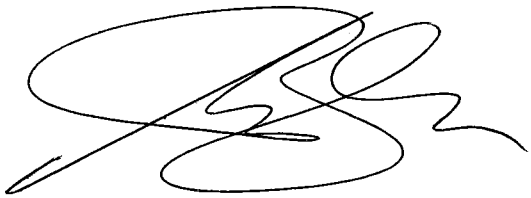
The Quality Management System applicable to all aspects of development and manufacture of these products is subject to external approval by an accredited body as shown by:

KLS-S5 Exhibit 2d - QMS certification

With respect to externally supplied sub-assemblies, supply is restricted to similarly QMS-certified vendors, with formal test specifications issued to those vendors where appropriate. Each fully assembled product undergoes final system testing at McMurdo Limited to ensure compliance.

—

We propose that the evidence presented in this submission demonstrates compliance of the McMurdo S5 AIS SART and its Kannad Marine and Sailor variants with all applicable FCC requirements, and that it should therefore be accepted as suitable for meeting mandatory carriage requirements for a Search And Rescue Locating Device (SART or AIS-SART) onboard US-flag vessels subject to the SOLAS Convention.



S.Roylance
Approvals Coordinator
14 July 2010

Tel: +44 (0)23 9262 3940
eMail: stephenroylance@mcmurdo.co.uk