

Environmental Test Report

Ocean Signal Ltd.
AIS SART, Model: S200
Brand Variant: ACR Electronics Inc.
AIS SART, Model: Pathfinder AIS



In accordance with IEC 60945: 2002

Prepared for: Ocean Signal Ltd.
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COMMERCIAL-IN-CONFIDENCE

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Nic Forsyth	Chief Engineer	Authorised Signatory	19 November 2025

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD document control rules.

EXECUTIVE SUMMARY

A sample of this product was tested in accordance with IEC 60945: 2002 for the tests detailed in section 1.3.



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1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	30-Oct-2025
2	Correction of typographical errors and update of report content	19-Nov-2025

Table 1

1.2 Introduction

Applicant	Ocean Signal Ltd.
Manufacturer	Ocean Signal Ltd. / ACR Electronics Inc
Model Tested	Pathfinder AIS
Manufacturer Declared Variant(s)	S200 *
Serial Number(s)	TA000016 (TUV Ref: TSR0004 – Pathfinder AIS)
Hardware Version(s)	01.00 / 01.00
Software Version(s)	01.00 / 01.00
Number of Samples Tested	1
Test Specification/Issue/Date	IEC 60945: 2002
Order Number	P8980 - QAF
Date	14-September-2023
Date of Receipt of EUT	01-February-2024
Start of Test	16-June-2024
Finish of Test	14-October-2025
Name of Engineer(s)	Matthew Bushell Thomas Nixon Thomas Richmond Matt Emery Tony Fominson Mike Collins Kieran Dellow
Related Document(s)	IEC 61097-14:2010

*Manufacturer declared variants: Refer to documents "Variant Relation Declaration - AIS SART Model Variants 300625.pdf" and "921S-06454 Issue 01.00 AIS SART Variant Comparison.pdf".



1.3 Brief Summary of Results

A summary of the tests carried out in accordance with IEC 60945 is shown below.

Section	Specification Clause	Test Description	Result	Reference Test Plan and Clause
Configuration and Mode: Config 1				
2.2	8.6.1	Drop Test (Portable Equipment)	Satisfactory	N/A
2.3	8.6.2	Drop into Water	Satisfactory	N/A
2.4	8.5	Thermal Shock (Portable Equipment)	Satisfactory	N/A
2.5	8.9.2	Immersion (Portable Equipment)	Satisfactory	N/A
2.6	8.7	Vibration Test (All Equipment Categories)	Satisfactory	N/A
2.7	8.2	Dry Heat Test (Storage & Functional)	Satisfactory	N/A
2.8	8.3	Damp Heat Test (Storage & Functional)	Satisfactory	N/A
2.9	8.4	Low Temperature Test (Storage & Functional)	Satisfactory	N/A
2.10	12.1	Protection against accidental access to dangerous voltages	Satisfactory	N/A

Table 2

Satisfactory - No damage or detrimental effects were observed and performance assessments carried out by the client's representative/TÜV SÜD were reported as satisfactory.

Unsatisfactory - Damage or detrimental effects were observed by the client's representative/TÜV SÜD during the test program.



1.4 Declaration of Build Status

MAIN EUT			
MANUFACTURING DESCRIPTION	AIS SART		
MANUFACTURER	Ocean Signal Ltd. / ACR Electronics Inc.		
MODEL	S200 / Pathfinder AIS		
PART NUMBER	900S-04810 / 900S-05232		
HARDWARE VERSION	01.00 / 01.00		
SOFTWARE VERSION	01.00 / 01.00		
PSU VOLTAGE/FREQUENCY/CURRENT	6V		
HIGHEST INTERNALLY GENERATED FREQUENCY	162.025 MHz		
FCC ID (if applicable)	XYES200		
INDUSTRY CANADA ID (if applicable)	9296A-S200		
TECHNICAL DESCRIPTION (a brief technical description of the intended use and operation)	Search And Rescue Transponder operating in the AIS frequency band.		
COUNTRY OF ORIGIN	United Kingdom		
RF CHARACTERISTICS (if applicable)			
TRANSMITTER FREQUENCY OPERATING RANGE (MHz)	161.975MHz - 162.025 MHz		
RECEIVER FREQUENCY OPERATING RANGE (MHz)	N/A		
INTERMEDIATE FREQUENCIES	N/A		
EMISSION DESIGNATOR(S): https://fccid.io/Emissions-Designator/	16K0GXW		
MODULATION TYPES: (i.e. GMSK, QPSK)	GMSK		
OUTPUT POWER (W or dBm)	30+-3dBm		
SEPARATE BATTERY/POWER SUPPLY (if applicable)			
MANUFACTURING DESCRIPTION	Battery Module Assy LB3S: SART / Battery Module Assy: ACR SART		
MANUFACTURER	Ocean Signal Ltd. / ACR Electronics Inc.		
TYPE	Lithium/Iron Disulfide (Li/FeS2)		
PART NUMBER	901S-00325 / 901S-02016		
PSU VOLTAGE/FREQUENCY/CURRENT	6V		
COUNTRY OF ORIGIN	United Kingdom		
MODULES (if applicable)			
MANUFACTURING DESCRIPTION			
MANUFACTURER			
TYPE			
POWER			
FCC ID			
INDUSTRY CANADA ID			
EMISSION DESIGNATOR			
DHSS/FHSS/COMBINED OR OTHER			
COUNTRY OF ORIGIN			
ANCILLARIES (if applicable)			
MANUFACTURING DESCRIPTION	SART Optional 1m Mounting Pole		
MANUFACTURER	Ocean Signal Ltd		
TYPE	-		
PART NUMBER	711S-01802		
SERIAL NUMBER	-		
COUNTRY OF ORIGIN	China		

I hereby declare that the information supplied is correct and complete.

Stefan Kennedy

Name: Stefan Kennedy
Position held: R&D Director
Date: 30-06-2025

1.5 Product Information

The Equipment under test (EUT) was an ACR Electronics Pathfinder AIS (Automatic Identification System) SART (Search and Rescue Transmitter).

The primary function of the EUT is to provide location data in emergencies.



Figure 1 – Equipment Under Test (EUT)

1.6 Deviations from the Standard

No deviations from the applicable test standard were made during testing.



1.7 EUT Modification Record

The table below details modifications made to the EUT during the test programme.

The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
Model: Pathfinder AIS, Serial Number: TA000016 (Radiated Unit)			
0	As supplied by the customer	Not Applicable	Not Applicable
1	Following the initial Thermal Shock test the application of correct torque settings to main enclosure body of EUT was applied. Whilst not a change to build state this information is included as a modification state for ease of reference within this report.	Manufacturer	28 August 2025
2	Following the Thermal Shock test in modification state 1 a replacement seal in the main body of the EUT was made. The replacement was a like for like seal and would normally be changed when servicing and re-assembling the unit. Whilst not a change to build state this information is included as a modification state for ease of reference within this report.	Manufacturer	16-Sep-2025

Table 3

1.8 Test Location

TÜV SÜD conducted the following tests at our Octagon House Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Drop Test (Portable Equipment)	Thomas Nixon Matthew Bushell	UKAS
Thermal Shock (Portable Equipment)	Mike Collins Matthew Bushell	UKAS
Immersion (Portable Equipment)	Mike Collins Matthew Bushell	UKAS
Vibration Test (All Equipment Categories)	Kieran Dellow Matthew Bushell	UKAS
Dry Heat Test (Storage & Functional)	Tony Fominson Matthew Bushell	UKAS
Damp Heat Test (Storage & Functional)	Thomas Richmond Matthew Bushell	UKAS
Low Temperature Test (Storage & Functional)	Thomas Richmond Matthew Bushell	UKAS
Protection against accidental access to dangerous voltages	Matt Emery	UKAS

Table 4



TÜV SÜD conducted the following tests at Trafalgar Wharf, Portchester.

Test Name	Name of Engineer(s)	Accreditation
Drop into Water	Matthew Bushell	Non UKAS Accreditation (NUA)

Table 5

Office Address:

TÜV SÜD
Octagon House
Concorde Way
Fareham
Hampshire
PO15 5RL
United Kingdom

Trafalgar Wharf Address:

Trafalgar Wharf
Hamilton Road
Portsmouth
Hampshire
PO6 4PX



2 Test Details

2.1 Drop Test (Portable Equipment)

2.1.1 Specification Reference

IEC 60945, Clause 8.6.1

2.1.2 Equipment Under Test and Modification State

Model: Pathfinder AIS, S/N: TA000016 - Modification State 0

2.1.3 Date of Test

09-July-2024

2.1.4 Test Method

The following test method was performed:

A series of six drops shall be carried out, one on each face of the EUT.

The test surface shall consist of a piece of solid hard wood with a thickness of at least 150 mm and a mass of 30 kg or more.

The height of the lowest part of the EUT relative to the test surface at the moment of release shall be 1000 mm $\pm$ 10 mm.

The EUT shall be subjected to this test configured for use as in operational circumstances.

At the end of the test the EUT shall be subjected to a performance check and shall then be examined for external indications of damage.

2.1.5 Test Results

The Drop Test (Portable Equipment) requirements were satisfied.

On completion of the testing the EUT was subject to visual examinations and operational performance checks. Small indentations were observed on the EUT; however, the overall condition of the EUT was deemed satisfactory.

The condition of the EUT prior to test is shown below.



Figure 2 - EUT General View

The test Setup photos for each axis are shown below.

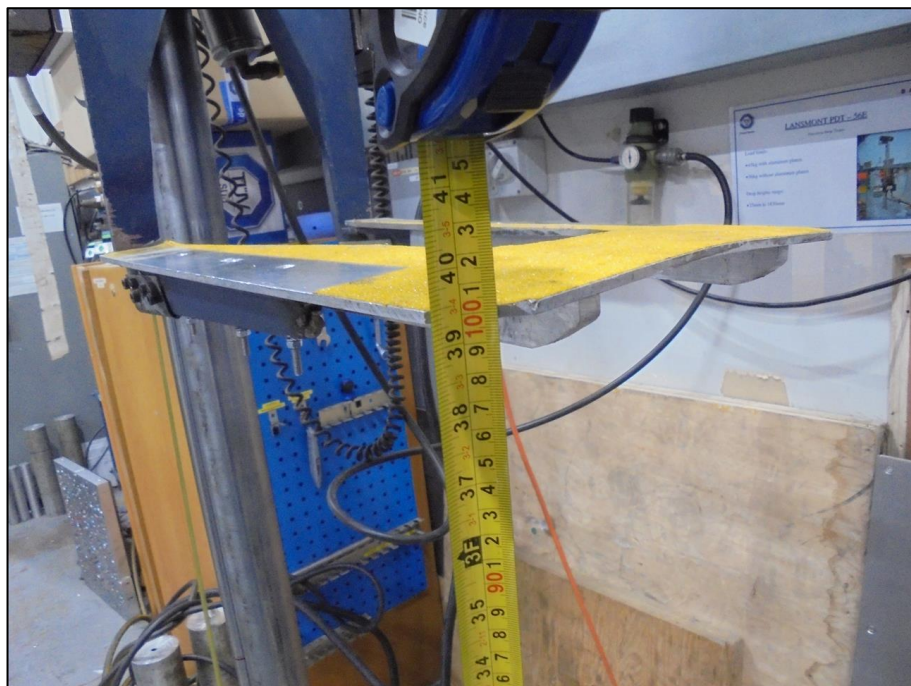


Figure 3 – Drop Height 1000 mm Measurement



Figure 4 - Test Setup - Drop 1



Figure 5 - Test Setup - Drop 2

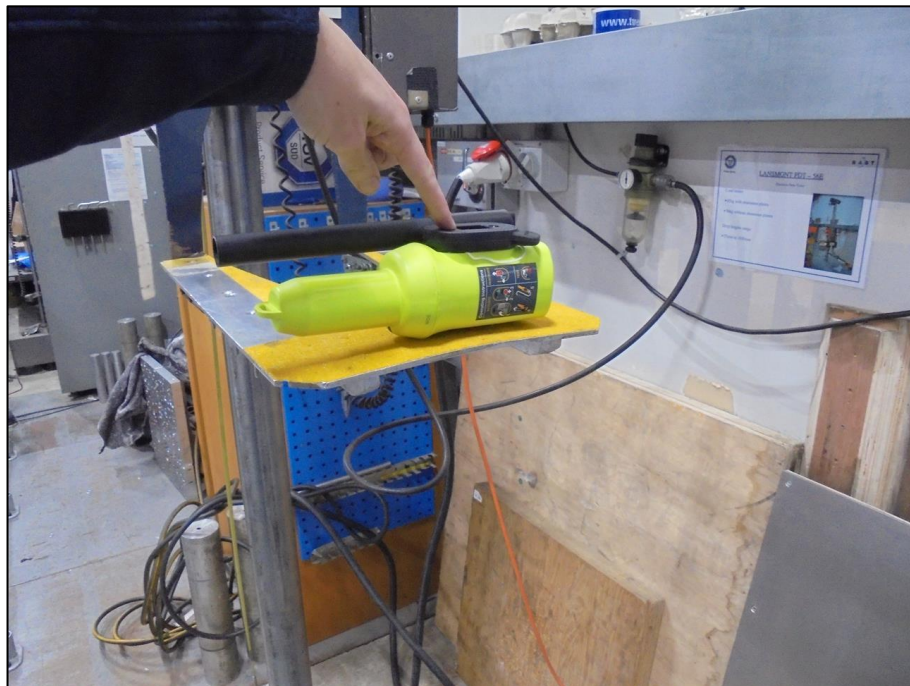


Figure 6 - Test Setup - Drop 3



Figure 7 - Test Setup - Drop 4

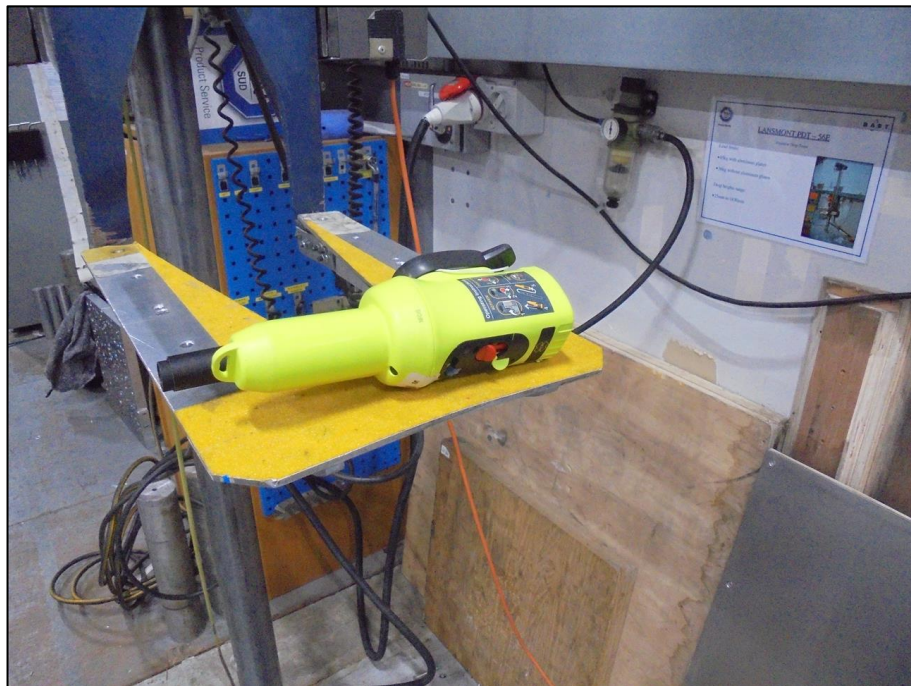


Figure 8 - Test Setup - Drop 5

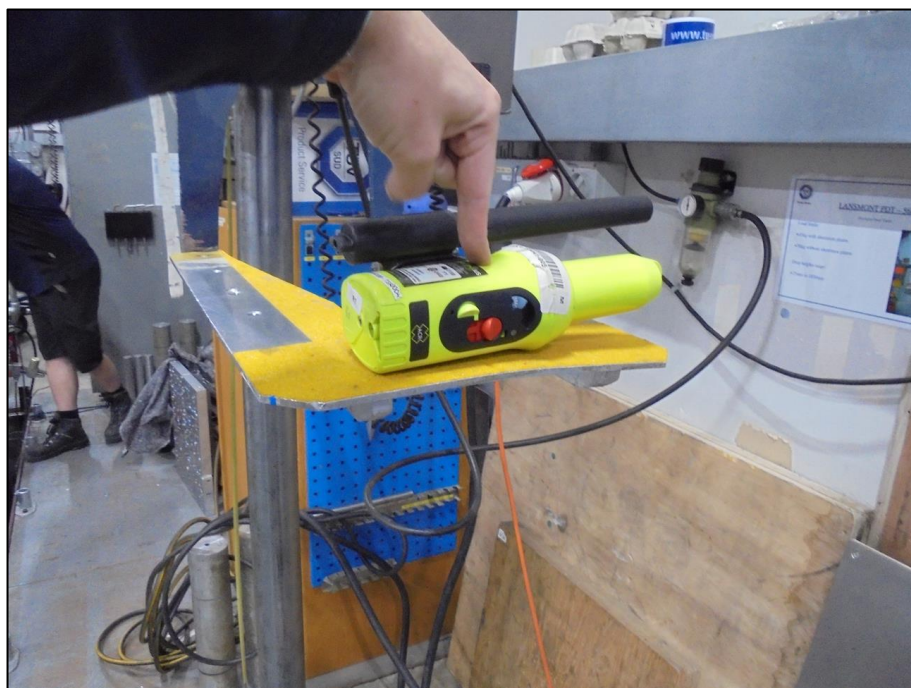


Figure 9 - Test Setup - Drop 6



2.1.6 Post-test performance checks

Performance checks	
Requirement	Verdict
EUT sends 8 messages on self-test with message 14 at start and end.	Pass

Table 6

Message 14 Decode Self-test	
!AIVDM,1,1,8,A,>>M46T1<59B1@E=@,0*0F	
Parameter	Decoded Value
Message ID	14
Repeat Indicator	0
MMSI	970000016
Spare	0
Safety related text	SART TEST

Table 7

Message 1 Decode Self-Test	
!AIVDM,1,1,1,B,1>M46T?P04OrCAbM6nuv4?vJ0000,0*17	
Parameter	Decoded Value
Message ID	1 - Position report
Repeat Indicator	0
MMSI	970000016
Navigational Status	15 - not defined (also used by AIS-SART under test)
Rate Of Turn	no turn information available (default)
Speed Over Ground	0
Position Accuracy	0 - low (>10 m)
Longitude	1 14.6955 W
Latitude	50 52.1079 N
Course Over Ground	not available
True Heading	511 - not available
Time Stamp	13
Special Manoeuvre Indicator	0 - not available
Spare	0
RAIM Flag	0 - RAIM not in use
Communication State - Sync State	0
Communication State - Slot Timeout	0
Communication State - Sub Message	Slot Offset = 0

Table 8

Self-Test Transmitted Messages						
Time	Slot	Chan	MMSI	Msg	Nav Status	Sentence
-	290	A	970000016	14	-	!AIVDM,1,1,8,A,>>M46T1<59B1@E=@,0*0F
-	365	B	970000016	1	15	!AIVDM,1,1,9,B,1>M46T?P04OrCAbM6nuv4?vB0000,0*17
-	440	A	970000016	1	15	!AIVDM,1,1,0,A,1>M46T?P04OrCAbM6nuv4?vF0000,0*19
-	515	B	970000016	1	15	!AIVDM,1,1,1,B,1>M46T?P04OrCAbM6nuv4?vJ0000,0*17
-	590	A	970000016	1	15	!AIVDM,1,1,2,A,1>M46T?P04OrCAbM6nuv4?vN0000,0*13
-	665	B	970000016	1	15	!AIVDM,1,1,3,B,1>M46T?P04OrCAbM6nuv4?vR0000,0*0D
-	740	A	970000016	1	15	!AIVDM,1,1,4,A,1>M46T?P04OrCAbM6nuv4?vV0000,0*0D
-	815	B	970000016	14	-	!AIVDM,1,1,5,B,>>M46T1<59B1@E=@,0*01

Table 9



2.1.7 Test Location and Test Equipment Used

This test was carried out in the Environmental Mechanical Test Laboratory.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Drop Test Equipment	Lansmont	PDT 56E	2291	-	TU
Hygrometer	Rotronic	I-1000	2496	-	OP/MON
Hardwood Block	Unknown	ELM	2650	-	TU
VDES Test Platform	S3C	N/A	5945	-	TU
VHF GNSS Splitter Box	TÜV SÜD	N/A	5946	-	TU

Table 10

TU - Traceability Unscheduled
OP/MON – Output Monitored

2.2 Drop into Water (NUA)

2.2.1 Specification Reference

IEC 60945, Clause 8.6.2

2.2.2 Equipment Under Test and Modification State

Model: Pathfinder AIS, S/N: TA000016 - Modification State 0

2.2.3 Date of Test

31-July-2025

2.2.4 Test Method

The following test method was performed:

A series of three drops shall be carried out. Each drop shall be performed with the initial position of the EUT different from the preceding one. The height of the lowest part of the EUT under test relative to the water surface at the moment of release shall be $20\text{ m} \pm 1\text{ m}$.

At the end of the test the EUT shall be subjected to a performance check and examined for damage and for unwanted ingress of water. Following examination, the EUT shall be resealed in accordance with the manufacturer's instructions. Alternatively, if there are no external signs of unwanted ingress of water, an internal examination which involves disturbance to seals may be carried out after all environmental tests have been completed.

2.2.5 Test Setup



Figure 10 – EUT Setup



2.2.6 Test Results

Test Observations

Following each drop the presence for transmissions from the EUT was confirmed.

Following completion of the test the EUT was examined for water ingress and/or damage: none was observed.

2.2.7 Post-test performance checks

Performance checks	
Requirement	Verdict
EUT sends 8 messages on self-test with message 14 at start and end.	Pass

Table 11

Message 14 Decode Self-test	
!AIVDM,1,1,0,A,>>M46T1<59B1@E=@,0*07	
Parameter	Decoded Value
Message ID	14
Repeat Indicator	0
MMSI	970000016
Spare	0
Safety related text	SART TEST

Table 12

Message 1 Decode Self-Test	
!AIVDM,1,1,1,B,1>M46T?P02OrCGjM6pwf4?v:0000,0*63	
Parameter	Decoded Value
Message ID	1 - Position report
Repeat Indicator	0
MMSI	970000016
Navigational Status	15 - not defined (also used by AIS-SART under test)
Rate Of Turn	no turn information available (default)
Speed Over Ground	0
Position Accuracy	0 - low (>10 m)
Longitude	1 14.6759 W
Latitude	50 52.1598 N
Course Over Ground	not available
True Heading	511 - not available
Time Stamp	5
Special Manoeuvre Indicator	0 - not available
Spare	0
RAIM Flag	0 - RAIM not in use
Communication State - Sync State	0
Communication State - Slot Timeout	0
Communication State - Sub Message	Slot Offset = 0

Table 13



Self-Test Transmitted Messages						
Time	Slot	Chan	MMSI	Msg	Nav Status	Sentence
10:36:03	140	A	970000016	14	-	!AIVDM,1,1,0,A,>>M46T1<59B1@E=@,0*07
10:36:05	215	B	970000016	1	15	!AIVDM,1,1,1,B,1>M46T?P02OrCGjM6pwf4?v:0000,0*63
10:36:07	290	A	970000016	1	15	!AIVDM,1,1,2,A,1>M46T?P02OrCGjM6pwf4?v>0000,0*67
10:36:09	365	B	970000016	1	15	!AIVDM,1,1,3,B,1>M46T?P02OrCGjM6pwf4?vB0000,0*19
10:36:11	440	A	970000016	1	15	!AIVDM,1,1,4,A,1>M46T?P02OrCGjM6pwf4?vF0000,0*19
10:36:13	515	B	970000016	1	15	!AIVDM,1,1,5,B,1>M46T?P02OrCGjM6pwf4?vJ0000,0*17
10:36:15	590	A	970000016	1	15	!AIVDM,1,1,6,A,1>M46T?P02OrCGjM6pwf4?vN0000,0*13
10:36:17	665	B	970000016	14	-	!AIVDM,1,1,7,B,>>M46T1<59B1@E=@,0*03

Table 14

2.2.8 Test Location and Test Equipment Used

This test was carried out at Trafalgar Wharf Portchester.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Bomb Release	MOD	-	3667	-	TU
VDES Test Platform	S3C	N/A	5945	-	TU
VHF GNSS Splitter Box	TÜV SÜD	N/A	5946	-	TU
Portable Network Analyser	Rohde & Schwarz	116278	6250	12	21-Oct-2025
Thermo-Hygro-Barometer	R.S Components	220700876	6700	12	10-Oct-2025

Table 15

TU - Traceability Unscheduled



2.3 Thermal Shock Test (Portable Equipment)

2.3.1 Specification Reference

IEC 60945:2002, Clause 8.5

2.3.2 Equipment Under Test and Modification State

Initial Test - Model: Pathfinder AIS, S/N: TA000016 - Modification State 0

First Repeat - Model: Pathfinder AIS, S/N: TA000016 - Modification State 1

Second Repeat - Model: Pathfinder AIS, S/N: TA000016 - Modification State 2

2.3.3 Date of Test

Initial Test – 07-August-2025

First Repeat – 29-August-2025

Second Repeat - 16-September-2025 to 17-September-2025

2.3.4 Test Method

The following test method was performed:

The EUT shall be placed in an atmosphere of $+70\text{ °C} \pm 3\text{ °C}$ for 1 h. It shall then be immersed in water at $+25\text{ °C} \pm 3\text{ °C}$ to a depth of $100\text{ mm} \pm 5\text{ mm}$, measured from the highest point of the EUT to the surface of the water, for a period of 1 h.

At the end of the test the EUT shall be subjected to a performance check, and shall then be examined for damage and for unwanted ingress of water. Following examination, the EUT shall be resealed in accordance with the manufacturer's instructions. Alternatively, if there are no external signs of unwanted ingress of water, an internal examination of the EUT, which involves disturbance to seals, may be carried out after all environmental tests have been completed.

2.3.5 Test Results

Initial Test - Modification State 0

The Thermal Shock Test (Portable Equipment) requirements were not satisfied.

When the EUT was submerged it was noted that there was air escaping from the device indicating water ingress (most likely from the join of the two main body parts at the centre of the EUT). The EUT was weighed pre and post-test; the figures are presented below:

Pre-test EUT mass: 0.416 kg

Post-test EUT mass: 0.422 kg

Difference between pre and post-test mass: 6g

The post-test mass increase of 6g was measured after the EUT external casing was fully dried. The EUT was then subject to external visual examinations. The overall condition of the EUT was deemed not satisfactory due to the increase in mass suggesting unwanted water ingress.

The EUT was subject to an internal examination by the manufacturer who reported that water had been able to penetrate the EUT enclosure. After a full investigation it was reported that the failure was due to insufficient torque on the main EUT enclosure screws. The EUT was correctly re-assembled and returned to TÜV SÜD for repeat testing.

The photos below show the EUT and test setup prior to test:



Figure 11 - EUT General View – Pre-Test



Figure 12 - EUT Rating Plate



Figure 13 - Test Setup

Photos during and after test are shown below:

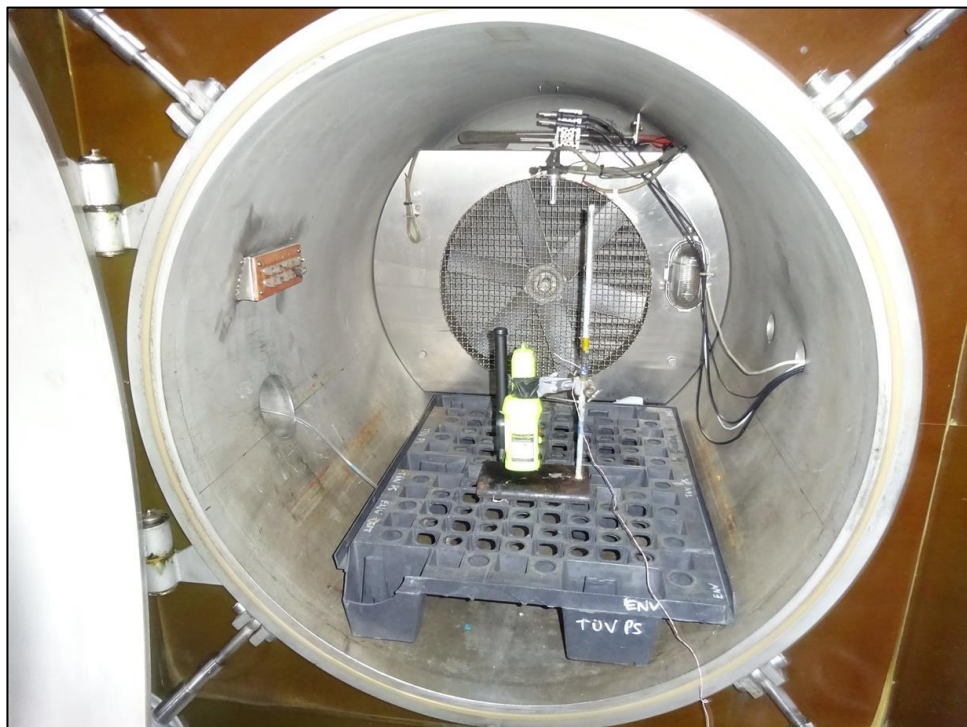


Figure 14 – Test Setup – EUT in Chamber (Conditioning at +70°C)

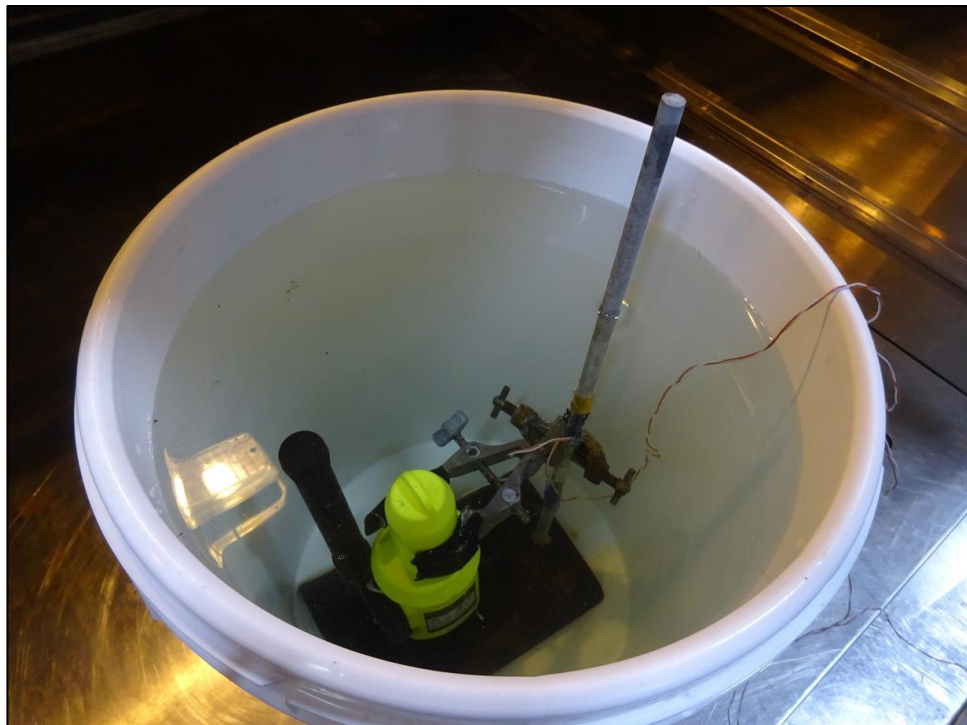


Figure 15 – Test Setup – EUT in Chamber (EUT immersed in water at +25°C)



Figure 16 – Test Setup – Water Temperature



Figure 17 – Test Setup – Water Depth to EUT



Figure 18 – EUT General View – Post-Test

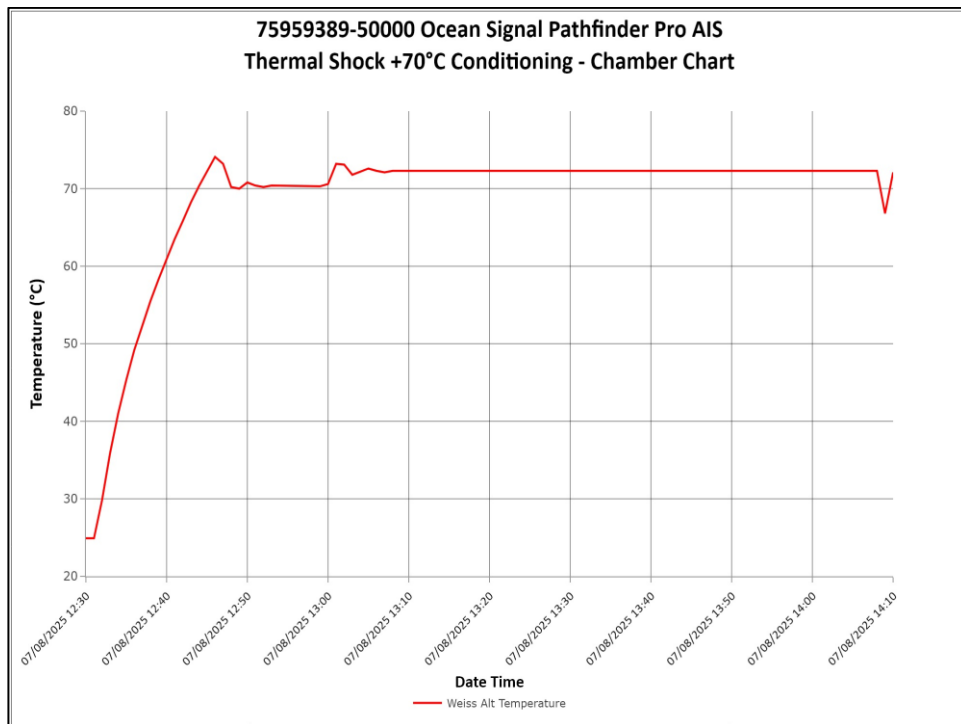


Figure 19 - +70°C Chamber Chart (EUT conditioning)

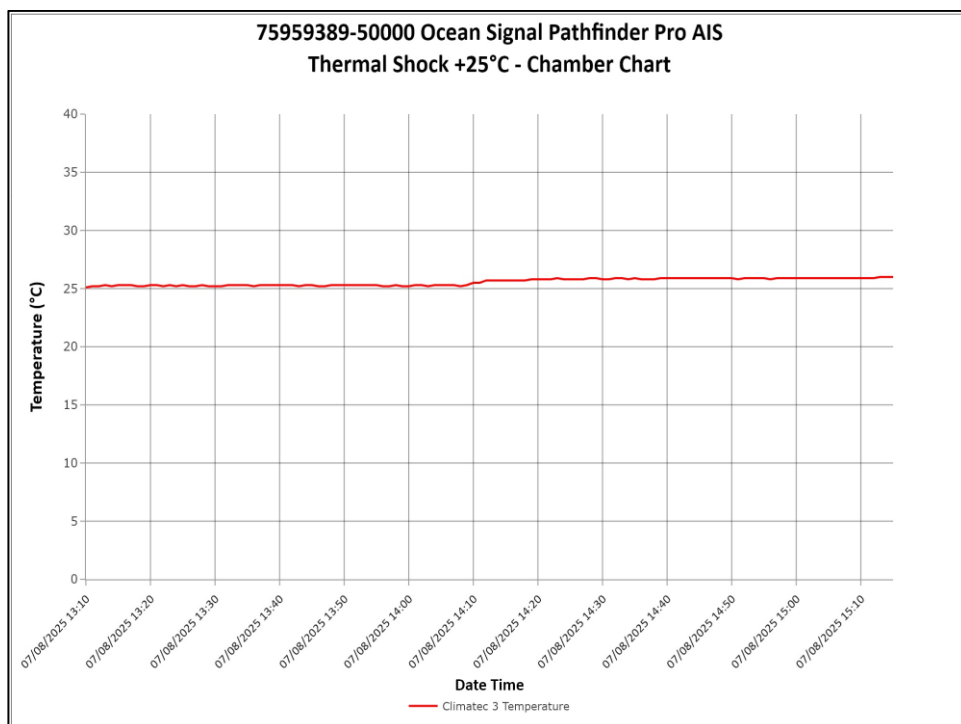


Figure 20 - +25°C Chamber Chart (EUT water immersion)

First Repeat Test (Modification State 1)

The Thermal Shock Test (Portable Equipment) requirements were not satisfied.

When the EUT was submerged it was noted that there was air escaping from the device indicating water ingress (most likely from the join of the two main body parts at the centre of the EUT). The EUT was weighed pre and post-test; the figures are presented below:

Pre-test EUT mass: 0.416 kg
Post-test EUT mass: 0.429 kg
Difference between pre and post-test mass: 13g

The post-test mass increase of 13g remained after the EUT external casing was fully dried. The EUT was then subject to visual examinations.

It was also observed that the EUT LEDs were flashing following the test (without intentional activation). The overall condition of the EUT was therefore deemed not satisfactory due to the increase in mass, suggesting water ingress, and the unintentional activation of the LEDs.

The EUT was returned to the manufacturer for investigation, and it was found that the seal in the main enclosure was damaged. The manufacturer stated that the cause of the damage to the main enclosure seal was likely caused by the previous investigation performed and assembly off the production line. The manufacturer replaced the seal and returned the EUT for repeat testing.

The photos below show the test setup prior to test:



Figure 21 – EUT General View – Pre-Test



Figure 22 – Test Setup (modification state 1)

Photos during and after test are shown below:



Figure 23 - Test Setup – EUT in Chamber (Conditioning at +70°C)



Figure 24 - Test Setup – EUT in Chamber (EUT immersed in water at +25°C)

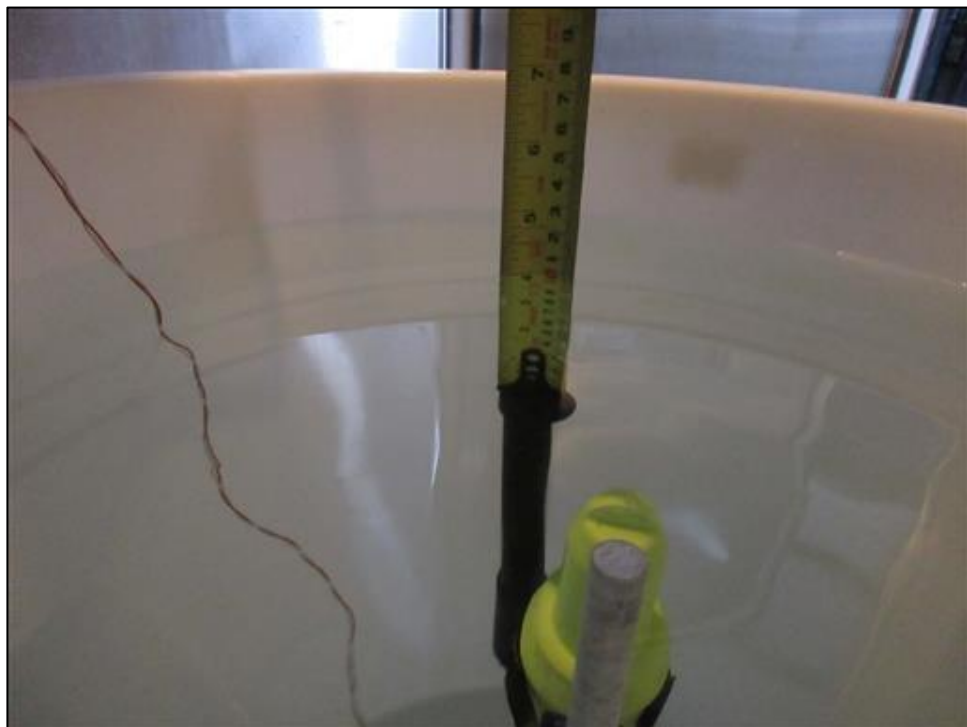


Figure 25 - Test Setup – Water Depth to EUT



Figure 26 - EUT General View – Post-Test

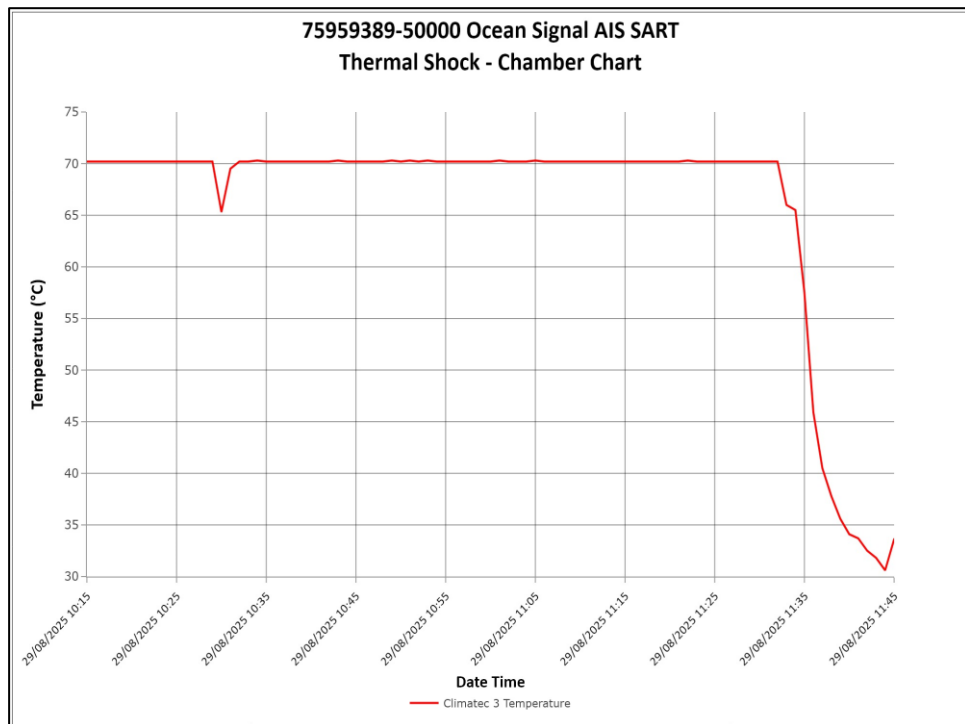


Figure 27 - +70°C Chamber Chart (EUT conditioning)

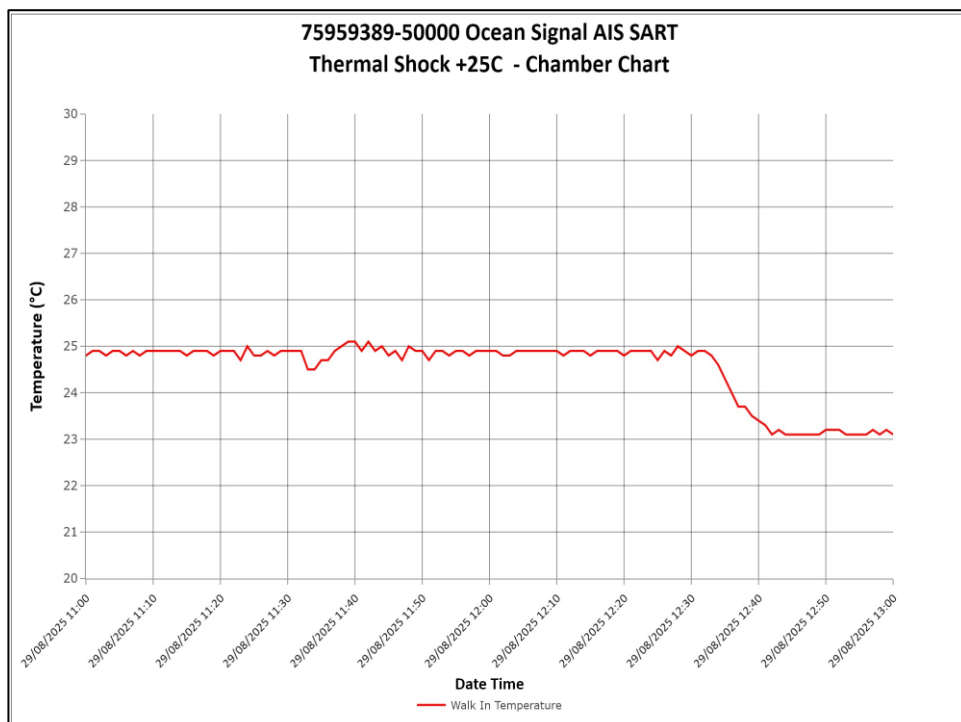


Figure 28 - +25°C Chamber Chart (EUT water immersion)

Second Repeat Test - Modification State 2

The Thermal Shock Test (Portable Equipment) requirements were satisfied.

Pre-test EUT mass (telescopic mounting pole and lanyard assembly removed): 0.177 kg

Post-test EUT mass (telescopic mounting pole and lanyard assembly removed): 0.177 kg

Difference between pre and post-test mass: 0 kg

Note: for this test it was requested by the manufacturer that the telescopic mounting pole and lanyard assembly be removed for the pre and post-test weight verifications. These two sections of the EUT retain water and are not intended to be watertight; removing these sections for the pre and post-test weight checks allow for a more accurate verification of potential water ingress within the parts of the EUT enclosure which are designed to be watertight.

On completion of the test, the EUT was subject to visual examinations and operational checks. Overall condition of the EUT was deemed satisfactory.

The photos below show the test Setup prior to test:



Figure 29 - EUT General View – Pre-Test



Figure 30 - Test Setup - Water temperature check prior to submersion - 25.7c

Photos during and after test are shown below:



Figure 31 - Test Setup – EUT submerged (depth check)



Figure 32 - Test Setup (EUT immersed in water at +25°C)



Figure 33 - EUT General View – Post-Test



Figure 34 - EUT General View – Post-Test (minor label peeling on EUT)*

* The Manufacturer advised that “this label was for indication only and was not the final production version as these were not available at the time of submission. This label material, colour and print type has previously been tested on the Ocean Signal S100 SART and is covered by Omega report:

TEST REPORT NO. 10/591 Search and Rescue Transponder “SafeSea S100” for compliance with IEC61097-1 (Second edition 2007-06) and IEC60945 (Fourth edition 2002-08)
Manufacturer “Ocean Signal Ltd.”, Great Britain

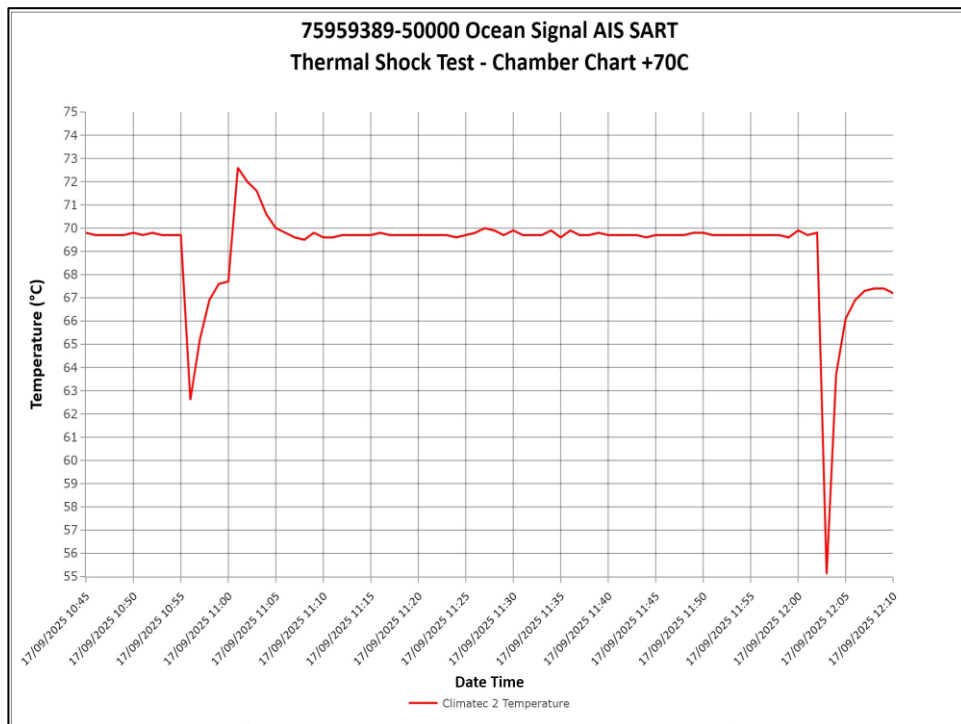


Figure 35 - +70°C Chamber Chart (EUT conditioning)

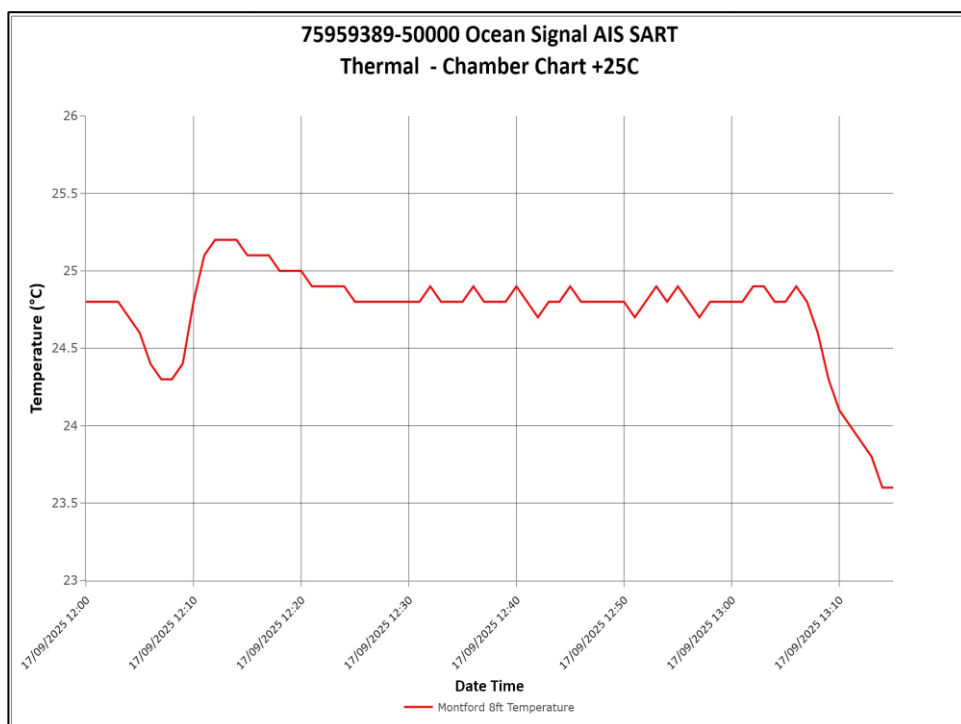


Figure 36 - +25°C Chamber Chart (EUT water immersion)



2.3.6 Post-test performance checks

The performance checks were carried out after the test with the EUT configured in modification state 2.

Performance checks	
Requirement	Verdict
EUT sends 8 messages on self-test with message 14 at start and end.	Pass

Table 16

Message 14 Decode Self-test	
!AIVDM,1,1,6,A,>>M46T1<59B1@E=@,0*01	
Parameter	Decoded Value
Message ID	14
Repeat Indicator	0
MMSI	970000016
Spare	0
Safety related text	SART TEST

Table 17

Message 1 Decode Self-Test	
!AIVDM,1,1,8,B,1>M46T?P00wrCN0M6q7>4?vJ0000,0*6A	
Parameter	Decoded Value
Message ID	1 - Position report
Repeat Indicator	0
MMSI	970000016
Navigational Status	15 - not defined (also used by AIS-SART under test)
Rate Of Turn	no turn information available (default)
Speed Over Ground	0
Position Accuracy	1 - high (> 10 m)
Longitude	1 14.656 W
Latitude	50 52.1628 N
Course Over Ground	not available
True Heading	511 - not available
Time Stamp	13
Special Manoeuvre Indicator	0 - not available
Spare	0
RAIM Flag	0 - RAIM not in use
Communication State - Sync State	0
Communication State - Slot Timeout	0
Communication State - Sub Message	Slot Offset = 0

Table 18



Self-Test Transmitted Messages						
Time	Slot	Chan	MMSI	Msg	Nav Status	Sentence
12:39:11	440	A	970000016	14	-	!AIVDM,1,1,6,A,>>M46T1<59B1@E=@,0*01
12:39:13	515	B	970000016	1	15	!AIVDM,1,1,8,B,1>M46T?P00wrCN0M6q7>4?vJ0000,0*6A
12:39:15	590	A	970000016	1	15	!AIVDM,1,1,9,A,1>M46T?P00wrCN0M6q7>4?vN0000,0*6C
12:39:17	665	B	970000016	1	15	!AIVDM,1,1,0,B,1>M46T?P00wrCN0M6q7>4?vR0000,0*7A
12:39:19	740	A	970000016	1	15	!AIVDM,1,1,1,A,1>M46T?P00wrCN0M6q7>4?vV0000,0*7C
12:39:21	815	B	970000016	1	15	!AIVDM,1,1,3,B,1>M46T?P00wrCN0M6q7>4?vb0000,0*49
12:39:23	890	A	970000016	1	15	!AIVDM,1,1,5,A,1>M46T?P00wrCN0M6q7>4?vf0000,0*48
12:39:25	965	B	970000016	14	-	!AIVDM,1,1,6,B,>>M46T1<59B1@E=@,0*02

Table 19

2.3.7 Test Location and Test Equipment Used

This test was carried out in the Environmental Climatic Test Laboratory.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Chamber	Montford	8ft Cubed	2127	12	16-Dec-2025
Weiss Technik (T)	Weiss Technik	WEISS ALT	2133	12	26-Feb-2026
Balance	Geniweigher	GM-11K	2334	12	24-Jun-2026
Thermometer	Digitron	T208	2340	12	5-Dec-2025
Climatic Chamber	Climatec	Climatec 2	2845	12	16-Oct-2025
Climatic Chamber	Climatec	CLIMATEC 3	2846	12	13-Jan-2026
Climatic Chamber	Climatec	WALK-IN	2847	12	29-Jan-2026
Stop Watch	Radio Spares	Model 694 (974)	4025	12	23-Jan-2026
Thermocouple Datalogger	Pico Technology Ltd	TC-08	4428	12	24-Apr-2026
Type T PFA Insulated Thermocouple	TC Limited	Type-T	4739	12	17-Oct-2025
Tape Measure 8m	Stanley	33-892	5300	-	TU
Tape measure 5m	Unknown	5913	5354	-	TU
Tape Measure	Stanley	FATMAX 33-726	5746	-	TU
VDES Test Platform	S3C	N/A	5945	-	TU
VHF GNSS Splitter Box	TÜV SÜD	N/A	5946	-	TU
Thermocouple Thermometer	Digitron	2006T	6751	12	30-Jan-2026
Thermocouple Datalogger	Pico Technology Ltd	TC-08	6944	12	13-Jan-2026

Table 20

TU - Traceability Unscheduled



2.4 Immersion (Portable Equipment)

2.4.1 Specification Reference

IEC 60945:2002, Clause 8.9.2

2.4.2 Equipment Under Test and Modification State

Model: Pathfinder AIS, S/N: TA000016 - Modification State 2

2.4.3 Date of Test

17-September-2025

2.4.4 Test Method

The following test method was performed:

A hydraulic pressure of 100 kPa (1 bar) shall be applied to the EUT for a period of 5 min.

At the end of the test the EUT shall be subjected to a performance check, and shall then be examined for damage and for unwanted ingress of water. Following examination, the EUT shall be resealed in accordance with the manufacturer's instructions. Alternatively, if there are no external signs of unwanted ingress of water, an internal examination which involves disturbance to seals may be carried out after all environmental tests have been completed.

2.4.5 Test Results

The Immersion (Portable Equipment) requirements were satisfied.

Pre-test EUT mass: 0.424 kg

Post- test EUT mass: 0.426 kg

Difference in pre and post-test mass: 2 g

This increase of 2 g is likely attributed to water retention in the lanyard assembly and telescopic mounting pole. This can be seen by the pre and post-test weights details below with these items removed.

Pre-test EUT mass with telescopic mounting pole and lanyard removed: 0.178 kg

Post-test EUT mass with telescopic mounting pole and lanyard removed: 0.178 kg

Difference in pre and post-test mass: 0g

At completion of the testing, the EUT was subjected to visual examinations and a performance check. Overall condition of the EUT was deemed satisfactory.

The condition of the EUT prior to test is shown below.



Figure 37 - EUT General View – Pre-Test (EUT label)



Figure 38 - EUT General View – Pre-Test (Lanyard side view)



Figure 39 - EUT General View – Pre-Test (button view)



Figure 40 - EUT General View – Pre-Test (Base view)



Figure 41 - EUT General View – Pre-Test (lanyard attachment)



Figure 42 - EUT General View – Pre-Test (operational buttons)

The test photographs shown below:



Figure 43 - Test Setup – EUT submerged in pressure chamber



Figure 44 - EUT General View – Post-Test (EUT label view)



2.4.6 Post-test performance checks

Performance checks	
Requirement	Verdict
EUT sends 8 messages on self-test with message 14 at start and end.	Pass

Table 21

Message 14 Decode Self-test	
!AIVDM,1,1,4,A,>>M46T1<59B1@E=@,0*03	
Parameter	Decoded Value
Message ID	14
Repeat Indicator	0
MMSI	970000016
Spare	0
Safety related text	SART TEST

Table 22

Message 1 Decode Self-Test	
!AIVDM,1,1,5,B,1>M46T?P01wrCORM6q3>4?vJ0000,0*01	
Parameter	Decoded Value
Message ID	1 - Position report
Repeat Indicator	0
MMSI	970000016
Navigational Status	15 - not defined (also used by AIS-SART under test)
Rate Of Turn	no turn information available (default)
Speed Over Ground	0
Position Accuracy	1 - high (> 10 m)
Longitude	1 14.6511 W
Latitude	50 52.1612 N
Course Over Ground	not available
True Heading	511 - not available
Time Stamp	13
Special Manoeuvre Indicator	0 - not available
Spare	0
RAIM Flag	0 - RAIM not in use
Communication State - Sync State	0
Communication State - Slot Timeout	0
Communication State - Sub Message	Slot Offset = 0

Table 23



Self-Test Transmitted Messages						
Time	Slot	Chan	MMSI	Msg	Nav Status	Sentence
14:24:11	440	A	970000016	14	-	!AIVDM,1,1,4,A,>>M46T1<59B1@E=@,0*03
14:24:13	515	B	970000016	1	15	!AIVDM,1,1,5,B,1>M46T?P01wrCORM6q3>4?vJ0000,0*01
14:24:15	590	A	970000016	1	15	!AIVDM,1,1,6,A,1>M46T?P01wrCORM6q3>4?vN0000,0*05
14:24:17	665	B	970000016	1	15	!AIVDM,1,1,7,B,1>M46T?P01wrCORM6q3>4?vR0000,0*1B
14:24:19	740	A	970000016	1	15	!AIVDM,1,1,8,A,1>M46T?P01wrCORM6q3>4?vV0000,0*13
14:24:21	815	B	970000016	1	15	!AIVDM,1,1,9,B,1>M46T?P01wrCORM6q3>4?vb0000,0*25
14:24:23	890	A	970000016	1	15	!AIVDM,1,1,0,A,1>M46T?P01wrCORM6q3>4?vf0000,0*2B
14:24:25	965	B	970000016	14	-	!AIVDM,1,1,1,B,>>M46T1<59B1@E=@,0*05

Table 24

2.4.7 Test Location and Test Equipment Used

This test was carried out in the Environmental Climatic Test Laboratory.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Over Pressure (T)	ASL (TUV)	0 TO 15 PSI	2125	-	TU
Thermocouple Calibrator	Cropico	DP6	2373	12	20-Mar-2026
Pressure Transducer	Omega	PXM409-007BAUSBH	5632	12	06-Feb-2026
VDES Test Platform	S3C	N/A	5945	-	TU
VHF GNSS Splitter Box	TÜV SÜD	N/A	5946	-	TU

Table 25

TU - Traceability Unscheduled



2.5 Vibration Test (All Equipment Categories)

2.5.1 Specification Reference

IEC 60945, Clause 8.7

2.5.2 Equipment Under Test and Modification State

Model: Pathfinder AIS, S/N: TA000016 - Modification State 2

2.5.3 Date of Test

13-October-2025 to 14-October-2025

2.5.4 Test Method

The following test method was performed:

1. Install the EUT via the supplied mounting bracket (which is turn is fixed to the vibration table).
2. Mount response accelerometers to the outside of the EUT.
3. Mount the control accelerometer as close as practicable to a EUT attachment point. If more than one accelerometer is used use average control.
4. The EUT shall be subjected to sinusoidal vertical vibration at all frequencies between:
– 2 Hz to 5 Hz and up to 13,2 Hz with an excursion of $\pm 1 \text{ mm} \pm 10 \%$ (7 m/s² maximum acceleration at 13,2 Hz); – above 13,2 Hz and up to 100 Hz with a constant maximum acceleration of 7 m/s².
5. The frequency sweep rate shall be 0,5 octaves/min in order to allow the detection of resonances in any part of the EUT as mounted.
6. A resonance search shall be carried out throughout the test. During the resonance search the EUT shall be externally observed, by unaided visual and aural means, for obvious signs of any resonances of components or sub-assemblies, that may affect the integrity of the EUT.
7. Such observations shall be recorded in the test report. If any resonance, as measured by a sensor fixed to the outside of the EUT (at the location where obvious signs of resonance have been observed) has a magnitude ratio ≥ 5 measured relative to the surface where the EUT is fastened, the EUT shall be subjected to a vibration endurance test at each resonant frequency at the vibration level specified in the test with a duration of 2 h.
8. When resonant frequencies with magnitude ratios ≥ 5 are harmonically related, only the fundamental frequency shall be tested.
9. If no resonance with a magnitude ratio ≥ 5 occurs, the endurance test shall be carried out at one single observed frequency.
10. If no resonance occurred, the endurance test shall be carried out at a frequency of 30 Hz.
11. The procedure shall be repeated with vibration in each of two mutually perpendicular directions in the horizontal plane.

Note: GNSS position was provided throughout the test by a GNSS Simulator.



2.5.5 Test Results

The Vibration Test (all equipment categories) requirements were satisfied.

Performance checks were carried out at least once during each endurance test period, and once before the end of each endurance period.

At completion of the testing the EUT was subjected to visual examinations and operational checks. Overall condition of the EUT was deemed satisfactory.

Date	Run	Performance Check Result	Visual Result	Test progress	Comment /Cross reference.
13 Oct 2025	1	Satisfactory	No Deterioration	Satisfactory	X axis resonance search. Resonance identified at 85.82 Hz
13 Oct 2025	2	Satisfactory	No Deterioration	Satisfactory	X axis endurance run at 85.82 Hz
13 Oct 2025	3	Satisfactory	No Deterioration	Satisfactory	Y axis resonance search. Resonance identified at 59.9 Hz.
13 Oct 2025	4	Satisfactory	No Deterioration	Satisfactory	Y axis endurance run at 59.9 Hz.
14 Oct 2025	5	Satisfactory	No Deterioration	Satisfactory	Z axis resonance search. Resonance identified at 91.9 Hz.
14 Oct 2025	6	Satisfactory	No Deterioration	Satisfactory	Z axis endurance run at 91.9 Hz.

Table 26

Test Setup photographs



Figure 45 - EUT General View



Figure 46 – X Axis Test Setup

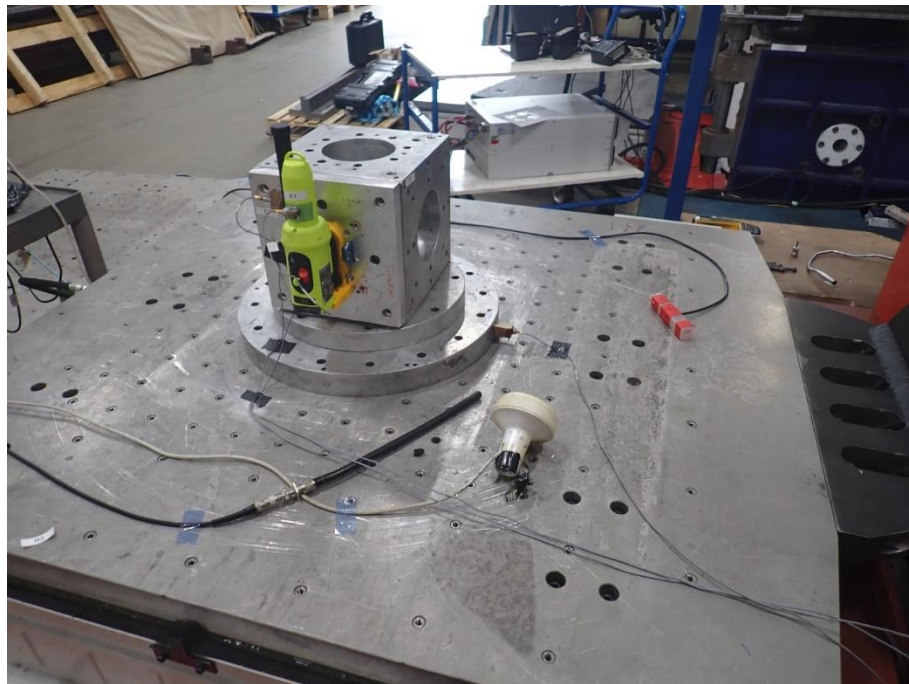


Figure 47 - Y Axis Test Setup

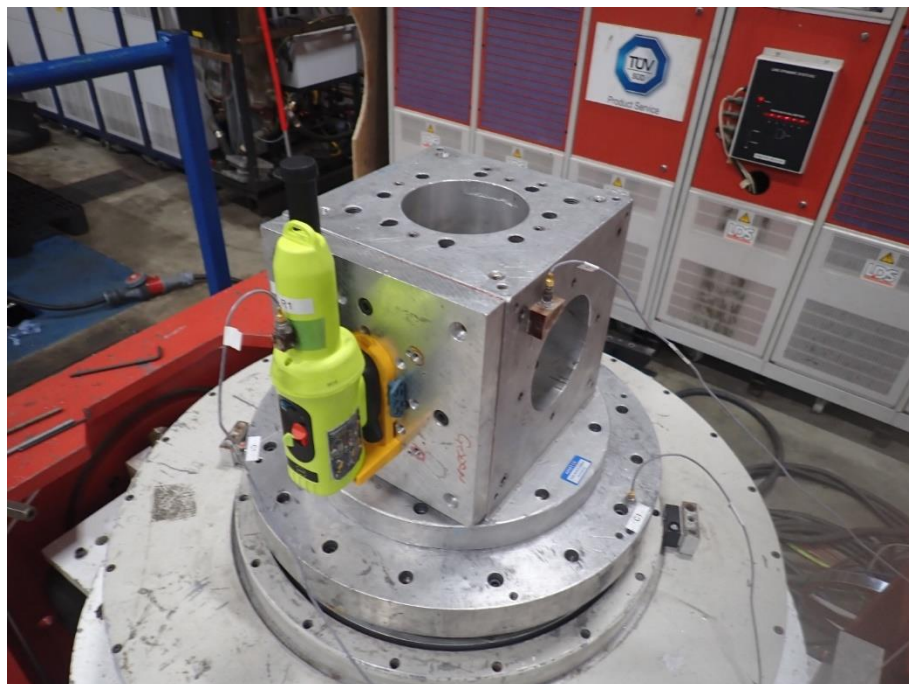


Figure 48 - Z Axis Test Setup

Control and response plots recorded during the test are shown below:

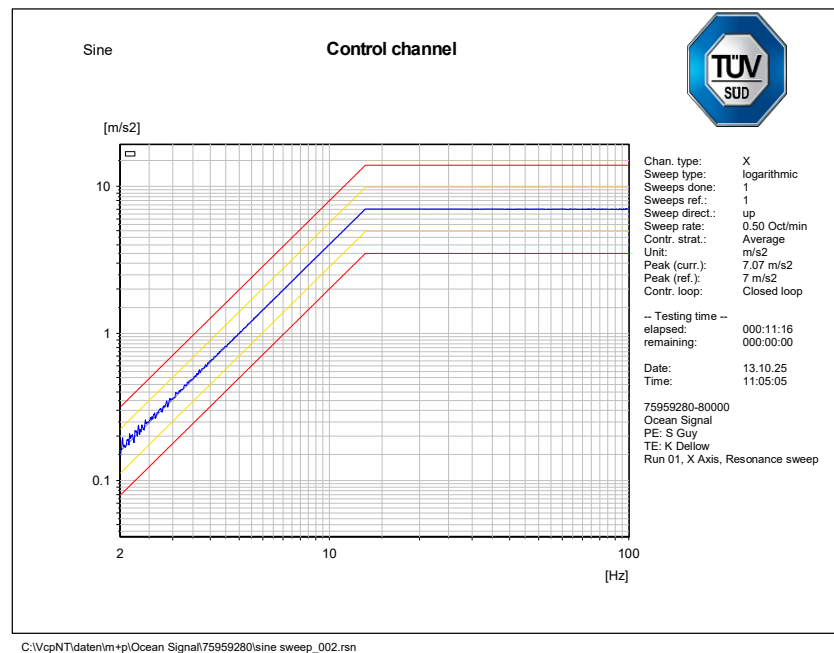


Figure 49, Run 1, X Axis, Resonance Search – Control.

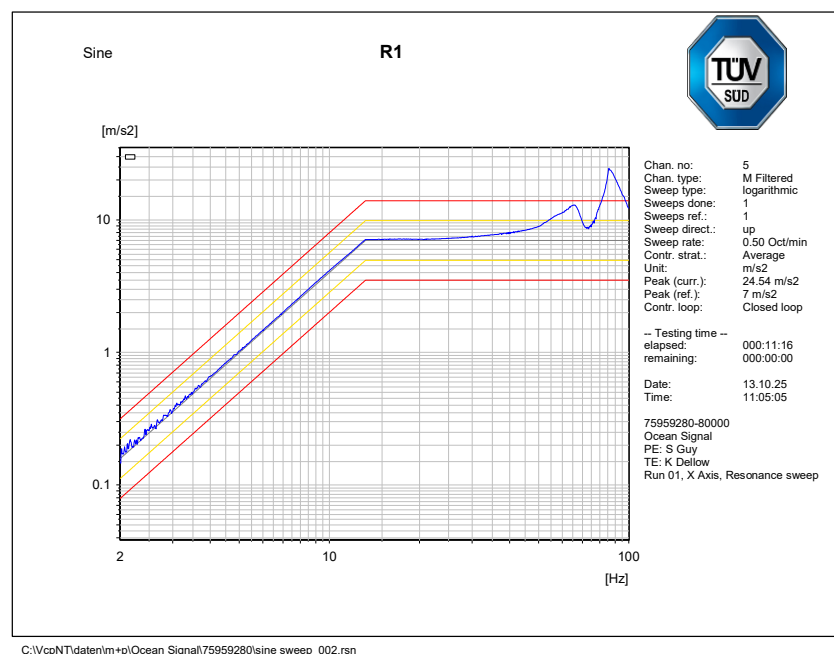


Figure 50 Run 01, X Axis, Resonance Search – EUT Response.

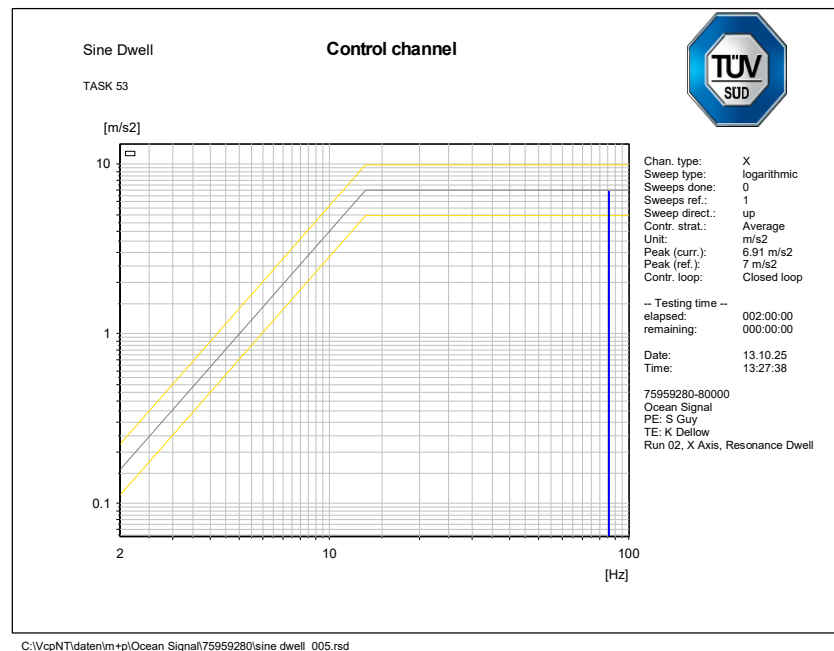


Figure 51 Run 2, X Axis, Endurance Run (85.8 Hz) – Control.

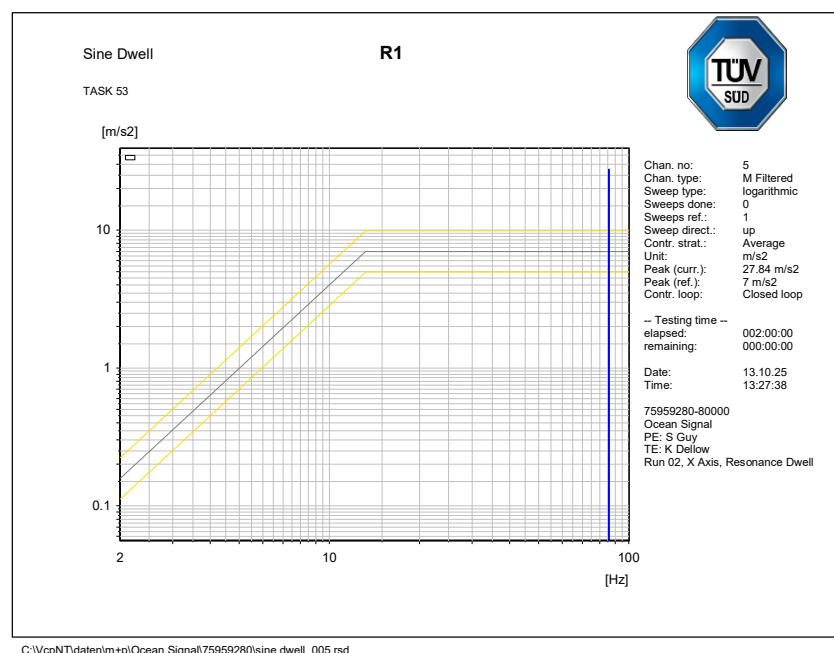


Figure 52 Run 2, X Axis, Endurance Run (85.8 Hz) – EUT Response.

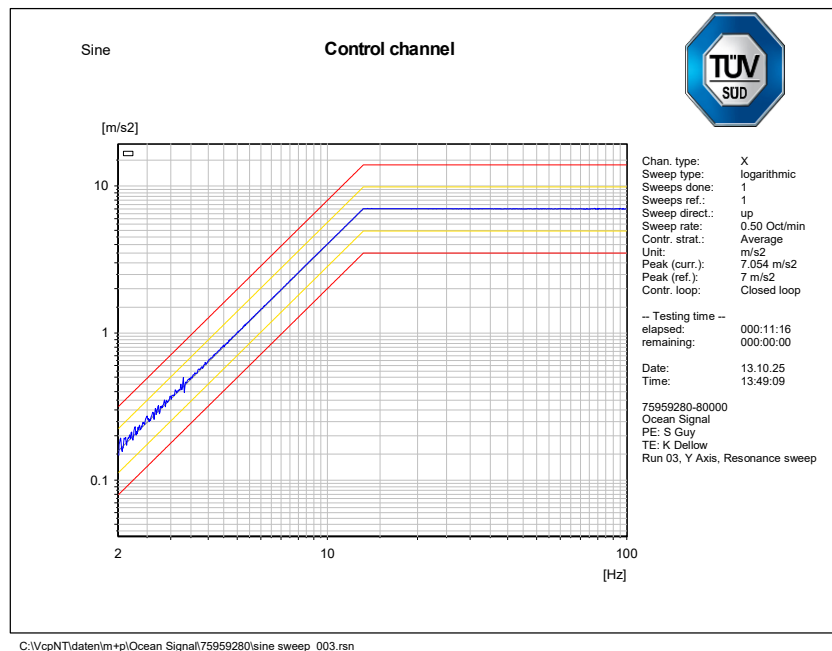


Figure 53 Run 3, Y Axis, Resonance Search – Control.

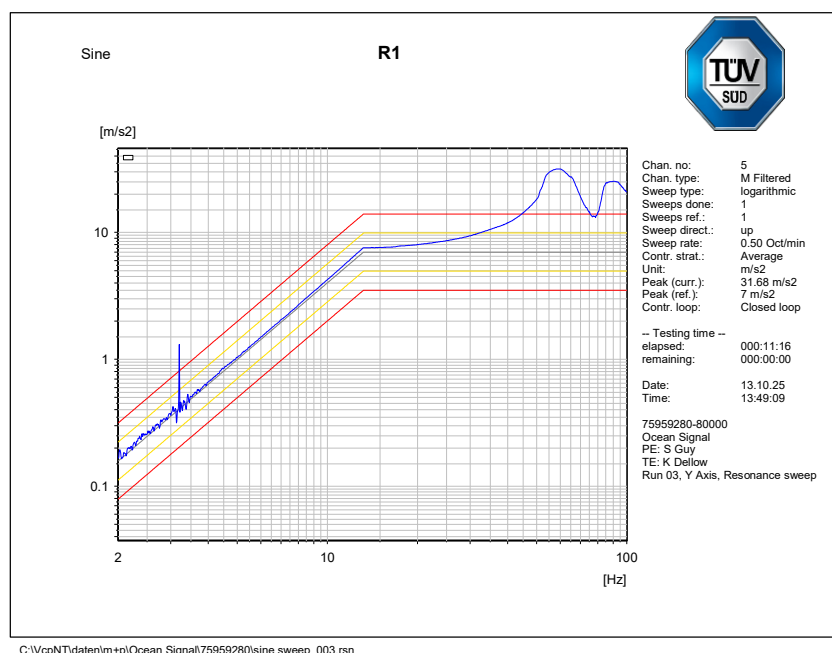


Figure 54 Run 3, Y Axis, Resonance Search – EUT Response.

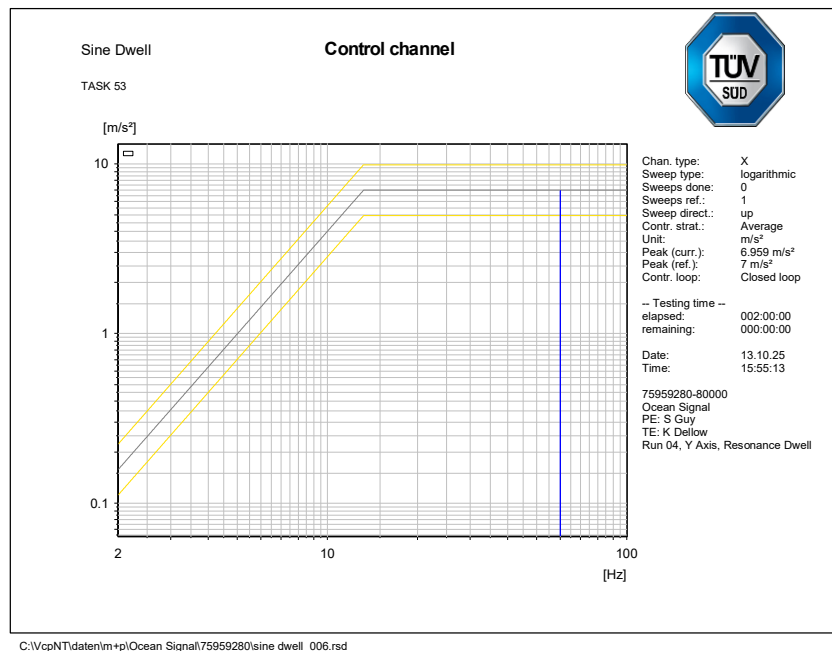


Figure 55 Run 4, X Axis, Endurance Run (59.9 Hz) – Control.

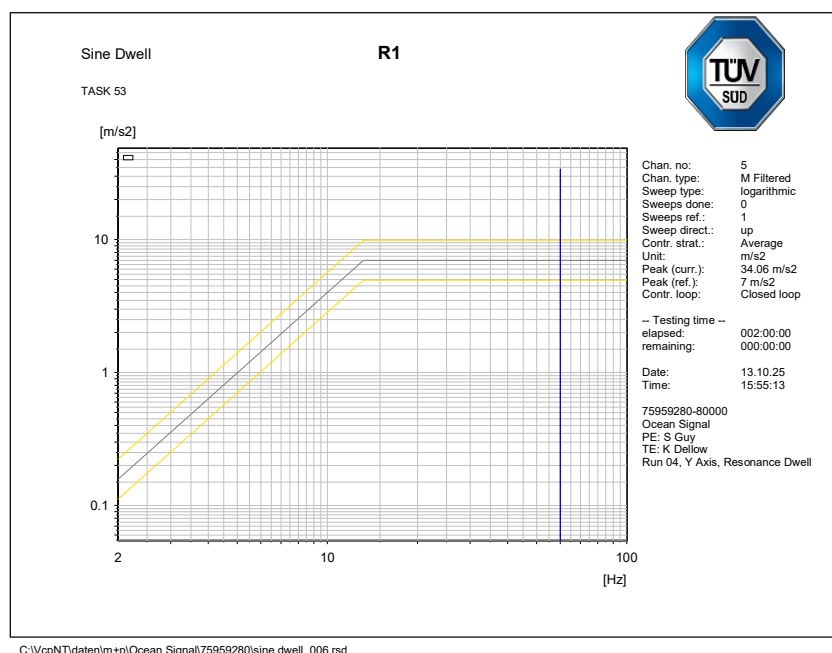


Figure 56 Run 4, X Axis, Endurance Run (59.9 Hz) – EUT Response.

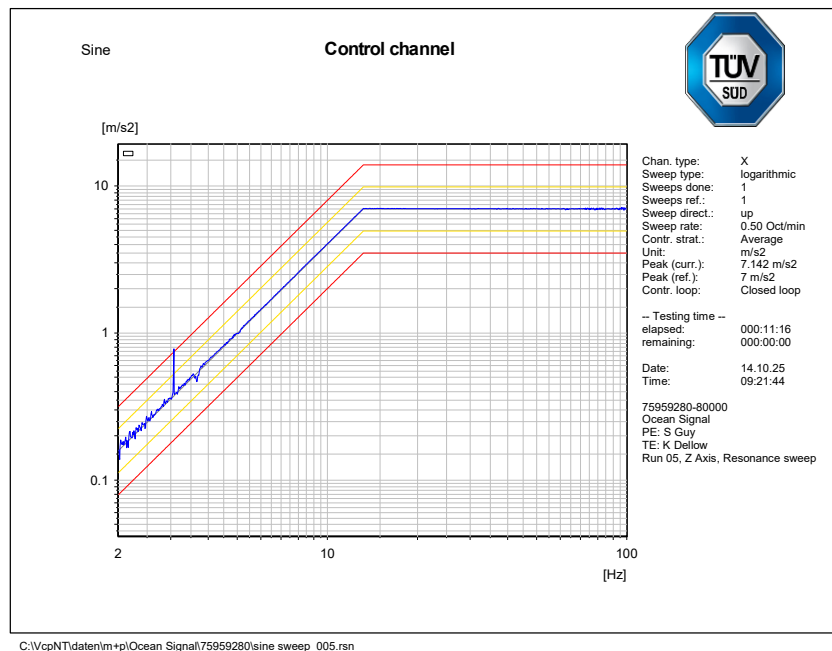


Figure 57 Run 5, Z Axis, Resonance Search – Control.

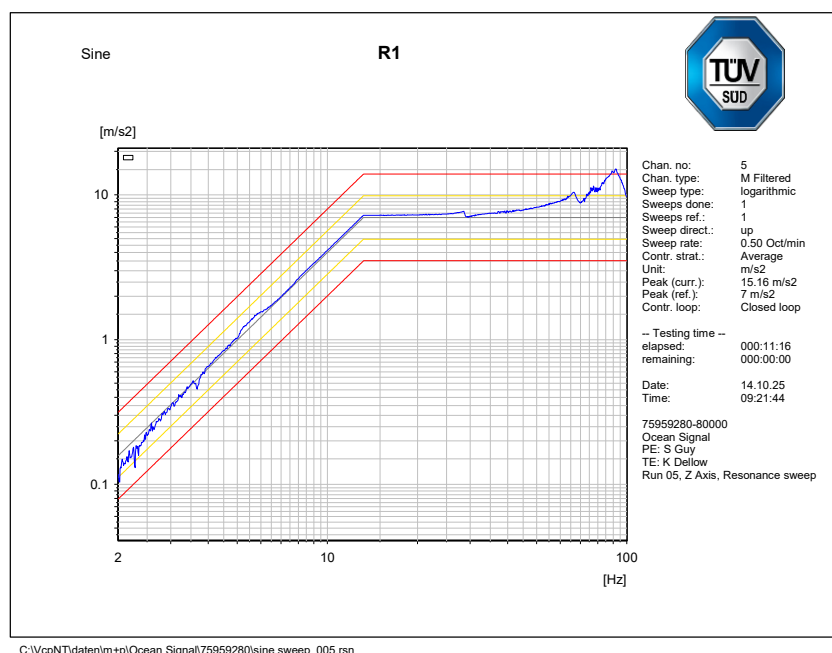


Figure 58 Run 5, Z Axis, Resonance Search – EUT Response.

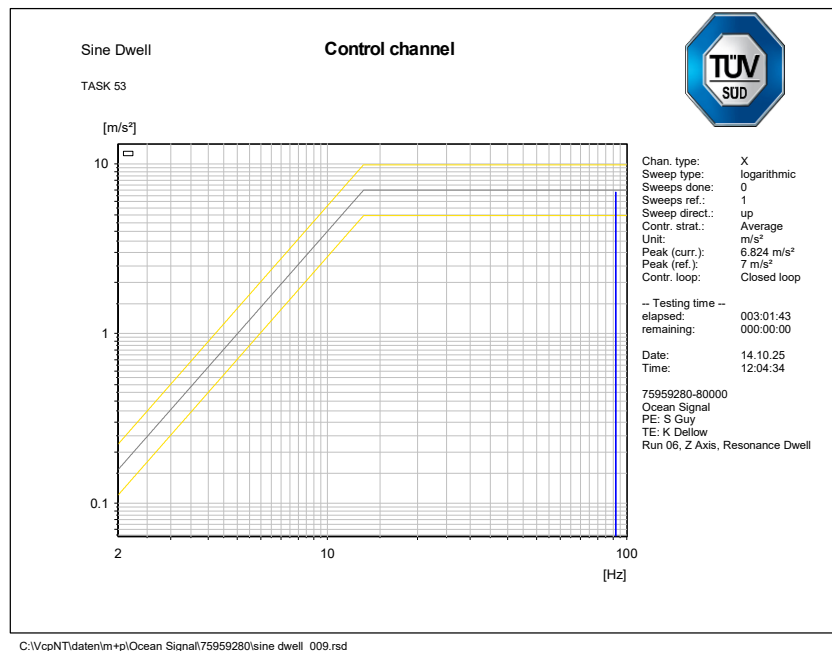


Figure 59 Run 6, Z Axis, Endurance Run (91.9 Hz) – Control.

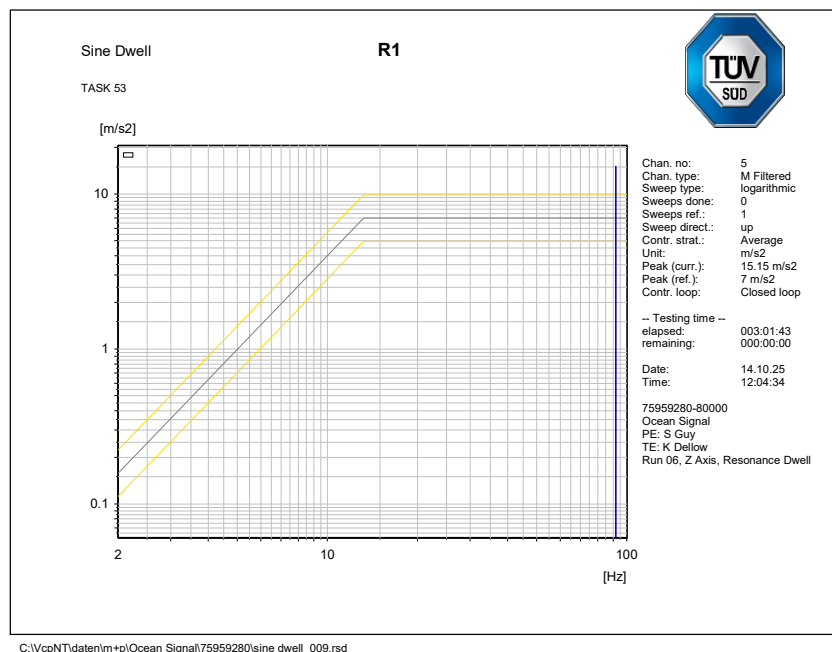


Figure 60 Run 6, Z Axis, Endurance Run (91.9 Hz) – EUT Response.



2.5.6 Post-test performance checks

X Axis Vibration measurement.

Performance checks	
Requirement	Verdict
EUT sends 8 messages on self-test with message 14 at start and end.	Pass

Table 27

Message 14 Decode Self-test	
!AIVDM,1,1,0,A,>>M46T1<59B1@E=@,0*07	
Parameter	Decoded Value
Message ID	14
Repeat Indicator	0
MMSI	970000016
Spare	0
Safety related text	SART TEST

Table 28

Message 1 Decode Self-Test	
!AIVDM,1,1,1,B,1>M46T?P01OrCEFM6o7>4?wF0000,0*34	
Parameter	Decoded Value
Message ID	1 - Position report
Repeat Indicator	0
MMSI	970000016
Navigational Status	15 - not defined (also used by AIS-SART under test)
Rate Of Turn	no turn information available (default)
Speed Over Ground	0
Position Accuracy	0 - low (>10 m)
Longitude	1 14.6837 W
Latitude	50 52.11 16 N
Course Over Ground	not available
True Heading	511 - not available
Time Stamp	43
Special Manoeuvre Indicator	0 - not available
Spare	0
RAIM Flag	0 - RAIM not in use
Communication State - Sync State	0
Communication State - Slot Timeout	0
Communication State - Sub Message	Slot Offset = 0

Table 29



Check halfway through endurance period:

Self-Test Transmitted Messages						
Time	Slot	Chan	MMSI	Msg	Nav Status	Sentence
08:06:41	1565	A	970000016	14	-	!AIVDM,1,1,0,A,>>M46T1<59B1@E=@,0*07
08:06:43	1640	B	970000016	1	15	!AIVDM,1,1,1,B,1>M46T?P01OrCEFM6o7>4?wF0000,0*34
08:06:45	1715	A	970000016	1	15	!AIVDM,1,1,2,A,1>M46T?P01OrCEFM6o7>4?wJ0000,0*38
08:06:47	1790	B	970000016	1	15	!AIVDM,1,1,3,B,1>M46T?P01OrCEFM6o7>4?wN0000,0*3E
08:06:49	1865	A	970000016	1	15	!AIVDM,1,1,4,A,1>M46T?P01OrCEFM6o7>4?wR0000,0*26
08:06:51	1940	B	970000016	1	15	!AIVDM,1,1,5,B,1>M46T?P01OrCEFM6o7>4?wV0000,0*20
08:06:53	2015	A	970000016	1	15	!AIVDM,1,1,6,A,1>M46T?P01OrCEFM6o7>4?wb0000,0*14
08:06:55	2090	B	970000016	14	-	!AIVDM,1,1,7,B,>>M46T1<59B1@E=@,0*03

Table 30

Check just before end of endurance period:

Self-Test Transmitted Messages						
Time	Slot	Chan	MMSI	Msg	Nav Status	Sentence
08:09:11	440	A	970000016	14	-	!AIVDM,1,1,0,A,>>M46T1<59B1@E=@,0*07
08:09:13	515	B	970000016	1	15	!AIVDM,1,1,1,B,1>M46T?P00wrC?tM6p1f4?vJ0000,0*09
08:09:15	590	A	970000016	1	15	!AIVDM,1,1,2,A,1>M46T?P00wrC?tM6p1f4?vN0000,0*0D
08:09:17	665	B	970000016	1	15	!AIVDM,1,1,3,B,1>M46T?P00wrC?tM6p1f4?vR0000,0*13
08:09:19	740	A	970000016	1	15	!AIVDM,1,1,4,A,1>M46T?P00wrC?tM6p1f4?vV0000,0*13
08:09:21	815	B	970000016	1	15	!AIVDM,1,1,5,B,1>M46T?P00wrC?tM6p1f4?vb0000,0*25
08:09:23	890	A	970000016	1	15	!AIVDM,1,1,6,A,1>M46T?P00wrC?tM6p1f4?vf0000,0*21
08:09:25	965	B	970000016	14	-	!AIVDM,1,1,7,B,>>M46T1<59B1@E=@,0*03

Table 31



Y Axis Vibration measurement

Performance checks	
Requirement	Verdict
EUT sends 8 messages on self-test with message 14 at start and end.	Pass

Table 32

Message 14 Decode Self-test	
!AIVDM,1,1,0,A,>>M46T1<59B1@E=@,0*07	
Parameter	Decoded Value
Message ID	14
Repeat Indicator	0
MMSI	970000016
Spare	0
Safety related text	SART TEST

Table 33

Message 1 Decode Self-Test	
!AIVDM,1,1,1,B,1>M46T?P00wrC?rM6p1f4?wF0000,0*02	
Parameter	Decoded Value
Message ID	1 - Position report
Repeat Indicator	0
MMSI	970000016
Navigational Status	15 - not defined (also used by AIS-SART under test)
Rate Of Turn	no turn information available (default)
Speed Over Ground	0
Position Accuracy	1 - high (> 10 m)
Longitude	1 14.7011 W
Latitude	50 52.135 N
Course Over Ground	not available
True Heading	511 - not available
Time Stamp	43
Special Manoeuvre Indicator	0 - not available
Spare	0
RAIM Flag	0 - RAIM not in use
Communication State - Sync State	0
Communication State - Slot Timeout	0
Communication State - Sub Message	Slot Offset = 0

Table 34



Check halfway through endurance period:

Self-Test Transmitted Messages						
Time	Slot	Chan	MMSI	Msg	Nav Status	Sentence
08:08:41	1565	A	970000016	14	-	!AIVDM,1,1,0,A,>>M46T1<59B1@E=@,0*07
08:08:43	1640	B	970000016	1	15	!AIVDM,1,1,1,B,1>M46T?P00wrC?rM6p1f4?wF0000,0*02
08:08:45	1715	A	970000016	1	15	!AIVDM,1,1,2,A,1>M46T?P00wrC?rM6p1f4?wJ0000,0*0E
08:08:47	1790	B	970000016	1	15	!AIVDM,1,1,3,B,1>M46T?P00wrC?rM6p1f4?wN0000,0*08
08:08:49	1865	A	970000016	1	15	!AIVDM,1,1,4,A,1>M46T?P00wrC?rM6p1f4?wR0000,0*10
08:08:51	1940	B	970000016	1	15	!AIVDM,1,1,5,B,1>M46T?P00wrC?rM6p1f4?wV0000,0*16
08:08:53	2015	A	970000016	1	15	!AIVDM,1,1,6,A,1>M46T?P00wrC?rM6p1f4?wb0000,0*22
08:08:55	2090	B	970000016	14	-	!AIVDM,1,1,7,B,>>M46T1<59B1@E=@,0*03

Table 35

Check just before end of endurance period:

Self-Test Transmitted Messages						
Time	Slot	Chan	MMSI	Msg	Nav Status	Sentence
08:03:35	1340	A	970000016	14	-	!AIVDM,1,1,1,A,>>M46T1<59B1@E=@,0*06
08:03:37	1415	B	970000016	1	15	!AIVDM,1,1,2,B,1>M46T?P00wrC?vM6p1v4?w:0000,0*69
08:03:39	1490	A	970000016	1	15	!AIVDM,1,1,4,A,1>M46T?P00wrC?vM6p1v4?w>0000,0*68
08:03:41	1565	B	970000016	1	15	!AIVDM,1,1,6,B,1>M46T?P00wrC?vM6p1v4?wB0000,0*15
08:03:43	1640	A	970000016	1	15	!AIVDM,1,1,7,A,1>M46T?P00wrC?vM6p1v4?wF0000,0*13
08:03:45	1715	B	970000016	1	15	!AIVDM,1,1,9,B,1>M46T?P00wrC?vM6p1v4?wJ0000,0*12
08:03:47	1790	A	970000016	1	15	!AIVDM,1,1,1,A,1>M46T?P00wrC?vM6p1v4?wN0000,0*1D
08:03:49	1865	B	970000016	14	-	!AIVDM,1,1,3,B,>>M46T1<59B1@E=@,0*07

Table 36



Y Axis Vibration measurement

Performance checks	
Requirement	Verdict
EUT sends 8 messages on self-test with message 14 at start and end.	Pass

Table 37

Message 14 Decode Self-test	
!AIVDM,1,1,0,A,>>M46T1<59B1@E=@,0*07	
Parameter	Decoded Value
Message ID	14
Repeat Indicator	0
MMSI	970000016
Spare	0
Safety related text	SART TEST

Table 38

Message 1 Decode Self-Test	
!AIVDM,1,1,1,B,1>M46T?P00wrC?pM6p1f4?wF0000,0*00	
Parameter	Decoded Value
Message ID	1 - Position report
Repeat Indicator	0
MMSI	970000016
Navigational Status	15 - not defined (also used by AIS-SART under test)
Rate Of Turn	no turn information available (default)
Speed Over Ground	0
Position Accuracy	1 - high (> 10 m)
Longitude	1 14.7012 W
Latitude	50 52.135 N
Course Over Ground	not available
True Heading	511 - not available
Time Stamp	43
Special Manoeuvre Indicator	0 - not available
Spare	0
RAIM Flag	0 - RAIM not in use
Communication State - Sync State	0
Communication State - Slot Timeout	0
Communication State - Sub Message	Slot Offset = 0

Table 39



Check halfway through endurance period:

Self-Test Transmitted Messages						
Time	Slot	Chan	MMSI	Msg	Nav Status	Sentence
08:08:41	1565	A	970000016	14	-	!AIVDM,1,1,0,A,>>M46T1<59B1@E=@,0*07
08:08:43	1640	B	970000016	1	15	!AIVDM,1,1,1,B,1>M46T?P00wrC?pM6p1f4?wF0000,0*00
08:08:45	1715	A	970000016	1	15	!AIVDM,1,1,2,A,1>M46T?P00wrC?pM6p1f4?wJ0000,0*0C
08:08:47	1790	B	970000016	1	15	!AIVDM,1,1,3,B,1>M46T?P00wrC?pM6p1f4?wN0000,0*0A
08:08:49	1865	A	970000016	1	15	!AIVDM,1,1,4,A,1>M46T?P00wrC?pM6p1f4?wR0000,0*12
08:08:51	1940	B	970000016	1	15	!AIVDM,1,1,5,B,1>M46T?P00wrC?pM6p1f4?wV0000,0*14
08:08:53	2015	A	970000016	1	15	!AIVDM,1,1,6,A,1>M46T?P00wrC?pM6p1f4?wb0000,0*20
08:08:55	2090	B	970000016	14	-	!AIVDM,1,1,7,B,>>M46T1<59B1@E=@,0*03

Table 40

Check just before end of endurance period:

Self-Test Transmitted Messages						
Time	Slot	Chan	MMSI	Msg	Nav Status	Sentence
08:05:37	1415	A	970000016	14	-	!AIVDM,1,1,0,A,>>M46T1<59B1@E=@,0*07
08:05:39	1490	B	970000016	1	15	!AIVDM,1,1,1,B,1>M46T?P00wrC@0M6p1N4?w>0000,0*6F
08:05:41	1565	A	970000016	1	15	!AIVDM,1,1,2,A,1>M46T?P00wrC@0M6p1N4?wB0000,0*13
08:05:43	1640	B	970000016	1	15	!AIVDM,1,1,3,B,1>M46T?P00wrC@0M6p1N4?wF0000,0*15
08:05:45	1715	A	970000016	1	15	!AIVDM,1,1,4,A,1>M46T?P00wrC@0M6p1N4?wJ0000,0*1D
08:05:47	1790	B	970000016	1	15	!AIVDM,1,1,5,B,1>M46T?P00wrC@0M6p1N4?wN0000,0*1B
08:05:49	1865	A	970000016	1	15	!AIVDM,1,1,6,A,1>M46T?P00wrC@0M6p1N4?wR0000,0*07
08:05:51	1940	B	970000016	14	-	!AIVDM,1,1,7,B,>>M46T1<59B1@E=@,0*03

Table 41

2.5.7 Test Location and Test Equipment Used

This test was carried out in the Environmental Mechanical Test Laboratory.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Vibration System	Ling Dynamic Systems	LDS V964	2515	6	31-Jan-2026
Isotron Accelerometer	PCB Piezotronic	M353B18	4590	6	01-Nov-2025
IEPE Accelerometer	Dytran	3049E1	5090	6	15-Feb-2026
Accelerometer	Dytran	3049E1	5701	6	20-Feb-2026
Vibration Control System, Master	m + p International	VibRunner	5995	12	20-Aug-2026
VDES test platform	S3C	VDES1000	5945	-	TU
GPS simulator	Spirent	GSS7000	6312	12	12/02/2026

Table 42

TU - Traceability Unscheduled



2.6 Dry Heat Test (Storage & Functional)

2.6.1 Specification Reference

IEC 60945, Clause 8.2

2.6.2 Equipment Under Test and Modification State

Model: Pathfinder AIS, S/N: TA000016 - Modification State 0

2.6.3 Date of Test

04-August-2025 to 06-August-2025

2.6.4 Test Method

The following test method was performed:

Test 1 – Storage test

The EUT shall be placed in a chamber at normal room temperature and relative humidity. The temperature shall then be raised to and maintained at $+70\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$, for a period of 10 h to 16 h.

At the end of the test, the EUT shall be returned to normal environmental conditions and subjected to a performance check.

Test 2 – Functional test

The EUT shall be placed in a chamber at normal room temperature and relative humidity. The EUT shall then be switched on. The temperature shall then be raised to and maintained at $+55\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$. At the end of a soak period of 10 h to 16 h at $+55\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$, the EUT shall be subjected to a performance test and check.

The temperature of the chamber shall be maintained at $+55\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$ during the whole performance test period.

At the end of the test, the EUT shall be returned to normal environmental conditions.

2.6.5 Test Results

The Dry Heat Test (Storage & Functional) requirements were satisfied.

Test Setup photographs are below:

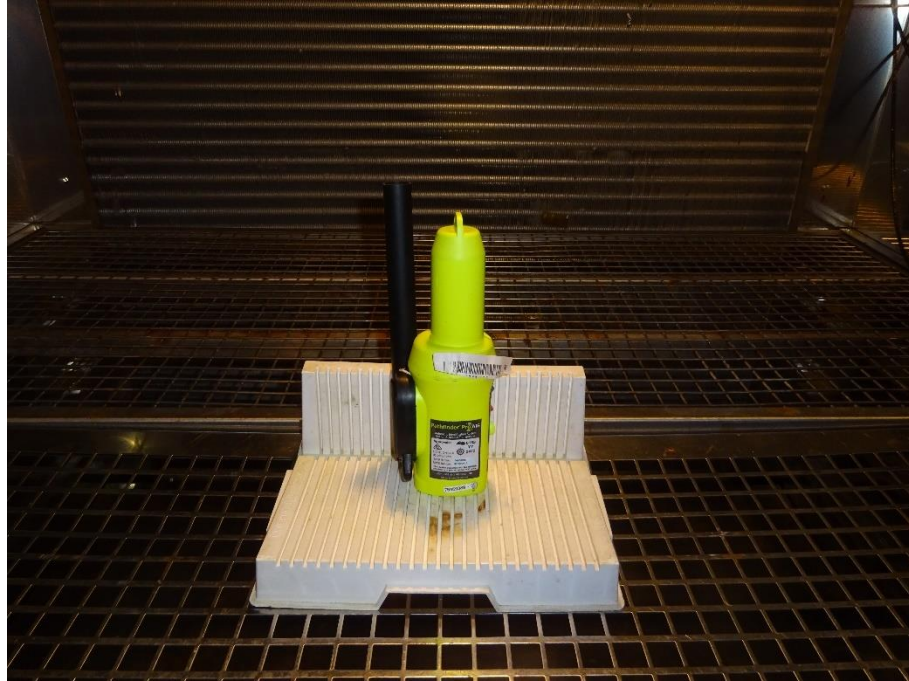


Figure 61 – EUT in chamber

Plots of the test chamber conditions are shown below:

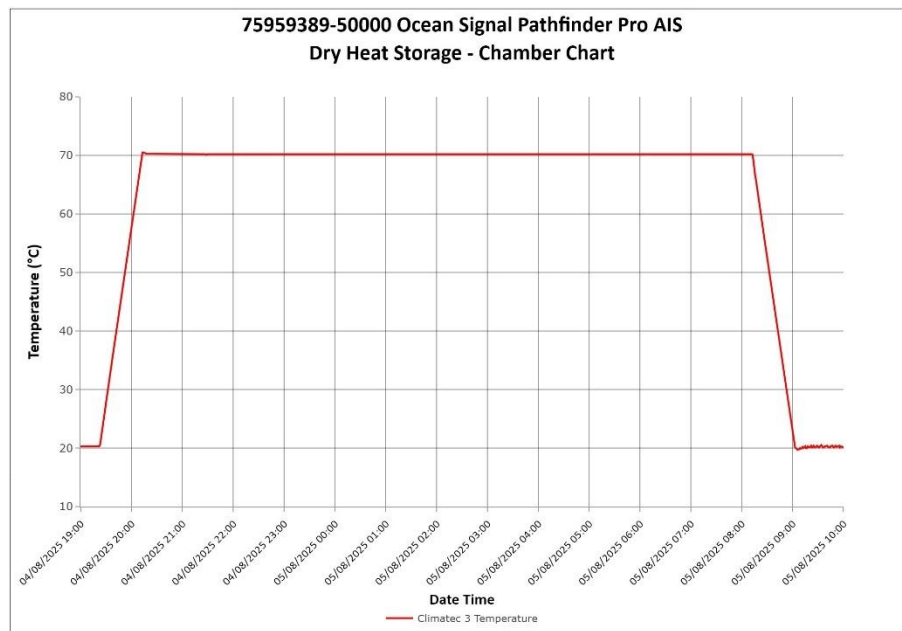


Figure 62 – Chamber Plot – Storage Test

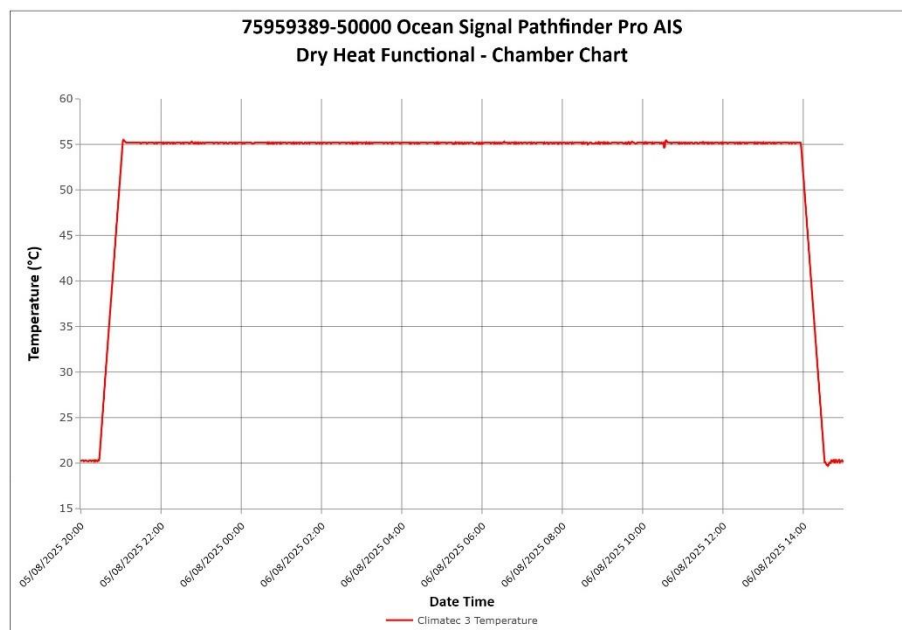


Figure 63 - Chamber Plot – Functional Test



Dry Heat Storage Test

The performance check was supplied with Live position.

Performance checks	
Requirement	Verdict
EUT sends 8 messages on self-test with message 14 at start and end.	Pass

Table 43

Message 14 Decode Self-test	
!AIVDM,1,1,5,A,>>M46T1<59B1@E=@,0*02	
Parameter	Decoded Value
Message ID	14
Repeat Indicator	0
MMSI	970000016
Spare	0
Safety related text	SART TEST

Table 44

Message 1 Decode Self-Test	
!AIVDM,1,1,6,B,1>M46T?P01wrCI>M6pu>4?vv0000,0*13	
Parameter	Decoded Value
Message ID	1 - Position report
Repeat Indicator	0
MMSI	970000016
Navigational Status	15 - not defined (also used by AIS-SART under test)
Rate Of Turn	no turn information available (default)
Speed Over Ground	0
Position Accuracy	1 - high (> 10 m)
Longitude	1 14.6713 W
Latitude	50 52.1588 N
Course Over Ground	not available
True Heading	511 - not available
Time Stamp	31
Special Manoeuvre Indicator	0 - not available
Spare	0
RAIM Flag	0 - RAIM not in use
Communication State - Sync State	0
Communication State - Slot Timeout	0
Communication State - Sub Message	Slot Offset = 0

Table 45



Self-Test Transmitted Messages						
Time	Slot	Chan	MMSI	Msg	Nav Status	Sentence
10:12:29	1115	A	970000016	14		!AIVDM,1,1,5,A,>>M46T1<59B1@E=@,0*02
10:12:31	1190	B	970000016	1	15	!AIVDM,1,1,6,B,1>M46T?P01wrCl>M6pu>4?v0000,0*13
10:12:33	1265	A	970000016	1	15	!AIVDM,1,1,7,A,1>M46T?P01wrCl>M6pu>4?w20000,0*54
10:12:35	1340	B	970000016	1	15	!AIVDM,1,1,8,B,1>M46T?P01wrCl>M6pu>4?w60000,0*5C
10:12:37	1415	A	970000016	1	15	!AIVDM,1,1,9,A,1>M46T?P01wrCl>M6pu>4?w:0000,0*52
10:12:39	1490	B	970000016	1	15	!AIVDM,1,1,0,B,1>M46T?P01wrCl>M6pu>4?w>0000,0*5C
10:12:41	1565	A	970000016	1	15	!AIVDM,1,1,1,A,1>M46T?P01wrCl>M6pu>4?wB0000,0*22
10:12:43	1640	B	970000016	14		!AIVDM,1,1,2,B,>>M46T1<59B1@E=@,0*06

Table 46



Dry Heat Functional Test

A performance test was performed at the end of the test. GNSS position was provided with a GNSS simulator.

Performance Test	
The AIS SART transmits valid position data.	Pass
User ID (MMSI) as configured in the AIS-SART.	Pass
The transmitted data complies with sensor inputs, position, COG, SOG, ROT	Pass
Message 14 safety related text test message is "SART TEST"	Pass
Navigational status is set to 15 on message 1 self-test.	Pass
Position accuracy = according to the RAIM result if provided, otherwise 0.	Pass
Time stamp = actual UTC second (0...59).	Pass
EUT sends 8 messages on self-test with message 14 at start and end.	Pass
Verify correct indication as per manufacturer's documentation.	Pass
The communication state time-out always = 0 with sub message = 0.	Pass
The AIS SART transmits valid position data.	Pass

Table 47

Message 14 Decode Self-test	
!ABVDM,1,1,8,A,>>M46T1<59B1@E=@,0*04	
Parameter	Decoded Value
Message ID	14
Repeat Indicator	0
MMSI	970000016
Spare	0
Safety related text	SART TEST

Table 48

Message 1 Decode Self-Test	
!ABVDM,1,1,9,B,1>M46T?P00wrC?jM6p2>4?w:0000,0*3E	
Parameter	Decoded Value
Message ID	1 - Position report
Repeat Indicator	0
MMSI	970000016
Navigational Status	15 - not defined (also used by AIS-SART under test)
Rate Of Turn	no turn information available (default)
Speed Over Ground	0
Position Accuracy	1 - high (> 10 m)
Longitude	1 14.7015 W
Latitude	50 52.1352 N
Course Over Ground	not available
True Heading	511 - not available
Time Stamp	37
Special Manoeuvre Indicator	0 - not available
Spare	0
RAIM Flag	0 - RAIM not in use
Communication State - Sync State	0
Communication State - Slot Timeout	0
Communication State - Sub Message	Slot Offset = 0

Table 49



Self-Test Transmitted Messages						
Time	Slot	Chan	MMSI	Msg	Nav Status	Sentence
10:43:33	-	A	970000016	14	-	!ABVDM,1,1,8,A,>>M46T1<59B1@E=@,0*04
10:43:35	-	B	970000016	1	15	!ABVDM,1,1,9,B,1>M46T?P00wrC?jM6p2>4?w:0000,0*3E
10:43:37	-	A	970000016	1	15	!ABVDM,1,1,0,A,1>M46T?P00wrC?jM6p2>4?w>0000,0*30
10:43:39	-	B	970000016	1	15	!ABVDM,1,1,1,B,1>M46T?P00wrC?jM6p2>4?wB0000,0*4E
10:43:41	-	A	970000016	1	15	!ABVDM,1,1,2,A,1>M46T?P00wrC?jM6p2>4?wF0000,0*4A
10:43:43	-	B	970000016	1	15	!ABVDM,1,1,3,B,1>M46T?P00wrC?jM6p2>4?wJ0000,0*44
10:43:45	-	A	970000016	1	15	!ABVDM,1,1,4,A,1>M46T?P00wrC?jM6p2>4?wN0000,0*44
10:43:47	-	B	970000016	14	-	!ABVDM,1,1,5,B,>>M46T1<59B1@E=@,0*0A

Table 50

2.6.6 Test Location and Test Equipment Used

This test was carried out in the Environmental Climatic Test Laboratory.

Instrument	Manufacturer	Type No	TE No.	Calibration Period	Calibration Expiry Date
Climatic Chamber	Climatec	CLIMATEC 3	2846	12	13-Jan-2026
GNSS Simulator	Spirent	GSS7000	6312	12	12-Feb-2026
VDES Test Platform	S3C	N/A	5945	-	TU
VHF GNSS Splitter Box	TÜV SÜD	N/A	5946	-	TU

Table 51

TU - Traceability Unscheduled



2.7 Damp Heat Test (Storage & Functional)

2.7.1 Specification Reference

IEC 60945, Clause 8.3

2.7.2 Equipment Under Test and Modification State

Model: Pathfinder AIS, S/N: TA000016 - Modification State 0

2.7.3 Date of Test

16-June-2024 to 17-June-2024

2.7.4 Test Method

The following test method was performed:

The EUT shall be placed in a chamber at normal room temperature and relative humidity.

The temperature shall then be raised to $+40\text{ °C} \pm 2\text{ °C}$, and the relative humidity raised to $93\% \pm 3\%$ over a period of $3\text{ h} \pm 0,5\text{ h}$. These conditions shall be maintained for a period of 10 h to 16 h. Any climatic control devices provided in the EUT may be switched on at the conclusion of this period.

The EUT shall be switched on 30 min later, or after such period as agreed by the manufacturer, and shall be kept operational for at least 2 h during which period the EUT shall be subjected to a performance check.

The temperature and relative humidity of the chamber shall be maintained as specified during the whole test period.

At the end of the test period and with the EUT still in the chamber, the chamber shall be brought to room temperature in not less than 1 h.

At the end of the test the EUT shall be returned to normal environmental conditions.

2.7.5 Test Results

The Damp Heat Test (Functional) requirements were satisfied.

At completion of the testing the EUT was subjected to visual examinations and a performance check. Overall condition of the EUT was deemed satisfactory.

Test Setup photographs shown below:



Figure 64 – EUT in chamber

Plots of the test chamber conditions are shown below:

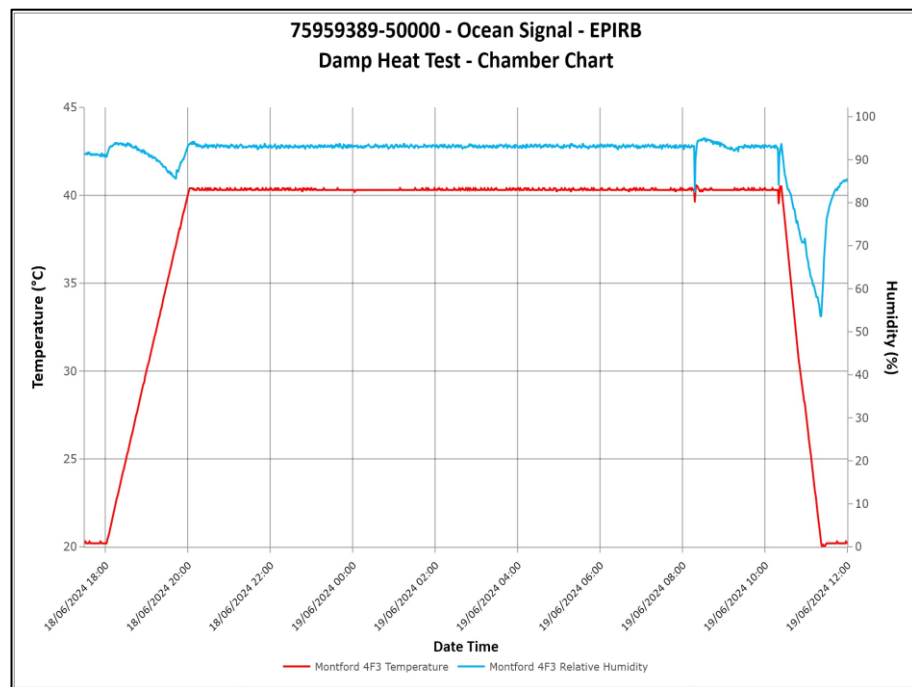


Figure 65 – Chamber Plot



Performance Checks

GNSS position was provided with a GNSS simulator.

Performance checks	
Requirement	Verdict
EUT sends 8 messages on self-test with message 14 at start and end.	Pass

Table 52

Message 14 Decode Self-test	
!AIVDM,1,1,,A,>>M46T1<59B1@E=@,0*37	
Parameter	Decoded Value
Message ID	14
Repeat Indicator	0
MMSI	970000016
Spare	0
Safety related text	SART TEST

Table 53

Message 1 Decode Self-Test	
!AIVDM,1,1,,B,1>M46T?P00P5j7PM6j6>4?vB0000,0*10	
Parameter	Decoded Value
Message ID	1 - Position report
Repeat Indicator	0
MMSI	970000016
Navigational Status	15 - not defined (also used by AIS-SART under test)
Rate Of Turn	no turn information available (default)
Speed Over Ground	0
Position Accuracy	1 - high (> 10 m)
Longitude	1 15.8 E
Latitude	50 51.9832 N
Course Over Ground	not available
True Heading	511 - not available
Time Stamp	9
Special Manoeuvre Indicator	0 - not available
Spare	0
RAIM Flag	0 - RAIM not in use
Communication State - Sync State	0
Communication State - Slot Timeout	0
Communication State - Sub Message	Slot Offset = 0

Table 54

Self-Test Transmitted Messages						
Time	Slot	Chan	MMSI	Msg	Nav Status	Sentence
10:22:06	-	A	970000016	14	-	!AIVDM,1,1,,A,>>M46T1<59B1@E=@,0*37
10:22:08	-	B	970000016	1	15	!AIVDM,1,1,,B,1>M46T?P00P5j7PM6j6>4?vB0000,0*10
10:22:10	-	A	970000016	1	15	!AIVDM,1,1,,A,1>M46T?P00P5j7PM6j6>4?vF0000,0*17
10:22:12	-	B	970000016	1	15	!AIVDM,1,1,,B,1>M46T?P00P5j7PM6j6>4?vJ0000,0*18
10:22:14	-	A	970000016	1	15	!AIVDM,1,1,,A,1>M46T?P00P5j7PM6j6>4?vN0000,0*1F
10:22:16	-	B	970000016	1	15	!AIVDM,1,1,,B,1>M46T?P00P5j7PM6j6>4?vR0000,0*00
10:22:18	-	A	970000016	1	15	!AIVDM,1,1,,A,1>M46T?P00P5j7PM6j6>4?vV0000,0*07
10:22:20	-	B	970000016	14	-	!AIVDM,1,1,,B,>>M46T1<59B1@E=@,0*34

Table 55



2.7.6 Test Location and Test Equipment Used

This test was carried out in the Environmental Climatic Test Laboratory.

Instrument	Manufacturer	Type No	TE No.	Calibration Period	Calibration Expiry Date
Climatic Chamber	Climatec	WALK-IN	2847	12	15-Dec-2024
Type T PFA Insulated Thermocouple	TC Limited	Type-T	4739	12	15-Aug-2024
Thermocouple Datalogger	Pico Technology Ltd	TC-08	6655	12	10-Aug-2024
AIS Class A	Em Trak	A100	6799	-	TU
GNSS Simulator	Spirent	GSS7000	6312	12	12-Feb-2026

Table 56

TU - Traceability Unscheduled



2.8 Low Temperature Test (Storage & Functional)

2.8.1 Specification Reference

IEC 60945, Clause 8.4

2.8.2 Equipment Under Test and Modification State

Model: Pathfinder AIS, S/N: TA000016 - Modification State 0

2.8.3 Date of Test

19-June-2024 to 21-June-2024

2.8.4 Test Method

The following test method was performed:

Test 1 – Storage test

The EUT shall be placed in a chamber at normal room temperature and relative humidity.

The temperature shall then be lowered to and maintained at $-30\text{ °C} \pm 3\text{ °C}$, for a period of 10 h to 16 h.

At the end of the test period, the EUT shall be returned to normal environmental conditions and then subjected to a performance check.

Test 2 – Functional test

The functional EUT shall be placed in a chamber at normal room temperature and relative humidity. The temperature shall then be reduced to and maintained at $-20\text{ °C} \pm 3\text{ °C}$, for a period of 10 h to 16 h.

The EUT shall be subjected to a performance check test and check.

The temperature of the chamber shall be maintained at $-20\text{ °C} \pm 3\text{ °C}$ during the whole test period.

At the end of the test the EUT shall be returned to normal environmental conditions.

2.8.5 Test Results

The Low Temperature Test (Storage & Functional) requirements were satisfied.

Test Setup photo shown below:



Figure 66 – EUT in chamber

Plots of the test parameters are shown below:

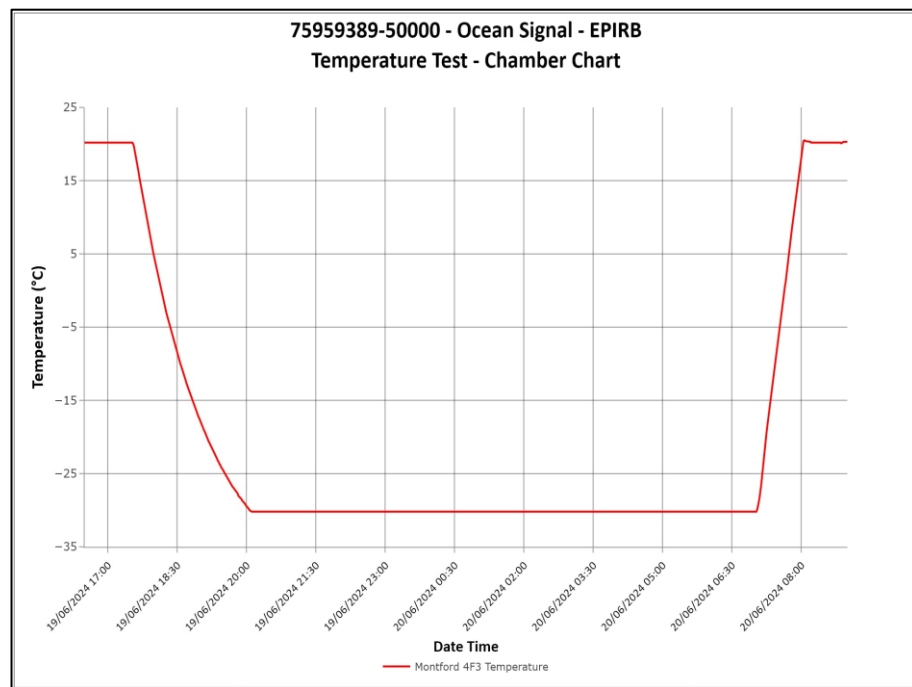


Figure 67 – Chamber Plot – Low Temperature Storage Test

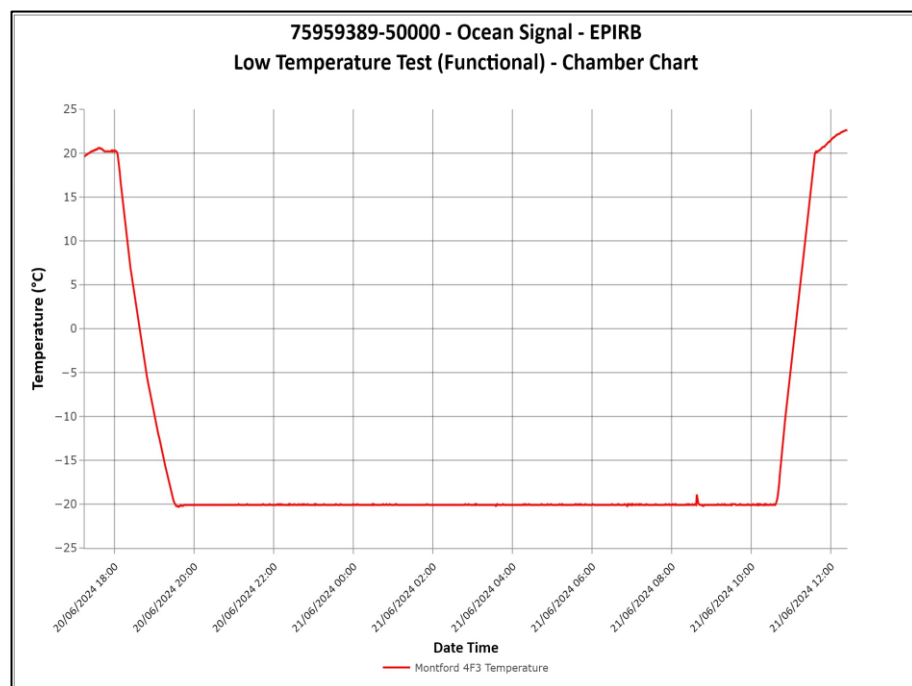


Figure 68 – Chamber Plot – Low Temperature Functional Test



Low Temperature Storage Performance Check

Message 14 Decode Self-test	
!AIVDM,1,1,,A,>>M46T1<59B1@E=@,0*37	
Parameter	Decoded Value
Message ID	14
Repeat Indicator	0
MMSI	970000016
Spare	0
Safety related text	SART TEST

Table 57

Message 1 Decode Self-Test	
!AIVDM,1,1,,B,1>M46T?P0005j7NM6j7f4?w>0000,0*4A	
Parameter	Decoded Value
Message ID	1 - Position report
Repeat Indicator	0
MMSI	970000016
Navigational Status	15 - not defined (also used by AIS-SART under test)
Rate Of Turn	no turn information available (default)
Speed Over Ground	0
Position Accuracy	0 - low (>10 m)
Longitude	1 15.7999 E
Latitude	50 51.9838 N
Course Over Ground	not available
True Heading	511 - not available
Time Stamp	39
Special Manoeuvre Indicator	0 - not available
Spare	0
RAIM Flag	0 - RAIM not in use
Communication State - Sync State	0
Communication State - Slot Timeout	0
Communication State - Sub Message	Slot Offset = 0

Table 58

Self-Test Transmitted Messages						
Time	Slot	Chan	MMSI	Msg	Nav Status	Sentence
07:50:51	-	A	970000016	14	-	!AIVDM,1,1,,A,>>M46T1<59B1@E=@,0*37
07:50:53	-	B	970000016	1	15	!AIVDM,1,1,,B,1>M46T?P00P5j7LM6j7N4?w>0000,0*00
07:50:55	-	A	970000016	1	15	!AIVDM,1,1,,A,1>M46T?P00P5j7LM6j7N4?wB0000,0*7F
07:50:57	-	B	970000016	1	15	!AIVDM,1,1,,B,1>M46T?P00P5j7LM6j7N4?wF0000,0*78
07:50:59	-	A	970000016	1	15	!AIVDM,1,1,,A,1>M46T?P00P5j7LM6j7N4?wJ0000,0*77
07:51:01	-	B	970000016	1	15	!AIVDM,1,1,,B,1>M46T?P00P5j7LM6j7N4?wN0000,0*70
07:51:03	-	A	970000016	1	15	!AIVDM,1,1,,A,1>M46T?P00P5j7LM6j7N4?wR0000,0*6F
07:51:05	-	B	970000016	14	-	!AIVDM,1,1,,B,>>M46T1<59B1@E=@,0*34

Table 59



Low Temperature Functional Performance Test

GNSS position was provided with a GNSS simulator. Results align with position supplied by simulator: 50 51.9833 N 1 15.8E.

Performance Tests	
Requirement	Verdict
The AIS SART transmits valid position data.	Pass
User ID (MMSI) as configured in the AIS-SART.	Pass
The transmitted data complies with sensor inputs, position, COG, SOG, ROT	Pass
Message 14 safety related text test message is "SART TEST"	Pass
Navigational status is set to 15 on message 1 self-test.	Pass
Position accuracy = according to the RAIM result if provided, otherwise 0.	Pass
Time stamp = actual UTC second (0...59).	Pass
EUT sends 8 messages on self-test with message 14 at start and end.	Pass
Verify correct indication as per manufacturer's documentation.	Pass
The communication state time-out always = 0 with sub message = 0.	Pass

Table 60

Message 14 Decode Self-Test	
!AIVDM,1,1,,A,>>M46T1<59B1@E=@,0*37	
Parameter	Decoded Value
Message ID	14
Repeat Indicator	0
MMSI	970000016
Spare	0
Safety related text	SART TEST

Table 61



Message 1 Decode Self-Test	
!AIVDM,1,1,,B,1>M46T?P0005j7NM6j7f4?w>0000,0*4A	
Parameter	Decoded Value
Message ID	1 - Position report
Repeat Indicator	0
MMSI	970000016
Navigational Status	15 - not defined (also used by AIS-SART under test)
Rate Of Turn	no turn information available (default)
Speed Over Ground	0
Position Accuracy	0 - low (>10 m)
Longitude	1 15.7999 E
Latitude	50 51.9838 N
Course Over Ground	not available
True Heading	511 - not available
Time Stamp	39
Special Manoeuvre Indicator	0 - not available
Spare	0
RAIM Flag	0 - RAIM not in use
Communication State - Sync State	0
Communication State - Slot Timeout	0
Communication State - Sub Message	Slot Offset = 0

Table 62

Self-Test Transmitted Messages						
Time	Slot	Chan	MMSI	Msg	Nav Status	Sentence
10:33:50	-	A	970000016	14	-	!AIVDM,1,1,,A,>>M46T1<59B1@E=@,0*37
10:33:53	-	B	970000016	1	15	!AIVDM,1,1,,B,1>M46T?P0005j7NM6j7f4?w>0000,0*4A
10:33:55	-	A	970000016	1	15	!AIVDM,1,1,,A,1>M46T?P0005j7NM6j7f4?wB0000,0*35
10:33:57	-	B	970000016	1	15	!AIVDM,1,1,,B,1>M46T?P0005j7NM6j7f4?wF0000,0*32
10:33:59	-	A	970000016	1	15	!AIVDM,1,1,,A,1>M46T?P0005j7NM6j7f4?wJ0000,0*3D
10:34:01	-	B	970000016	1	15	!AIVDM,1,1,,B,1>M46T?P0005j7NM6j7f4?wN0000,0*3A
10:34:03	-	A	970000016	1	15	!AIVDM,1,1,,A,1>M46T?P0005j7NM6j7f4?wR0000,0*25
10:34:05	-	B	970000016	14	-	!AIVDM,1,1,,B,>>M46T1<59B1@E=@,0*34

Table 63



2.8.6 Test Location and Test Equipment Used

This test was carried out in the Environmental Climatic Test Laboratory.

Instrument	Manufacturer	Type No	TE No.	Calibration Period	Calibration Expiry Date
Climatic Chamber	Climatec	WALK-IN	2847	12	15-Dec-2024
Type T PFA Insulated Thermocouple	TC Limited	Type-T	4739	12	15-Aug-2024
Thermocouple Datalogger	Pico Technology Ltd	TC-08	6655	12	10-Aug-2024
GNSS Simulator	Spirent	GSS7000	6312	12	12-Feb-2026
AIS Class A	Em Trak	A100	6799	-	TU

Table 64

TU - Traceability Unscheduled



2.9 Protection Against Accidental Access to Dangerous Voltages (NUA)

2.9.1 Specification Reference

IEC 60945, Clause 12.1

2.9.2 Equipment Under Test and Modification State

Model: Pathfinder AIS, S/N: TA000016 - Modification State 0

2.9.3 Date of Test

07-July-2025

2.9.4 Test Method

The following test method was performed:

The EUT shall be subjected to the test corresponding to IEC 60529, table I, first characteristic numeral 2: protected against access to hazardous parts with a finger.

The test shall be carried out by inserting the access probe through any openings of the enclosure of the EUT with the force specified in table VI of IEC 60529.

For the test, the jointed test finger may penetrate to its 80 mm length. Starting from the straight position, both joints of the finger shall be successively bent through an angle of up to 90° with respect to the access of the adjoining section of the finger and shall be placed in every possible position.

For low-voltage equipment (rated voltages not exceeding 1000 V a.c. and 1500 V d.c.) the test finger shall be connected to a low-voltage supply (of not less than 40 V and not more than 50 V) in series with a suitable lamp connected between the access probe and the hazardous parts inside the enclosure.

For high voltage equipment (rated voltages exceeding 1000 V a.c. or 1500 V d.c.), with the access probe placed in the most unfavourable positions, the EUT shall be submitted to the dielectric test as specified in the relevant equipment standard. Verification may be made either by dielectric test or by inspection of the specified clearance dimensions in air which would ensure that the test would be satisfactory under the most unfavourable electric field configuration (see IEC 60071-2).

When an enclosure includes sections at different voltage levels, the appropriate acceptance conditions for adequate clearance shall be applied for each section.

Finally, it shall be verified that any further access to the interior of the EUT is only possible by means of a tool, such as a spanner or screwdriver, and warning labels, if appropriate, are displayed within the EUT and on protective covers.



2.9.5 Test Results

The EUT does not have any openings and therefore the probe cannot access internal parts or circuits. The recesses at the bottom of the EUT does not permit access to internal parts.

2.9.6 Test Location and Test Equipment Used

This test was carried out in the Safety Laboratory.

Instrument	Manufacturer	Type No	TE No.	Calibration Period	Calibration Expiry Date
Multimeter	Fluke	87	862	12	14-May-2026
50N Force Gauge	Mecmesin	BFG50N	3931	12	20-Nov-2025
Test Finger	Retrac Productions Ltd	Test Probe B	4039	12	12-Sep-2025
DC power supply	TTI	CPX400A	4641	-	TU
Hygrometer	Rotronic	HP21	4741	12	29-May-2026

Table 65

TU - Traceability Unscheduled



3 Incident Reports

No incidents reports were raised.



4 Measurement Uncertainty

Measurement Uncertainty Decision Rule

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115:2021, Clause 4.4.3 (Procedure 2). The measurement results are directly compared with the test limit to determine conformance with the requirements of the standard.

Risk: The uncertainty of measurement about the measured result is negligible with regard to the final pass/fail decision. The measurement result can be directly compared with the test limit to determine conformance with the requirement (compare IEC Guide 115). The level of risk to falsely accept and falsely reject items is further described in ILAC-G8.