

FCC and ISED Test Report

SRT Marine Technology Limited
DSC/VHF Radio, Model: X-100

In accordance with IEC 62287-2
(DSC)



Prepared for: SRT Marine Technology Limited
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FCC ID: 2AC7Z-ESP32WROVERE IC: 21098-ESPWROVERE

COMMERCIAL-IN-CONFIDENCE

Document 75955807-10 Issue 01

SIGNATURE

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
S Bennett	Head Of New Service Development	Authorised Signatory	10 January 2025

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

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with IEC 62287-2. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Neil Rousell	10 January 2025	

FCC Accreditation

492497/UK2010 Octagon House, Fareham Test Laboratory

ISED Accreditation

12669A Octagon House, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with IEC 62287-2: Edition 2 (2017) for the tests detailed in section 1.3.



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Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation. Results of tests not covered by our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited). Results of tests covered by our Flexible UKAS Accreditation Schedule are marked FS (Flexible Scope).

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Contents

1	Report Summary	2
1.1	Report Modification Record.....	2
1.2	Introduction.....	2
1.3	Brief Summary of Results	3
1.4	Application Form	4
1.5	Product Information	5
1.6	Deviations from the Standard.....	5
1.7	EUT Modification Record	5
1.8	Test Information	5
1.9	Test Location.....	5
2	Test Details	7
2.1	DSC Maximum Sensitivity.....	7
2.2	DSC Error Behaviour at High Input Levels	9
2.3	DSC Co-channel Rejection	11
2.4	DSC Adjacent Channel Selectivity.....	13
2.5	DSC Spurious Response Rejection	15
2.6	DSC Intermodulation Response Rejection	18
2.7	DSC Blocking or Desensitisation	20
3	Photographs	22
3.1	Test Setup Photographs	22
4	Measurement Uncertainty	23



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	10-Jan-2025

Table 1

1.2 Introduction

Applicant	SRT Marine Technology Limited
Manufacturer	SRT Marine Technology Limited
Model Number(s)	X-100
Serial Number(s)	4310002011630003 and 4310002011730002
Hardware Version(s)	1.0
Software Version(s)	220200.01.00.00/20400.01.00.00
Number of Samples Tested	2
Test Specification/Issue/Date	IEC 62287-2: Edition 2 (2017)
Order Number	POR102834
Date	09-June-2022
Date of Receipt of EUT	14-April-2023
Start of Test	15-January-2024
Finish of Test	24-January-2024
Name of Engineer(s)	Neil Rousell



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with IEC 62287-2 is shown below.

Section	Specification Clause	Test Description	Result	Comments/Base Standard
Configuration and Mode: DSC Radio - Operational				
2.1	A.5.2	DSC Maximum Sensitivity	Pass	
2.2	A.5.3	DSC Error Behaviour at High Input Levels	Pass	
2.3	A.5.4	DSC Co-channel Rejection	Pass	
2.4	A.5.5	DSC Adjacent Channel Selectivity	Pass	
2.5	A.5.6	DSC Spurious Response Rejection	Pass	
2.6	A.5.7	DSC Intermodulation Response Rejection	Pass	
2.7	A.5.8	DSC Blocking or Desensitisation	Pass	

Table 2



1.4 Application Form

MAIN EUT			
MANUFACTURING DESCRIPTION	Integrated DSC/VHF Radio & AIS Class B Transceiver		
MANUFACTURER	Em-trak Marine Electronics Limited		
MODEL	X-100		
PART NUMBER	431-0002		
HARDWARE VERSION	1.0		
SOFTWARE VERSION	220200.01.00.00 and 220400.01.00.00		
PSU VOLTAGE/FREQUENCY/CURRENT	12 to 24V dc, 10A		
HIGHEST INTERNALLY GENERATED FREQUENCY	213.68 MHz		
FCC ID (if applicable)	TBD		
INDUSTRY CANADA ID (if applicable)	TBD		
TECHNICAL DESCRIPTION (a brief technical description of the intended use and operation)	VHF Radio with Class D DSC and SOTDMA AIS Class B		
COUNTRY OF ORIGIN	United Kingdom		
RF CHARACTERISTICS (if applicable)			
TRANSMITTER FREQUENCY OPERATING RANGE (MHz)	155.5 to 162.425 MHz		
RECEIVER FREQUENCY OPERATING RANGE (MHz)	155.5 to 163.275 MHz		
INTERMEDIATE FREQUENCIES	19.655 , 29.255 , 51.655 , 0.455 MHz TX 36.5 MHz		
EMISSION DESIGNATOR(S): https://fccid.io/Emissions-Designator/	16K0F3E, 16K0G2B, 16K0G1D		
MODULATION TYPES: (i.e. GMSK, QPSK)	Narrow FM, AFSK, TDMA-GMSK		
OUTPUT POWER (W or dBm)	42.5 dBm		
SEPARATE BATTERY/POWER SUPPLY (if applicable)			
MANUFACTURING DESCRIPTION	N/A		
MANUFACTURER			
TYPE			
PART NUMBER			
PSU VOLTAGE/FREQUENCY/CURRENT			
COUNTRY OF ORIGIN			
MODULES (if applicable)			
MANUFACTURING DESCRIPTION	GNSS	WiFi/Bluetooth 2.4GHz	
MANUFACTURER	UBLOX	Espressif Systems	
TYPE	CAM M8	ESP32-WROV-IE	
POWER	N/A RX	0.459 W	
FCC ID		2AC7Z-ESP32WROVERE	
INDUSTRY CANADA ID		21098-ESPWROVERE	
EMISSION DESIGNATOR	N/A RX	1M19F1D, 36M3D1D	
DHSS/FHSS/COMBINED OR OTHER		DSSS	
COUNTRY OF ORIGIN	Switzerland	PRC	
ANCILLARIES (if applicable)			
MANUFACTURING DESCRIPTION			
MANUFACTURER			
TYPE			
PART NUMBER			
SERIAL NUMBER			
COUNTRY OF ORIGIN			

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

Name: Shannon Parsons
Position held: Compliance Technician
Date: 02 October 2023



1.5 Product Information

1.5.1 Technical Description

VHF Radio with Class D DSC and AIS Class B SOTDMA

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: Class D, Serial Number: 4310002011730002			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: Class D, Serial Number: 4310002011630003			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 3

1.8 Test Information

All tests were performed using a PC Sound Card and a Signal Generator. In conjunction with a software app provided by Software Radio Technology, the known sent signal from the PC Sound Card was compared with the message received at the EUT. Blocks of data were received and compared to originally sent data and a BLER provided. Where any errors were received, the BER would be calculated.

For all test contained within this document, the main Receiver was placed in channel scan mode during DSC receiver verification.

1.9 Test Location

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

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: DSC Radio - Operational		
DSC Maximum Sensitivity	Neil Rousell	UKAS
DSC Error Behaviour at High Input Levels	Neil Rousell	UKAS
DSC Co-channel Rejection	Neil Rousell	UKAS
DSC Adjacent Channel Selectivity	Neil Rousell	UKAS



Test Name	Name of Engineer(s)	Accreditation
DSC Spurious Response Rejection	Neil Rousell	UKAS
DSC Intermodulation Response Rejection	Neil Rousell	UKAS
DSC Blocking or Desensitisation	Neil Rousell	UKAS

Table 4

Office Address:

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



2 Test Details

2.1 DSC Maximum Sensitivity

2.1.1 Specification Reference

IEC 62287-2, Clause A.5.2

2.1.2 Equipment Under Test and Modification State

Class D, S/N: 4310002011630003 - Modification State 0

2.1.3 Date of Test

22-January-2024 to 24-January-2024

2.1.4 Test Method

This test was performed in accordance with IEC 62287-2, clause A.5.2.2.

2.1.5 Environmental Conditions

Ambient Temperature 21.1 - 21.2 °C

Relative Humidity 39.8 - 45.0 %

2.1.6 Test Results

DSC Radio - Operational

Temperature	Voltage	Signal Level (dBm)	Bit Error Rate (%)		
			$f_c - 1.5 \text{ kHz}$	f_c	$f_c + 1.5 \text{ kHz}$
+21.1 °C	12V	-107	0.0	0.0	0.0
-15 °C	9.6V	-101	-	0.0	-
+55 °C	31.2V	-101	-	0.0	-

Table 5 - DSC Sensitivity Results

Where $f_c = 156.525 \text{ MHz}$

IEC 62287-2, Limit Clause A.5.2.3

The BER shall not exceed 1% in all cases.

2.1.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 2.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Climatic Chamber	Votsch	VT4002	161	-	O/P Mon
Power Divider	Weinschel	1506A	603	12	14-Dec-2024
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	06-Mar-2024



Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Meter & T/C	R.S Components	Meter 615-8206 & Type K T/C	3612	12	14-Sep-2024
True RMS Multimeter	Fluke	179	4007	12	17-Nov-2024
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	06-Mar-2024
DSC Pre-empahsis Unit	TUV SUD	n/a	4369	12	15-Jan-2025
GPSDR Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
PXA Signal Analyser	Keysight Technologies	N9030A	4653	12	16-Mar-2024
Vector Signal Generator	Keysight Technologies	ESG E4438C	4731	12	14-Feb-2024
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6544	12	18-Jun-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6547	12	18-Jun-2024

Table 6

O/P Mon – Output Monitored using calibrated equipment



2.2 DSC Error Behaviour at High Input Levels

2.2.1 Specification Reference

IEC 62287-2, Clause A.5.3

2.2.2 Equipment Under Test and Modification State

Class D, S/N: 4310002011630003 - Modification State 0

2.2.3 Date of Test

22-January-2024

2.2.4 Test Method

This test was performed in accordance with IEC 62287-2, clause A.5.3.2.

2.2.5 Environmental Conditions

Ambient Temperature	18.3 °C
Relative Humidity	46.2 %



2.2.6 Test Results

DSC Radio - Operational

Signal Level (dBm)	Bit Error Rate (%)
-7	0.0

Table 7 - DSC Error Behaviour at High Input Level Results

IEC 62287-2, Limit Clause A.5.3

The BER shall not exceed 1%.

2.2.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 2.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Power Divider	Weinschel	1506A	603	12	14-Dec-2024
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	06-Mar-2024
True RMS Multimeter	Fluke	179	4007	12	17-Nov-2024
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	06-Mar-2024
DSC Pre-emphasis Unit	TUV SUD	n/a	4369	12	15-Jan-2025
GPSDR Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
PXA Signal Analyser	Keysight Technologies	N9030A	4653	12	16-Mar-2024
Vector Signal Generator	Keysight Technologies	ESG E4438C	4731	12	14-Feb-2024
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5605	12	07-Nov-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6544	12	18-Jun-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6547	12	18-Jun-2024

Table 8

O/P Mon – Output Monitored using calibrated equipment



2.3 DSC Co-channel Rejection

2.3.1 Specification Reference

IEC 62287-2, Clause A.5.4

2.3.2 Equipment Under Test and Modification State

Class D, S/N: 4310002011630003 - Modification State 0

2.3.3 Date of Test

22-January-2024

2.3.4 Test Method

This test was performed in accordance with IEC 62287-2, clause A.5.4.2.

2.3.5 Environmental Conditions

Ambient Temperature 18.3 °C

Relative Humidity 46.2 %

2.3.6 Test Results

DSC Radio - Operational

Unwanted Signal Frequency Offset (kHz)	BER (%)
-3	0.00
0	0.00
+3	0.00

Table 9 - DSC Co-channel Rejection Results

IEC 62287-2, Limit Clause A.5.4.3

The BER shall not exceed 1%.

2.3.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 2.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Power Divider	Weinschel	1506A	603	12	14-Dec-2024
Signal Generator, 9kHz - 3GHz	Rohde & Schwarz	SMA 100A	3504	12	24-Oct-2024
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	06-Mar-2024
True RMS Multimeter	Fluke	179	4007	12	17-Nov-2024
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	06-Mar-2024
DSC Pre-emphasis Unit	TUV SUD	n/a	4369	12	15-Jan-2025



Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
GPSDR Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
PXA Signal Analyser	Keysight Technologies	N9030A	4653	12	16-Mar-2024
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	16-Jan-2024
Vector Signal Generator	Keysight Technologies	ESG E4438C	4731	12	14-Feb-2024
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5605	12	07-Nov-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6544	12	18-Jun-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6547	12	18-Jun-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6548	12	18-Jun-2024

Table 10

O/P Mon – Output Monitored using calibrated equipment



2.4 DSC Adjacent Channel Selectivity

2.4.1 Specification Reference

IEC 62287-2, Clause A.5.5

2.4.2 Equipment Under Test and Modification State

Class D, S/N: 4310002011630003 - Modification State 0

2.4.3 Date of Test

22-January-2024

2.4.4 Test Method

This test was performed in accordance with IEC 62287-2, clause A.5.5.2.

2.4.5 Environmental Conditions

Ambient Temperature 18.3 °C

Relative Humidity 46.2 %

2.4.6 Test Results

DSC Radio - Operational

Unwanted Signal Frequency Offset (kHz)	BER (%)
-25	0.0
+25	0.0

Table 11 - DSC Adjacent Channel Selectivity Results

IEC 62287-2, Limit Clause A.5.5.3

The BER shall not exceed 1%.

2.4.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 2.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Power Divider	Weinschel	1506A	603	12	14-Dec-2024
Signal Generator, 9kHz - 3GHz	Rohde & Schwarz	SMA 100A	3504	12	24-Oct-2024
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	06-Mar-2024
True RMS Multimeter	Fluke	179	4007	12	17-Nov-2024
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	06-Mar-2024
DSC Pre-emphasis Unit	TUV SUD	n/a	4369	12	15-Jan-2025



Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
GPSDR Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
PXA Signal Analyser	Keysight Technologies	N9030A	4653	12	16-Mar-2024
Vector Signal Generator	Keysight Technologies	ESG E4438C	4731	12	14-Feb-2024
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5605	12	07-Nov-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6544	12	18-Jun-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6547	12	18-Jun-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6548	12	18-Jun-2024

Table 12

O/P Mon – Output Monitored using calibrated equipment



2.5 DSC Spurious Response Rejection

2.5.1 Specification Reference

IEC 62287-2, Clause A.5.6

2.5.2 Equipment Under Test and Modification State

Class D, S/N: 4310002011630003 - Modification State 0

2.5.3 Date of Test

22-January-2024 to 23-January-2024

2.5.4 Test Method

This test was performed in accordance with IEC 62287-2, clause A.5.6.2.

The Limited Frequency Range sweep was performed as an audio SINAD measurement. The wanted signal had a centre frequency of 156.525 MHz with a deviation of 2.4 kHz and a 1 kHz audio frequency. The unwanted signal was an unmodulated signal swept in 1 kHz steps across the frequency range. Any responses found during the Limited Frequency Range sweep were re-measured using DSC Test Signal 1.

2.5.5 Environmental Conditions

Ambient Temperature 18.3 - 47.0 °C

Relative Humidity 20.4 - 46.2 %

2.5.6 Test Results

DSC Radio - Operational

Test Parameter	Value
List of Intermediate Frequencies	IF1= 0.45 MHz
Switching Range of the Receiver	0 MHz
Frequency of the Local Oscillator at 156.525 MHz	156.075 MHz
Calculated Limited Frequency Range	155.625 MHz to 156.525 MHz

Table 13 - Test Parameters for Spurious Response Rejection

Frequency (MHz)	PER (%)

Table 14 - DSC Spurious Responses - 156.525 MHz

*No responses were identified during the Limited Frequency Range Sweep.

K	FLO (MHz)	IF1 (MHz)	SFI (MHz)	BER (%)
2	156.075	- 0.45	311.7	0.0
2	156.075	+ 0.45	312.6	0.0



3	156.075	+ 0.45	468.675	0.0
3	156.075	- 0.45	467.775	0.0
4	156.075	- 0.45	623.85	0.0
4	156.075	+ 0.45	624.75	0.0

Table 15 - DSC Identified Frequencies Spurious Responses

IEC 62287-2 Limit Clause A.5.6.3

The BER shall not exceed 1%.



2.5.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 2.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Audio Analyser	Hewlett Packard	8903B	576	12	24-Jan-2024
Power Divider	Weinschel	1506A	603	12	14-Dec-2024
Signal Generator, 9kHz - 3GHz	Rohde & Schwarz	SMA 100A	3504	12	24-Oct-2024
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	06-Mar-2024
True RMS Multimeter	Fluke	179	4007	12	17-Nov-2024
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	06-Mar-2024
DSC Pre-empahsis Unit	TUV SUD	n/a	4369	12	15-Jan-2025
GPSDR Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
PXA Signal Analyser	Keysight Technologies	N9030A	4653	12	16-Mar-2024
Vector Signal Generator	Keysight Technologies	ESG E4438C	4731	12	14-Feb-2024
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6544	12	18-Jun-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6547	12	18-Jun-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6548	12	18-Jun-2024

Table 16

O/P Mon – Output Monitored using calibrated equipment



2.6 DSC Intermodulation Response Rejection

2.6.1 Specification Reference

IEC 62287-2, Clause A.5.7

2.6.2 Equipment Under Test and Modification State

Class D, S/N: 4310002011630003 - Modification State 0

2.6.3 Date of Test

15-January-2024

2.6.4 Test Method

This test was performed in accordance with IEC 62287-2, clause A.5.7.2.

2.6.5 Environmental Conditions

Ambient Temperature 18.6 °C
Relative Humidity 31.5 %

2.6.6 Test Results

DSC Radio - Operational

Generator A (Wanted Signal)	Generator B (Unmodulated ±50 kHz)	Generator C (Modulated ±100 kHz)	BER (%)
156.525	156.475	156.425	0.0
156.525	156.575	156.625	0.0

Table 17 - DSC Intermodulation Results

IEC 62287-2 Limit clause A.5.7.3

The BER shall not exceed 1%.

2.6.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 2.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Power Divider	Weinschel	1506A	603	12	14-Dec-2024
Power Splitter	Weinschel	1506A	606	12	25-Jul-2024
Signal Generator, 9kHz to 3GHz	Rohde & Schwarz	SMA 100A	3494	12	22-Sep-2024
Signal Generator, 9kHz - 3GHz	Rohde & Schwarz	SMA 100A	3504	12	24-Oct-2024



Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	06-Mar-2024
True RMS Multimeter	Fluke	179	4007	12	17-Nov-2024
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	06-Mar-2024
DSC Pre-empahsis Unit	TUV SUD	n/a	4369	12	15-Jan-2025
GPSDR Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
PXA Signal Analyser	Keysight Technologies	N9030A	4653	12	16-Mar-2024
Vector Signal Generator	Keysight Technologies	ESG E4438C	4731	12	14-Feb-2024
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5605	12	07-Nov-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6544	12	18-Jun-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6547	12	18-Jun-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6548	12	18-Jun-2024

Table 18

O/P Mon – Output Monitored using calibrated equipment



2.7 DSC Blocking or Desensitisation

2.7.1 Specification Reference

IEC 62287-2, Clause A.5.8

2.7.2 Equipment Under Test and Modification State

Class D, S/N: 4310002011630003 - Modification State 0

2.7.3 Date of Test

15-January-2024

2.7.4 Test Method

This test was performed in accordance with IEC 62287-2, clause A.5.8.2.

2.7.5 Environmental Conditions

Ambient Temperature 18.6 °C
Relative Humidity 31.5 %

2.7.6 Test Results

DSC Radio - Operational

Blocking Frequency Offset (MHz)	BER (%)
-10	0.0
-5	0.0
-2	0.0
-1	0.0
+1	0.0
+2	0.0
+5	0.0
+10	0.0

Table 19 - DSC Blocking or Desensitisation Results

IEC 62287-2, Limit Clause A.5.8.3

The BER shall not exceed 1%.



2.7.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 2.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Audio Analyser	Hewlett Packard	8903B	576	12	24-Jan-2024
Power Divider	Weinschel	1506A	603	12	14-Dec-2024
Signal Generator, 9kHz - 3GHz	Rohde & Schwarz	SMA 100A	3504	12	24-Oct-2024
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	06-Mar-2024
True RMS Multimeter	Fluke	179	4007	12	17-Nov-2024
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	06-Mar-2024
DSC Pre-empahsis Unit	TUV SUD	n/a	4369	12	15-Jan-2025
GPSDR Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
PXA Signal Analyser	Keysight Technologies	N9030A	4653	12	16-Mar-2024
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	16-Jan-2024
Vector Signal Generator	Keysight Technologies	ESG E4438C	4731	12	14-Feb-2024
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5605	12	07-Nov-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6544	12	18-Jun-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6547	12	18-Jun-2024
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6548	12	18-Jun-2024

Table 20

O/P Mon – Output Monitored using calibrated equipment

3 Photographs

3.1 General EUT Photographs



Figure 1 – EUT Front



Figure 2 – EUT Back

4 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Name	Measurement Uncertainty
DSC Maximum Sensitivity	± 1.8 dB
DSC Error Behaviour at High Input Levels	± 1.8 dB
DSC Co-channel Rejection	± 2.6 dB
DSC Adjacent Channel Selectivity	± 2.6 dB
DSC Spurious Response Rejection	± 2.6 dB
DSC Intermodulation Response Rejection	± 2.6 dB
DSC Blocking or Desensitisation	± 1.8 dB

Table 21

Measurement Uncertainty Decision Rule – Accuracy Method

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.