

Radio Test Report

Manufacturer: Ocean Signal Limited
GMDSS Radio, Model: SR303



In accordance with IEC 61097-12
Technology: (VHF)

Prepared for: Ocean Signal Limited
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COMMERCIAL-IN-CONFIDENCE

Document 75961609-03 Issue 01

SIGNATURE

A handwritten signature in blue ink, appearing to read 'Matthew Russell', is written over a white rectangular background.

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Matthew Russell	Chief Engineer	Authorised Signatory	05 June 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 and found to be compliant with IEC 61097-12: Issue 1: 1996 + Amd1: 2017 for the tests detailed in section 1.3.



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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	05-June-2025

Table 1

1.2 Introduction

Applicant	Ocean Signal Limited
Manufacturer	Ocean Signal Limited
Model Number(s)	SR303
Serial Number(s)	S24070003
Hardware Version(s)	11
Software Version(s)	13.00.00
Number of Samples Tested	1
Test Specification/Issue/Date	IEC 61097-12: Issue 1: 1996 + Amd1: 2017
Order Number	P9755 - QAF
Date	27-May-2024
Date of Receipt of EUT	05-August-2024
Start of Test	11-February-2025
Finish of Test	23-May-2025
Name of Engineer(s)	Neil Rousell, George Williams
Related Document(s)	-



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with IEC 61097-12 is shown below.

Section	Specification Clause	Test Description	Result	Comments/Base Standard
Configuration and Mode: DC Powered - Tx				
2.1	3	Performance requirements	Pass	
2.2	5.4.1	Frequency Error	Pass	
2.3	5.4.2	Effective Radiated Power	Pass	
2.4	5.4.3	Carrier Power Referenced to ERP	Pass	
2.5	5.4.4	Frequency Deviation	Pass	
2.6	5.4.5	Limitation Characteristics of the Modulator	Pass	
2.7	5.4.6	Sensitivity of the Modulator, including Microphone	Pass	
2.8	5.4.7	Audio Frequency Response	Pass	
2.9	5.4.8	Audio Frequency Harmonic Distortion of the Emission	Pass	
2.10	5.4.9	Adjacent Channel Power	Pass	
2.11	5.4.10	Conducted Spurious Emissions Conveyed to the Antenna (Transmitter)	Pass	
2.12	5.4.11	Residual Modulation of the Transmitter	Pass	
2.13	5.4.12	Transient Frequency Behaviour of the Transmitter	Pass	
Configuration and Mode: DC Powered - Rx				
2.14	5.5.1	Harmonic Distortion and Rated Audio Frequency Output Power	Pass	
2.15	5.5.2	Audio Frequency Response	Pass	
2.16	5.5.3	Maximum Usable Sensitivity	Pass	
2.17	5.5.4	Co-channel Rejection	Pass	
2.18	5.5.5	Adjacent Channel Selectivity	Pass	
2.19	5.5.6	Spurious Response Rejection	Pass	
2.20	5.5.7	Intermodulation Response	Pass	



Section	Specification Clause	Test Description	Result	Comments/Base Standard
2.21	5.5.8	Blocking or Desensitization	Pass	
2.22	5.5.9	Conducted Spurious Emissions Conveyed to the Antenna (Receiver)	Pass	
2.23	5.5.10	Amplitude Response of the Receiver Limiter	Pass	
2.24	5.5.11	Receiver Noise and Hum	Pass	
2.25	5.5.12	Squelch Operation	Pass	
2.26	5.5.13	Squelch Hysteresis	Pass	

Table 2



1.4 Application Form

Equipment Description

Technical Description: (Please provide a brief description of the intended use of the equipment)	Marine GMDSS Handheld VHF
Manufacturer:	1. Ocean Signal Ltd. 2. ACR Electronics Inc.
Model:	1. V200 2. SR303
Part Number:	1. 722S-04675 and 722S-04676 2. 4586 and 4587
Hardware Version:	11
Software Version:	13.00.00

Transmitter Technical Characteristics – Frequency Characteristics

Transmitter frequency alignment range:		
Transmitter channel switching frequency range:	TX	RX
	GMDSS: 156.300MHz–157.425MHz	156.300MHz–157.425MHz
	INT: 156.300MHz–161.550MHz	156.300MHz–161.550MHz
	USA: 156.050MHz–161.925MHz	156.050MHz–161.950MHz
	CAN: 156.050MHz–161.850MHz	156.200MHz–162.000MHz
	WX:	161.650MHz–163.275MHz

Transmitter RF Power Characteristics

Maximum effective rated power (rated as stated by the manufacturer):	GMDSS VHF	2.5 W
Average effected radiated power (rated as stated by the manufacturer):	VHF	W
Is transmitter intended for:	Continuous duty: Yes ☒ No ☐ Intermittent duty: Yes ☐ No ☒	
If intermittent state DUTY CYCLE:	Transmitter ON:	seconds
	Transmitter OFF:	seconds
Is transmitter output power variable?	Continuous duty: Yes ☒ No ☐	
Maximum power:	GMDSS VHF	2.5 W
	Continuously variable	☐
	Stepped	☐
		dB per step
Maximum RF output power:		2.5 W
Minimum RF output power:		1 W



Transmitter Modulation Input Character Characteristics (FM)

Modulation input signal level for 60% of maximum deviation at:				
Microphone socket:	13	mV	1.5k	Impedance (Ohms)
Accessory socket:	N/A	mV	N/A	Impedance (Ohms)
Other (4):	N/A	mV	N/A	Impedance (Ohms)
Lowest audio modulation frequency transmitted by the equipment			300	Hz

Transmitter Modulation

Frequency ☒	Phase ☐	Other ☐
If Other, Please Detail:		
Channel spacing		25KHz
State the maximum number of channels over which the equipment can operate:		

Receiver Technical Characteristics – Frequency Characteristics

Receiver frequency alignment range:	156.300–156.875MHz
Receiver channel switching frequency:	
Method of Frequency Generation	Crystal ☐ Synthesizer ☒ Other ☐ Please Detail:
Intermediate Frequencies:	1 st ☐ 2 nd ☒ 3 rd ☐
Is local oscillator injection frequency higher or lower than the receiver nominal frequency?	Higher ☒ Lower ☐

Receiver Audio (AF) Characteristics – Maximum Rated Audio (AF) Frequency Output Power

Into Loudspeaker:	0.5	W
Into Line:	N/A	N/A W
Into Earpiece:	N/A	N/A W
Balanced:	Yes ☒ No ☐	
Unbalanced:	Yes ☐ No ☐	
Does connection carry DC voltage?	Yes ☐ No ☒ if Yes, please state voltage	
Normal Audio load impedance:	At Loudspeaker:	6 Ohms
	At Line:	N/A Ohms
	At Earpiece:	N/A Ohms
At audio accessory connection or facility socket (if fitted):	Output:	N/A W
	Impedance:	N/A W
Max input level at audio accessory socket:	Output:	N/A W
	Impedance:	N/A W



AC Power Source

AC supply frequency:		50/60Hz	
100-240V	5.0V	Max current: 0.3A	2.0A
Single phase ☒ Three phase ☐			

DC Power Source

Nominal voltage:	N/A V
Extreme upper voltage:	N/A V
Extreme lower voltage:	N/A V
Max current:	N/A A

Primary Battery Power Source

Voltage:	6.0 V
End-point voltage:	3.0 V (<i>Point at which the battery will terminate</i>)
Alkaline ☐ Leclanche ☐ Lithium ☒ Nickel Cadmium ☐ Lead Acid* ☐ <i>*(Vehicle regulated)</i>	
Other ☐ Please detail:	

Rechargeable Battery Power Source

Voltage:	3.7V
End-point voltage:	3.0 V (<i>Point at which the battery will terminate</i>)
Alkaline ☐ Leclanche ☐ Lithium ☒ Nickel Cadmium ☐ Lead Acid* ☐ <i>*(Vehicle regulated)</i>	
Other ☐ Please detail:	

Temperature (*over which equipment is to be type tested*)

Minimum Temperature:	-20°C
Maximum Temperature:	55°C
Other, please specify:	

Automatic Equipment Switch Off

If the equipment is designed to automatically switch off at a predetermined voltage level which is higher or lower in value than the battery minimum and minimum calculated values this shall be clearly stated.		
Applies ☐	Cut off voltage	V
Does not apply ☒		



Channel Identification

Each equipment, whether one or more submitted for tests shall carry clear identification (such as a serial number), together with the frequencies associated with the channel identification displayed on the equipment.			
Channel Position	Channel Number	Transmit Nominal Frequency (MHz)	Receive Nominal Frequency (MHz)

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

Name:	Steve Moore
Position held:	Product Manager
Date:	10 September 2024



1.5 Product Information

GMDSS VHF radio for emergency use at sea.

1.5.1 Technical Description

GMDSS VHF radio. See manufacturers documentation for detailed information.

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: SR303, Serial Number: S24070003			
0	As supplied by the customer	Not Applicable	Not Applicable
1	Hardware change/update for CSE fail	Manufacturer	28-February-2025
2	Software update to address 60945 requirements to v13.00.00	Manufacturer	14-April-2025
3	Software update to correct squelch fail	Manufacturer	30-April-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
Configuration and Mode: DC Powered - Tx		
Performance requirements	Neil Rousell	UKAS
Frequency Error	Neil Rousell	UKAS
Effective Radiated Power	George Williams and Neil Rousell	UKAS
Carrier Power Referenced to ERP	Neil Rousell	UKAS
Frequency Deviation	Neil Rousell	UKAS
Limitation Characteristics of the Modulator	Neil Rousell	UKAS
Sensitivity of the Modulator, including Microphone	Neil Rousell	UKAS
Audio Frequency Response	Neil Rousell	UKAS
Audio Frequency Harmonic Distortion of the Emission	Neil Rousell	UKAS
Adjacent Channel Power	Neil Rousell	UKAS
Conducted Spurious Emissions Conveyed to the	Neil Rousell	UKAS



Test Name	Name of Engineer(s)	Accreditation
Antenna (Transmitter)		
Residual Modulation of the Transmitter	Neil Rousell	UKAS
Transient Frequency Behaviour of the Transmitter	Neil Rousell	UKAS
Configuration and Mode: DC Powered - Rx		
Harmonic Distortion and Rated Audio Frequency Output Power	Neil Rousell	UKAS
Audio Frequency Response	Neil Rousell	UKAS
Maximum Usable Sensitivity	Neil Rousell	UKAS
Co-channel Rejection	Neil Rousell	UKAS
Adjacent Channel Selectivity	Neil Rousell	UKAS
Spurious Response Rejection	Neil Rousell	UKAS
Intermodulation Response	Neil Rousell	UKAS
Blocking or Desensitization	Neil Rousell	UKAS
Conducted Spurious Emissions Conveyed to the Antenna (Receiver)	Neil Rousell	UKAS
Amplitude Response of the Receiver Limiter	Neil Rousell	UKAS
Receiver Noise and Hum	Neil Rousell	UKAS
Squelch Operation	Neil Rousell	UKAS
Squelch Hysteresis	Neil Rousell	UKAS

Table 4

Office Address:

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



2 Test Details

2.1 Performance requirements

2.1.1 Specification Reference

IEC 61097-12, Clause 3

2.1.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 3

2.1.3 Date of Test

19-May-2025 to 23-May-2025

2.1.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 3.

Conformance Indicated using Method of Test (MoT) as Observation (Obs) or Measurement (Meas).

2.1.5 Environmental Conditions

Ambient Temperature 21.1-24.1 °C

Relative Humidity 36.2-46.8 %



2.1.6 Test Results

Requirement / Condition Under Test	MoT	C/I	Comment
3.2.1 (A.809(19) 1/2.1) The equipment shall be portable and capable of being used for on-scene communication between survival craft, between survival craft and ship and between survival craft and rescue unit. It may also be used for on-board communications when capable of operating on appropriate frequencies	Obs	Y	
3.2.2 (A.809(19) 1/2.3) The equipment shall: 1) be capable of being operated by unskilled personnel	Obs	Y	Note that the power on/off indicator symbol does not match the brief operating instructions symbol on the EUT.
2) be capable of being operated by personnel wearing gloves as specified for immersion suits in regulation 32 of chapter III of the SOLAS 1974 Convention	Obs	Y	
3) be capable of single-handed operation except for channel selection	Obs	Y	
9) be of small size and light weight	Obs	Y	See manufacturers datasheet
10) be capable of operating in the ambient noise level likely to be encountered on board ships or survival craft	Obs	Y	
11) have provisions for its attachment to the clothing of the user, including the immersion suit	Obs	Y	
12) be resistant to deterioration by prolonged exposure to sunlight	Meas	Y	See report 75961609-02
3.2.3 (A.809(19) 1/2.3.13) The equipment shall be either of a highly visible yellow/orange colour or marked with a surrounding yellow/orange marking strip	Obs	Y	
3.3.1 Composition (A.809(19) 1/2.2) The equipment shall comprise at least: 1) an integral transmitter/receiver including antenna and battery	Obs	Y	
2) an integral control unit including a press-to-transmit switch	Obs	Y	
3) an internal microphone and loudspeaker	Obs	Y	
3.3.2.1 (A.809(19) 1/4.1) An on/off switch shall be provided with positive visual indication that the radiotelephone is switched on	Obs	Y	
3.3.2.2 (A.809(19) 1/4.2) The receiver shall be provided with a manual volume control by which the audio output may be varied	Obs	Y	
3.3.2.3 (A.809(19) 1/4.3) A squelch (mute) control and channel selection switch shall be provided	Obs	Y	
3.3.2.4 (A.809(19) 1/4.4) Channel selection shall be easily performed, and the channels shall be clearly discernible	Obs	Y	
3.3.2.5 (A.809(19) 1/4.5) Channel indication shall be in accordance with appendix 18 of the Radio Regulations	Obs	Y	



Requirement / Condition Under Test	MoT	C/I	Comment
3.3.2.6 (A.809(19) 1/4.6) It shall be possible to determine that channel 16 has been selected in all ambient light conditions	Obs	Y	
3.3.3 Antenna (A.809(19) 1/9) The antenna shall be vertically polarized and, as far as practicable, be omnidirectional in the horizontal plane. The antenna shall be suitable for efficient radiation and reception of signals at the operating frequency	Obs	Y	Manufacturer declaration
3.3.4.1 (A.809(19) 1/6) The equipment shall not be damaged by the effect of open-circuiting or short-circuiting the antenna	Meas	Y	
3.3.4.2 (A.809(19) 1/2.3.8) The equipment shall have no sharp projections which could damage survival craft	Obs	Y	
3.3.5.1 (A.809(19) 1/3.1) The two-way radiotelephone shall be capable of operation on the frequency 156,800 MHz (VHF CH 16) and on at least one additional channel	Obs	Y	
3.3.5.2 (A.809(19) 1/3.2) All channels fitted shall be for single-frequency voice communication only	Obs	Y	Simplex voice only
3.3.5.3 (A.809(19) 1/3.3) The class of emission shall be G3E to comply with appendix 19 of the Radio Regulations	Obs	Y	
3.3.6 Marking and identification (A.809(19) 1/13) In addition to the items specified in resolution A.694(17) on general requirements, as detailed in IEC 945, the following shall be clearly indicated on the exterior of the equipment: 1) brief operating instructions	Obs	Y	
2) expiry date for the primary batteries	Obs	Y	
3.3.7 Warming-up period (A.809(19) 1/5) The equipment shall be operational within 5 s of switching on	Meas	Y	Average = <5s
3.3.8.1 (A.809(19) 1/12.1) The source of energy shall be integrated in the equipment and may be replaceable by the user. In addition, provision may be made to operate the equipment using an external source of electrical energy	Obs	Y	Battery operation only. Replaceable by user.
3.3.8.2 (A.809(19) 1/12.2) Equipment intended for the source of energy to be user replaceable shall be provided with a dedicated primary battery for use in the event of a distress situation. This battery shall be equipped with a non-replaceable seal to indicate that it has not been used.	Obs	Y	Only primary battery supplied by manufacturer.
3.3.8.3 (A.809(19) 1/12.3) Equipment intended for the source of energy to be non-user replaceable shall be provided with a primary battery. The portable two-way radiotelephone equipment shall be equipped with a non-replaceable seal to indicate that it has not been used.	Obs	-	Not applicable



Requirement / Condition Under Test	MoT	C/I	Comment
3.3.8.4 (A.809(19) 1/12.4) The primary battery shall have sufficient capacity to ensure 8 h operation at its highest rated power with a duty cycle of 1: 9. The duty cycle is defined as 6 s transmission, 6 s reception above squelch opening level and 48 s reception below squelch opening level.	Obs	Y	Manufacturer declaration
3.3.8.5 (A.809(19) 1/12.5) Primary batteries shall have a shelf life of at least 2 years and if intended to be user replaceable shall be of a colour or marking as defined in 3.2.3.	Obs	Y	Manufacturer declaration
3.3.8.6 (A.809(19) 1/12.6) Primary or secondary batteries not intended for the use in the event of a distress situation shall be of a colour or marking so that they cannot be confused with batteries intended for such use.	Obs	-	Not applicable
3.4 Environmental requirements 3.4.1 (A.809(19) 1/11) The equipment shall be so designed as to operate over the temperature range -20 °C to +55 °C. It shall not be damaged in stowage throughout the temperature range -30 °C to + 70 °C	Meas	Y	
3.4.2 (A.809(19) 1/2.3.4) The equipment shall withstand drops on to a hard surface from a height of 1 m	Meas	Y	
3.4.3 (A.809(19) 1/2.3.5) The equipment shall be watertight to a depth of 1 m for at least 5 min	Meas	Y	
3.4.4 (A.809(19) 1/2.3.6) The equipment shall maintain watertightness when subjected to a thermal shock of 45 °C under conditions of immersion	Meas	Y	
3.4.5 (A.809(19) 1/2.3.7) The equipment shall not be unduly affected by seawater or oil or both	Meas	Y	
3.5 Electromagnetic compatibility The equipment shall comply with the EMC requirements specified in resolution A.694(17), as detailed in IEC 945	Meas	Y	

Table 5

Conformance Indicated (C/I) as (Yes/ No)



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
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	18-Sept-2025
Open/short tester	TUV-SUD	-	5250	-	O/P Mon
Analyser	Keysight Technologies	N9030A	4654	12	24-Feb-2026
Attenuator	Aeroflex / Weinschel	47-30-34	3164	12	15-Apr-2026
Stopwatch	R.S Components	BDDT 10h	6801	12	14-Jun-2025
Calibration Kit	Rohde & Schwarz	ZV-Z54	4368	12	17-Mar-2026
Analyser	Rohde & Schwarz	ZVA 40	3548	12	17-Mar-2026
Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Meter	Fluke	179	4006	12	21-Mar-2026

Table 6

O/P Mon – Output Monitored using calibrated equipment



2.2 Frequency Error

2.2.1 Specification Reference

IEC 61097-12, Clause 5.4.1

2.2.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 0

2.2.3 Date of Test

11-February-2025 to 13-February-2025

2.2.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.4.1.2.

2.2.5 Environmental Conditions

Ambient Temperature 20.6 - 22.2 °C
Relative Humidity 30.7 - 33.8 %

2.2.6 Test Results

Temperature	Voltage	Frequency Error (Hz)
		156.800 MHz
+20.6 °C	6.0	-413
-20 °C	5.4	-116
+55 °C	7.8	-20

Table 7 - Frequency Error Results

IEC 61097-12, Limit Clause 5.4.1.3

The frequency error shall be within ± 1.5 kHz.



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
Counter	Hewlett Packard	53181A	159	12	05-Sep-2025
Climatic Chamber	Votsch	VT4002	161	-	O/P Mon
Thermocouple Thermometer	Fluke	51	3173	12	31-May-2025
Attenuator (30dB, 150W)	Narda	769-30	3369	12	02-Aug-2024
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	09-Mar-2025
Multimeter	Fluke	115	6343	12	28-Feb-2025

Table 8

O/P Mon – Output Monitored using calibrated equipment



2.3 Effective Radiated Power

2.3.1 Specification Reference

IEC 61097-12, Clause 5.4.2

2.3.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 3

2.3.3 Date of Test

29-April-2025

2.3.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.4.2.2. The results shown in the table below are the final substituted results.

The EUT was powered by a fully charged battery for the duration of the test.

2.3.5 Environmental Conditions

Ambient Temperature 22.8 °C
Relative Humidity 34.3 %

2.3.6 Test Results

Polarisation	Effective Radiated Power (W)
	156.8 MHz
Horizontal	0.812831
Vertical	0.042462

Table 9 - ERP Results at Maximum Rated Power

Note that ERP measurement was performed on CH16 (156.800 MHz) and not Ch17 (156.850 MHz) due to not being able to set the high-power mode on the test sample at time of test.

IEC 61097-12, Limit Clause 5.4.2.3

The ERP shall be between 0.25 W and 25 W with the power reduction switch at maximum.



2.3.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 11.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Antenna (Biconical)	Schaffner	VBA6106A	3106	12	13-Oct-2025
Hygrometer	Rotronic	I-1000	3220	12	02-Dec-2025
Vector Signal Generator	Rohde & Schwarz	SMBV100A	4886	36	30-Nov-2026
4dB Attenuator	Pasternack	PE7047-4	4935	12	31-Jul-2025
3m Semi-Anechoic Chamber	Rainford	RF Chamber 11	5136	36	14-Nov-2027
Mast	Maturo	TAM 4.0-P	5158	-	TU
Mast and Turntable Controller	Maturo	Maturo NCD	5159	-	TU
Turntable	Maturo	TT 15WF	5160	-	TU
Signal Analyzer	Keysight Technologies	PXA N9030B	5432	12	22-Jul-2025
2m Coaxial Cable Assy	Junkosha	MWX221-02000AMSAMS/A	6360	12	14-May-2025
2m Coaxial Cable Assy	Junkosha	MWX221-02000NMSNMS/A	6408	12	06-Jun-2025
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9168	6635	24	13-Jun-2025
Cable (N-Type to N-Type, 8 m)	Scott Cables	SCB800-A-NMNM-08.00M	6719	6	06-Jun-2025

Table 10

TU - Traceability Unscheduled



2.4 Carrier Power Referenced to ERP

2.4.1 Specification Reference

IEC 61097-12, Clause 5.4.3

2.4.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 0

2.4.3 Date of Test

11-February-2025 to 13-February-2025

2.4.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.4.3.2.

The antenna gain was calculated by taking the difference from the maximum ERP results and the conducted power level as measured at the artificial antenna provided. This value was then used to calculate the ERP under extreme test conditions.

2.4.5 Environmental Conditions

Ambient Temperature 20.6 - 22.1 °C

Relative Humidity 30.7 - 33.8 %

2.4.6 Test Results

Test Frequency (MHz)	ERP (dBm)	Conducted Power (dBm)	Antenna Gain (dBi)
156.850	29.1	34.6	-5.5

Table 11 - Antenna Gain

Temperature	Voltage	Power Setting	156.800 MHz	
			Conducted Power (dBm)	ERP (W)
-20 °C	5.4	Max	34.6	0.81
+55 °C	7.8	Max	34.5	0.79
-20 °C	5.4	Min	30.4	0.31
+55 °C	7.8	Min	30.1	0.29

Table 12 - ERP Results at Extreme Test Conditions

IEC 61097-12, Limit Clause 5.4.3.3

The ERP shall be between 0.25 W and 25 W with the power switch at maximum.

The ERP shall be between 0.25 W and 1 W with the power switch at minimum.



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
Climatic Chamber	Votsch	VT4002	161	-	O/P Mon
Thermocouple Thermometer	Fluke	51	3173	12	31-May-2025
Attenuator (30dB, 150W)	Narda	769-30	3369	12	02-Aug-2024
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	20-Feb-2025
P-Series Power Meter	Agilent Technologies	N1911A	3980	12	18-Nov-2025
50 MHz-18 GHz Wideband Power Sensor	Agilent Technologies	N1921A	3982	12	18-Nov-2025
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	26-Feb-2025
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
USB Power Sensor	Boonton	RTP5008	5831	12	21-Jan-2026
Multimeter	Fluke	115	6343	12	28-Feb-2025

Table 13

O/P Mon – Output Monitored using calibrated equipment



2.5 Frequency Deviation

2.5.1 Specification Reference

IEC 61097-12, Clause 5.4.4

2.5.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 0

2.5.3 Date of Test

12-February-2025

2.5.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.4.4.2.1 and 5.4.4.3.1.

2.5.5 Environmental Conditions

Ambient Temperature	20.9 °C
Relative Humidity	32.7 %

2.5.6 Test Results

Audio Frequency (Hz)	Frequency Deviation (kHz)	Limit (kHz)	Verdict
100	3.28	5	Pass
200	4.49	5	Pass
300	4.13	5	Pass
400	4.07	5	Pass
500	4.17	5	Pass
1000	4.17	5	Pass
1500	4.05	5	Pass
2000	4.13	5	Pass
2500	4.12	5	Pass
3000	3.66	5	Pass

Table 14 - Maximum Permissible Frequency Deviation

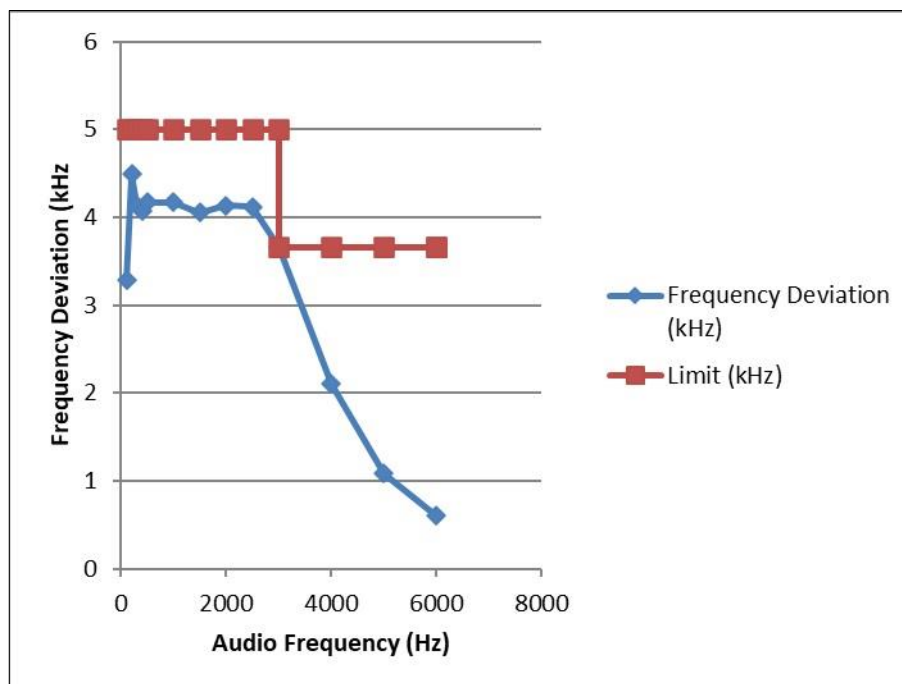


Figure 1 - Frequency Deviation (AF < 6 kHz)

Audio Frequency (Hz)	Frequency Deviation (kHz)	Limit (kHz)	Verdict
3000	3.66	-	Pass
4000	2.10	3.66	Pass
5000	1.08	3.66	Pass
6000	0.60	3.66	Pass
8000	0.25	1.87	Pass
1000	0.13	1.12	Pass
12000	0.08	0.73	Pass
15000	0.04	0.43	Pass
20000	0.03	0.22	Pass
25000	0.03	0.13	Pass

Table 15 - Reduction of Frequency Deviation at Modulation Frequencies above 3 kHz

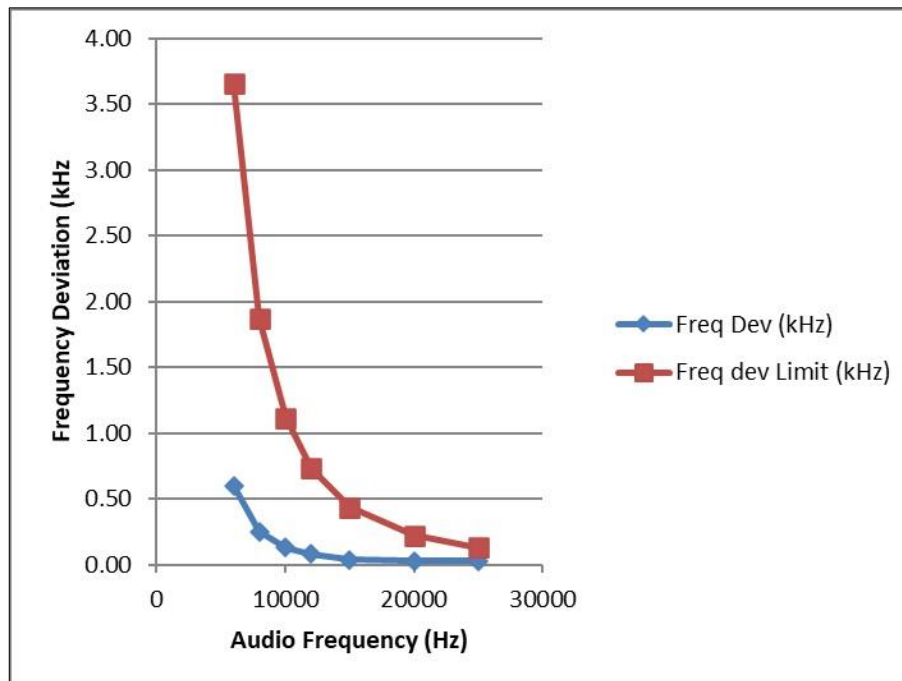


Figure 2 - Frequency Deviation (AF > 6 kHz)

IEC 61097-12, Limit Clause 5.4.4.2.2

The maximum frequency deviation shall be ± 5 kHz for audio frequencies less than 3 kHz.

IEC 61097-12, Limit Clause 5.4.4.3.2

*For modulation frequencies between 3 kHz and 6 kHz the frequency deviation shall not exceed the frequency deviation with a modulation frequency of 3 kHz. For a modulation frequency of 6 kHz, the frequency deviation shall not exceed ± 1.5 kHz.

For modulation frequencies between 6 kHz and 25 kHz, the frequency deviation shall not exceed that given by a linear response of frequency deviation against modulation frequency, starting at the point where the modulation frequency is 6 kHz and the frequency deviation is ± 1.5 kHz and inclined at 14 dB/octave. The limit of frequency deviation for the points measured has been calculated and is as shown in the table above.

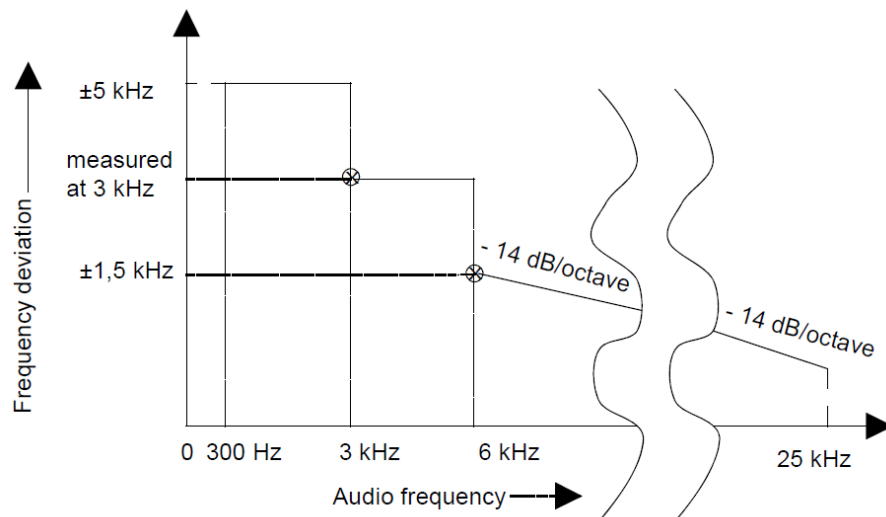


Figure 3 - Frequency deviation versus audio modulation frequency



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	1881	12	12-Nov-2025
Attenuator (30dB, 150W)	Narda	769-30	3369	12	02-Aug-2024
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	09-Mar-2025
Multimeter	Fluke	115	6343	12	28-Feb-2025
MXA Signal Analyser	Keysight Technologies	N9020B	6876	24	31-Aug-2026

Table 16

O/P Mon – Output Monitored using calibrated equipment



2.6 Limitation Characteristics of the Modulator

2.6.1 Specification Reference

IEC 61097-12, Clause 5.4.5

2.6.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 0

2.6.3 Date of Test

12-February-2025 to 13-February-2025

2.6.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.4.5.2.

2.6.5 Environmental Conditions

Ambient Temperature 20.9 - 22.1 °C

Relative Humidity 30.7 - 32.7 %

2.6.6 Test Results

Temperature	Voltage (V)	Frequency Deviation (kHz)
+20.9 °C	6.0	4.02
-20 °C	5.4	3.74
+55 °C	7.8	4.34

Table 17 - Limitation Characteristics of the Modulator

IEC 61097-12, Limit Clause 5.4.5.3

The frequency deviation shall be between ± 3.5 kHz and ± 5.0 kHz.



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
Climatic Chamber	Votsch	VT4002	161	-	O/P Mon
Audio Analyser	Hewlett Packard	8903B	1881	12	12-Nov-2025
Thermocouple Thermometer	Fluke	51	3173	12	31-May-2025
Attenuator (30dB, 150W)	Narda	769-30	3369	12	02-Aug-2024
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	09-Mar-2025
Multimeter	Fluke	115	6343	12	28-Feb-2025
MXA Signal Analyser	Keysight Technologies	N9020B	6876	24	31-Aug-2026

Table 18

O/P Mon – Output Monitored using calibrated equipment



2.7 Sensitivity of the Modulator, including Microphone

2.7.1 Specification Reference

IEC 61097-12, Clause 5.4.6

2.7.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 0

2.7.3 Date of Test

20-March-2025

2.7.4 Test Method

The test was performed in accordance with IEC 61097-12, clause 5.4.6.2.

2.7.5 Environmental Conditions

Ambient Temperature 21.7 °C

Relative Humidity 37.0 %

2.7.6 Test Results

Modulation Frequency (Hz) @ 94 dBA	Frequency Deviation (kHz)
1000	2.0

Table 19 - Sensitivity of the Modulator Including Microphone

IEC 61097-12, Limit Clause 5.4.6.3

The resulting frequency deviation shall be between ± 1.5 kHz and ± 3 kHz.



2.7.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 2.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Modulation Analyser	Hewlett Packard	8901B	45	12	03-Sep-2025
Sound Level Calibrator	Bruel & Kjaer	4231	243	12	15-Mar-2025
Amplifier (Acoustic Power)	Bruel & Kjaer	2706	249	-	TU
Amplifier (Measuring)	Bruel & Kjaer	T2609	250	-	TU
Mouth Simulator	Bruel & Kjaer	4227	255	-	TU
Microphone	Bruel & Kjaer	2669	3402022	-	TU
Sensor	Hewlett Packard	11722A	493	12	04-Sep-2025
Audio Analyser	Hewlett Packard	8903B	2212	12	12-Dec-2025
Sensor	Hewlett Packard	11722A	2787	12	05-Mar-2025
30dB Attenuator	Narda	766-30	4783	12	09-Oct-2025
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB-40	5481	12	13-May-2025
Attenuator 5W 30dB DC-18GHz	Aaren	AT40A-4041-D18-30	5504	12	16-Jul-2025

Table 20

TU - Traceability Unscheduled

O/P Mon – Output Monitored using calibrated equipment



2.8 Audio Frequency Response

2.8.1 Specification Reference

IEC 61097-12, Clause 5.4.7

2.8.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 0

2.8.3 Date of Test

12-February-2025

2.8.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.4.7.2.

2.8.5 Environmental Conditions

Ambient Temperature 20.9 °C

Relative Humidity 32.7 %

2.8.6 Test Results

Modulation Frequency (Hz)	Frequency Deviation (dB relative to 1 kHz)
300	-11.22
400	-8.37
500	-6.27
600	-4.62
800	-2.08
1000	0
1500	3.35
2000	5.56
2500	7.02
3000	7.19

Table 21 - Results for Audio Frequency Response

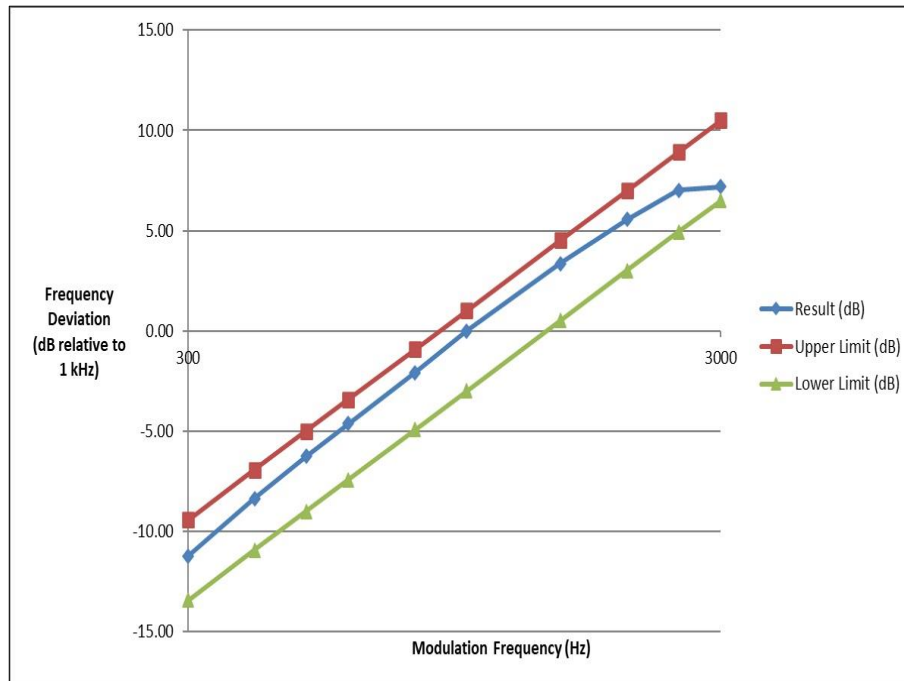


Figure 4 - Graph showing the Transmitter Modulation Frequency versus Frequency Deviation relative to 1 kHz

IEC 61097-12, Limit Clause 5.4.7.3

The modulation index (ratio of the frequency deviation to the modulation frequency) shall be constant and equal to its value at 1 kHz, within the limits of +1 dB or -3 dB.



2.8.7 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
Multimeter	Fluke	75 Mk3	455	12	09-Jan-2026
Audio Analyser	Hewlett Packard	8903B	576	12	04-Feb-2026
Power Divider	Weinschel	1506A	603	12	10-Oct-2025
Attenuator (30dB, 150W)	Narda	769-30	3369	12	02-Aug-2024
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	09-Mar-2025
Coaxial Fixed Attenuator DC - 18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6836	12	16-Aug-2025
MXA Signal Analyser	Keysight Technologies	N9020B	6876	24	31-Aug-2026

Table 22

O/P Mon – Output Monitored using calibrated equipment



2.9 Audio Frequency Harmonic Distortion of the Emission

2.9.1 Specification Reference

IEC 61097-12, Clause 5.4.8

2.9.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 0

2.9.3 Date of Test

12-February-2025 to 13-February-2025

2.9.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.4.8.2.

2.9.5 Environmental Conditions

Ambient Temperature 21.6 - 21.7 °C

Relative Humidity 30.7 - 31.7 %

2.9.6 Test Results

Modulation Frequency (Hz)	Modulation Index	Harmonic Distortion (%)
300	3	1.4
1000	3	1.0

Table 23 - Audiofrequency Harmonic Distortion, Normal Test Conditions

Temperature	Voltage	Harmonic Distortion (%)
-20 °C	5.4	2.2
+55 °C	7.8	1.2

Table 24 - Audiofrequency Harmonic Distortion, Extreme Test Conditions

IEC 61097-12, Limit Clause 5.4.8.3

The harmonic distortion shall not exceed 10%.



2.9.7 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
Modulation Analyser	Hewlett Packard	8901B	45	12	03-Sep-2025
Climatic Chamber	Votsch	VT4002	161	-	O/P Mon
Sensor	Hewlett Packard	11722A	493	12	04-Sep-2025
Audio Analyser	Hewlett Packard	8903B	1881	12	12-Nov-2025
Thermocouple Thermometer	Fluke	51	3173	12	31-May-2025
Attenuator (30dB, 150W)	Narda	769-30	3369	12	02-Aug-2024
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
Multimeter	Fluke	115	6343	12	28-Feb-2025

Table 25

O/P Mon – Output Monitored using calibrated equipment



2.10 Adjacent Channel Power

2.10.1 Specification Reference

IEC 61097-12, Clause 5.4.9

2.10.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 0

2.10.3 Date of Test

12-February-2025

2.10.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.4.9.2.

2.10.5 Environmental Conditions

Ambient Temperature 21.7 °C

Relative Humidity 31.7 %

2.10.6 Test Results

The measurement was performed with a modulated carrier.

Lower Adjacent Channel Power (dB)	Upper Adjacent Channel Power (dB)
-72.9	-73.5

Table 26 - Adjacent Channel Power Results

IEC 61097-12, Limit Clause 5.4.9.3.

The adjacent channel power shall not exceed a value of 70 dB below the carrier power of the transmitter without any need to be below 0.2 μ W.



2.10.7 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
Modulation Analyser	Hewlett Packard	8901B	45	12	03-Sep-2025
Sensor	Hewlett Packard	11722A	493	12	04-Sep-2025
Audio Analyser	Hewlett Packard	8903B	1881	12	12-Nov-2025
Attenuator (30dB, 150W)	Narda	769-30	3369	12	02-Aug-2024
Vector Signal Generator	Keysight Technologies	ESG E4438C	4731	12	20-Feb-2025
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	09-Mar-2025
Multimeter	Fluke	115	6343	12	28-Feb-2025

Table 27

O/P Mon – Output Monitored using calibrated equipment



2.11 Conducted Spurious Emissions Conveyed to the Antenna (Transmitter)

2.11.1 Specification Reference

IEC 61097-12, Clause 5.4.10

2.11.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 1

2.11.3 Date of Test

03-March-2025

2.11.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.4.10.2.

2.11.5 Environmental Conditions

Ambient Temperature 21.2 °C

Relative Humidity 35.9 %

2.11.6 Test Results

This test was performed on 156.850 MHz.

Frequency (MHz)	Level (dBm)
19.2	-41.4
176.0	-36.3

Table 28 - Transmitter Spurious Emissions Results

No other emissions were detected within 6 dB of the limit.

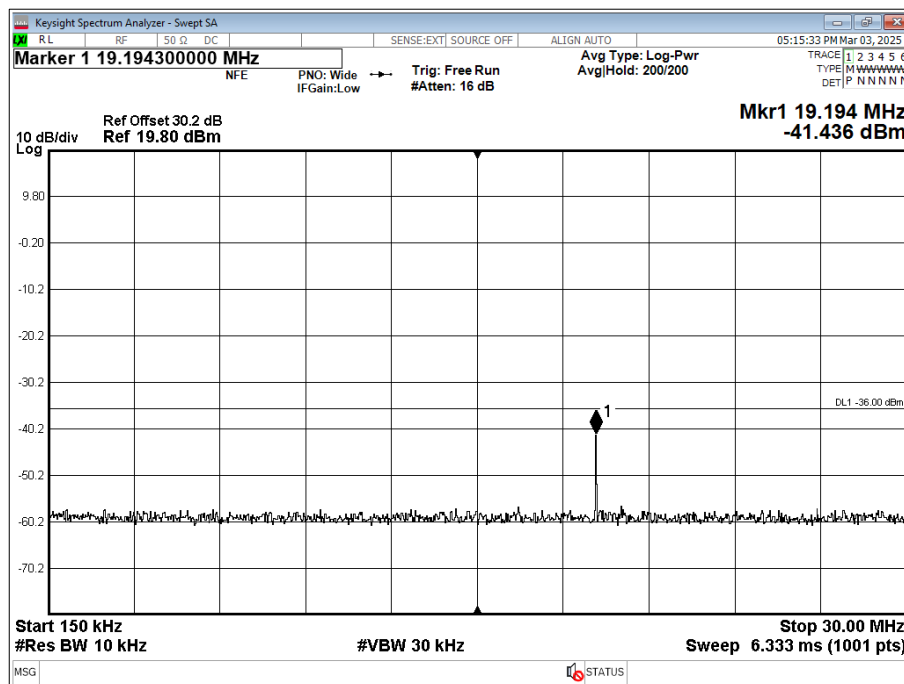


Figure 5 - 150 kHz to 30 MHz

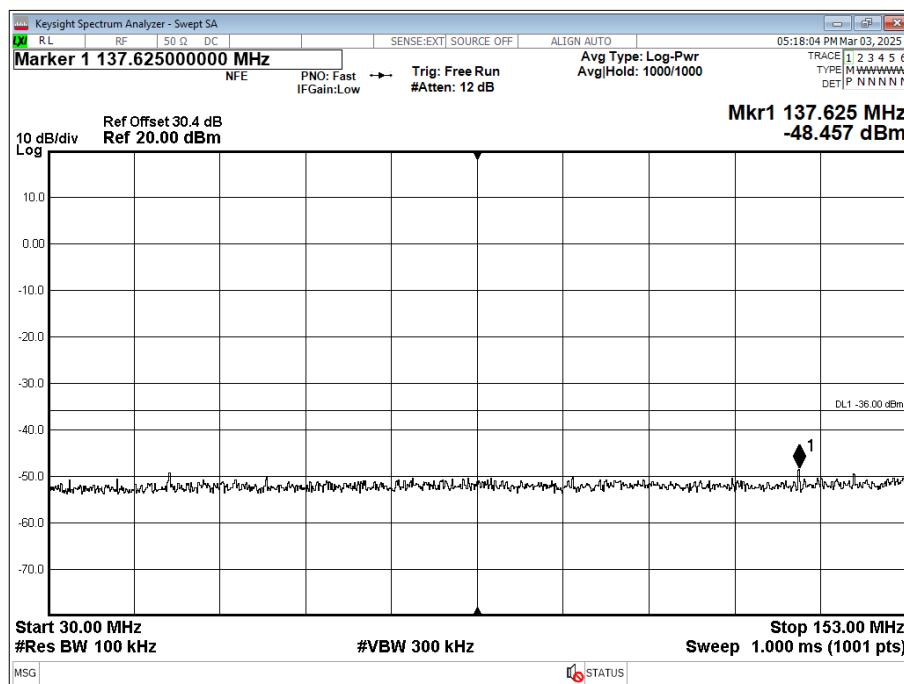


Figure 6 - 30 MHz to 153 MHz

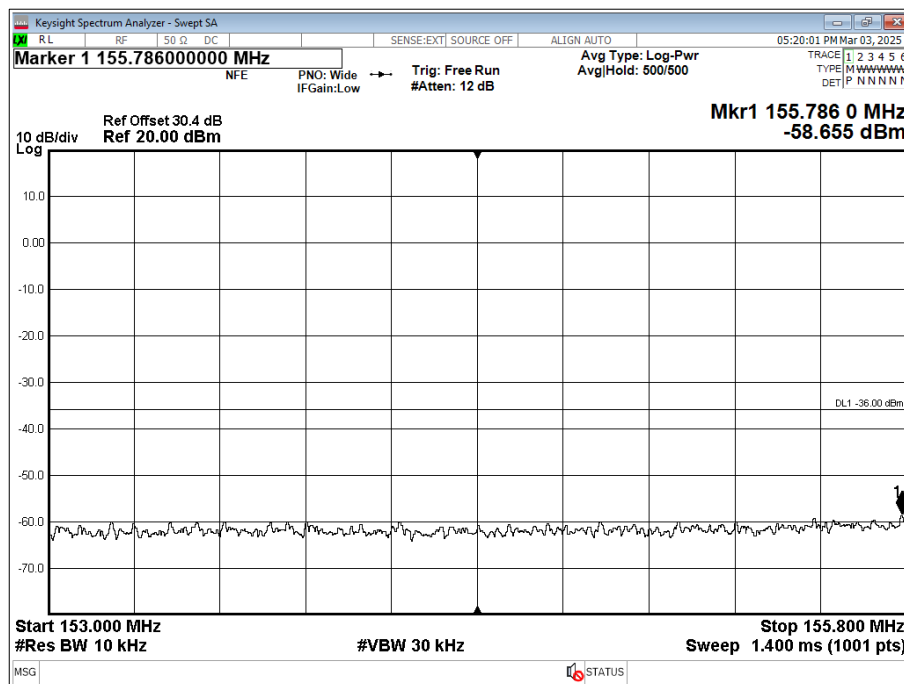


Figure 7 - 153 MHz to 155.8 MHz

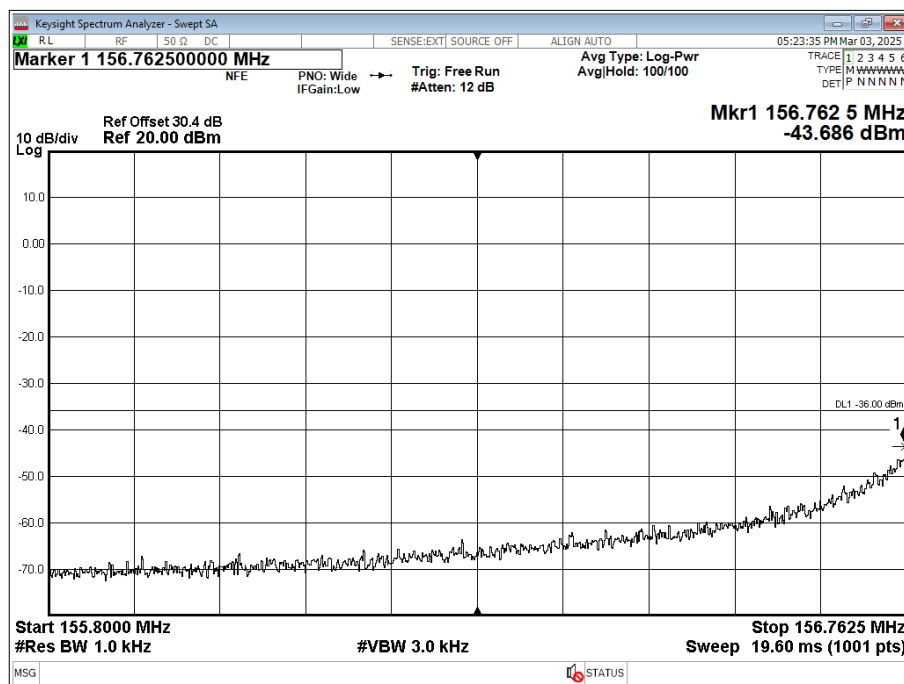


Figure 8 - 155.8 MHz to 156.7625 MHz

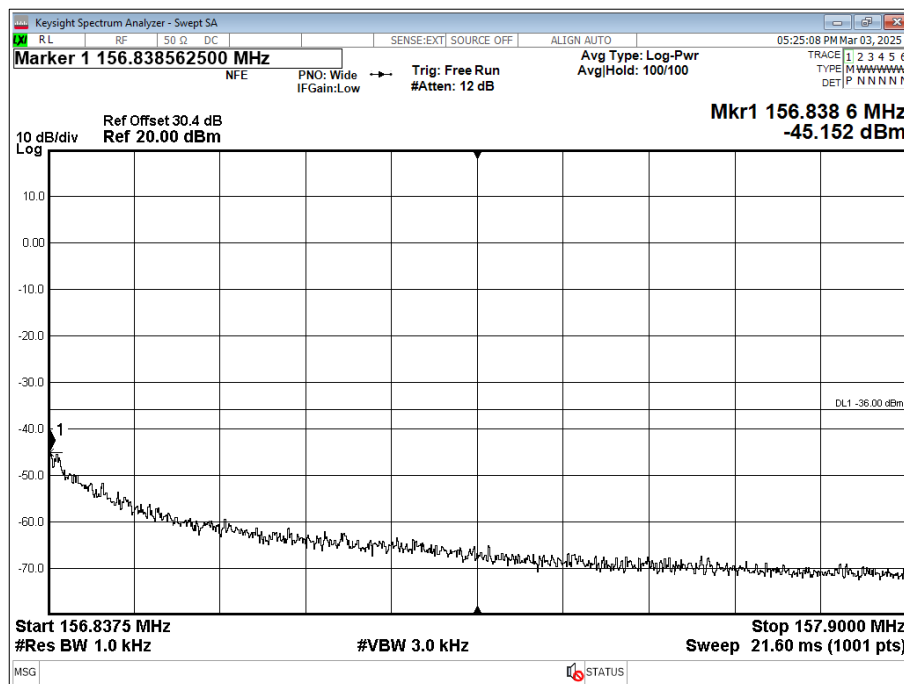


Figure 9 - 156.8375 MHz to 157.9 MHz

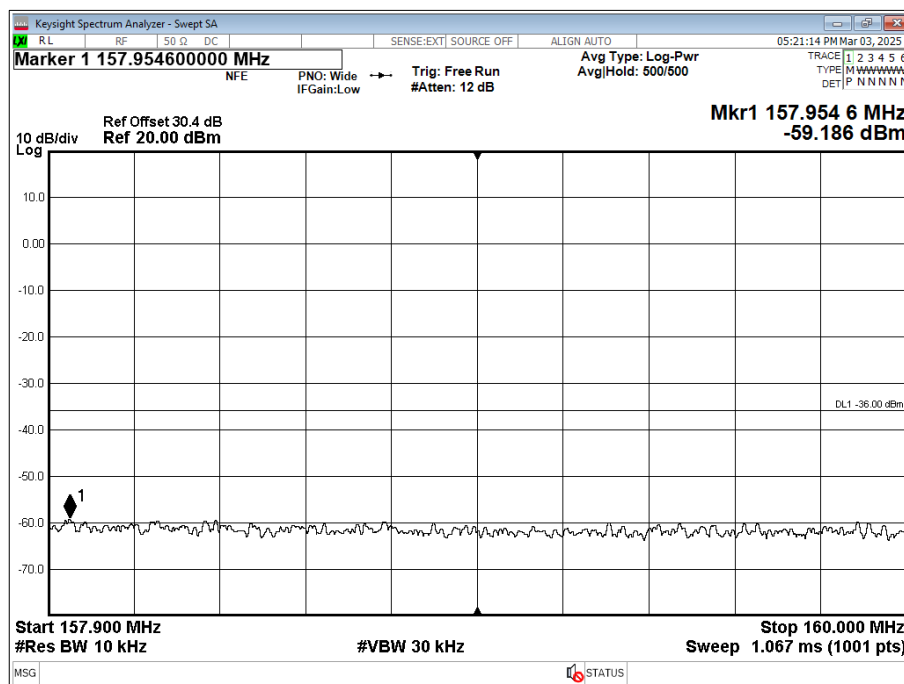


Figure 10 - 157.9 MHz to 160 MHz

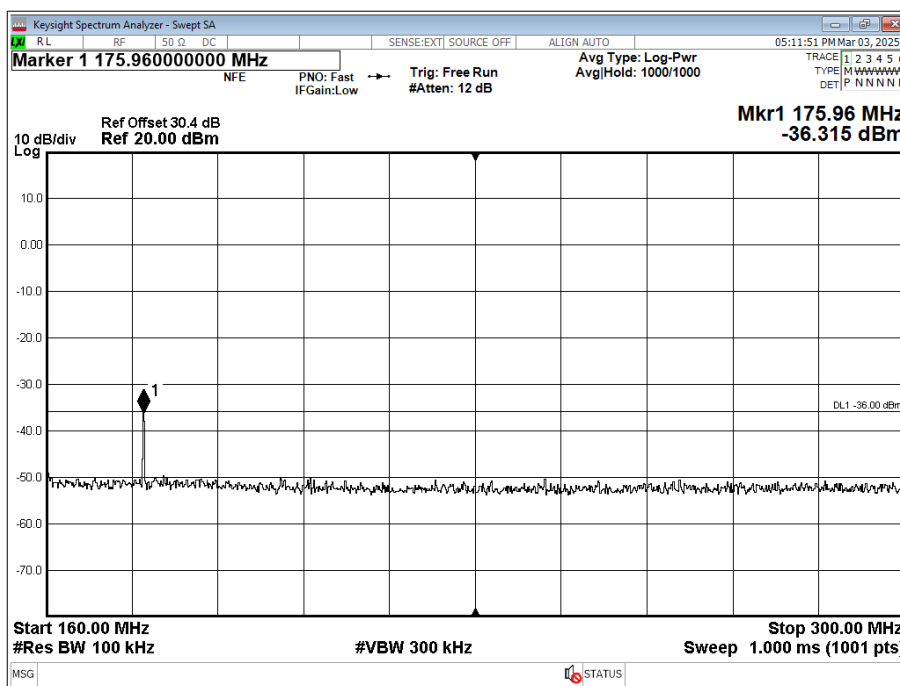


Figure 11 - 160 MHz to 300 MHz

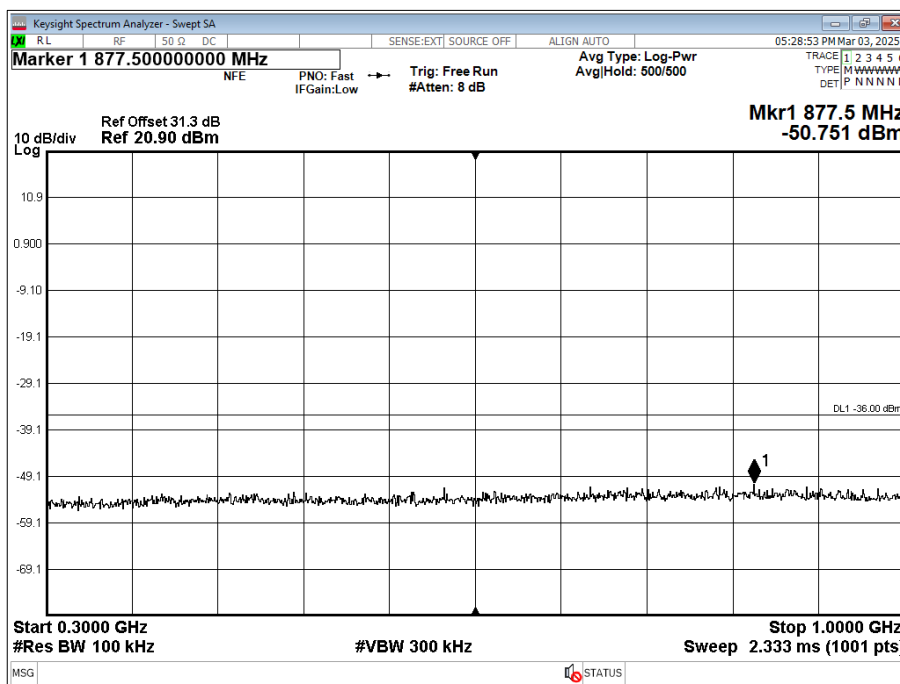


Figure 12 - 300 MHz to 1 GHz

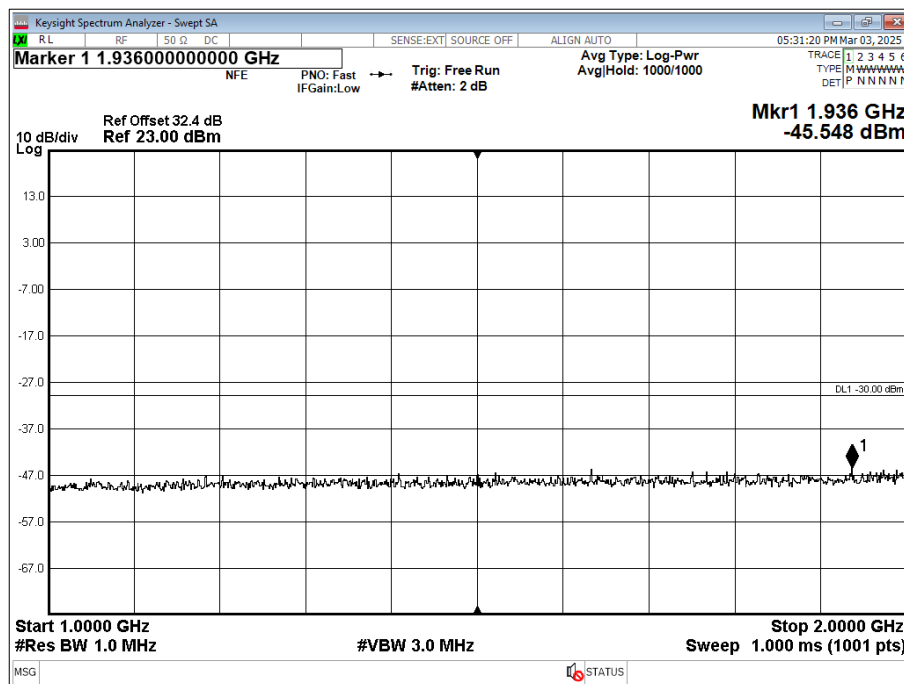


Figure 13 - 1 GHz to 2 GHz

IEC 61097-12, Limit Clause 5.4.10.3

The power of any spurious emissions on any discrete frequency shall not exceed 0.25 μ W (-36 dBm) in the frequency range 150 kHz to 1 GHz and 1 μ W (-30 dBm) in the frequency range 1 GHz to 2 GHz



2.11.7 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 Supply Unit	Farnell	LB30-4	158	12	O/P Mon
Multimeter	Fluke	75 Mk3	455	12	09-Jan-2026
Attenuator (20 dB, 150 W)	Narda	769-20	3367	12	02-Sep-2025
Attenuator (10dB, 150W)	Narda	769-10	3368	12	21-Mar-2025
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	24-Feb-2026
Network Analyser	Keysight Technologies	E5063A	5018	12	23-Oct-2025
Electronic Calibration Module	Keysight Technologies	85093C	5188	12	07-Feb-2026
300 MHz High Pass Filter	Mini-Circuits	NHP-300	5532	12	28-May-2025
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	09-Mar-2025

Table 29

O/P Mon – Output Monitored using calibrated equipment



2.12 Residual Modulation of the Transmitter

2.12.1 Specification Reference

IEC 61097-12, Clause 5.4.11

2.12.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 0

2.12.3 Date of Test

12-February-2025

2.12.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.4.11.2.

2.12.5 Environmental Conditions

Ambient Temperature 20.9 °C
Relative Humidity 32.7 %

2.12.6 Test Results

Residual Modulation (dB)
-40

Table 30 - Residual Modulation

IEC 61097-12, Limit Clause 5.4.11.3

The residual modulation shall not exceed -40 dB.



2.12.7 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
Modulation Analyser	Hewlett Packard	8901B	45	12	03-Sep-2025
Sensor	Hewlett Packard	11722A	493	12	04-Sep-2025
Audio Analyser	Hewlett Packard	8903B	1881	12	12-Nov-2025
Attenuator (30dB, 150W)	Narda	769-30	3369	12	02-Aug-2024
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
Multimeter	Fluke	115	6343	12	28-Feb-2025

Table 31

O/P Mon – Output Monitored using calibrated equipment

2.13 Transient Frequency Behaviour of the Transmitter

2.13.1 Specification Reference

IEC 61097-12, Clause 5.4.12

2.13.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 0

2.13.3 Date of Test

13-February-2025

2.13.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.4.12.2.

The EUT was connected to a spectrum analyser via a cable and attenuator. The FM demod measurement function was used in place of the test discriminator and storage oscilloscope to display the frequency deviation versus time.

2.13.5 Environmental Conditions

Ambient Temperature 22.1 °C

Relative Humidity 32.8 %

2.13.6 Test Results

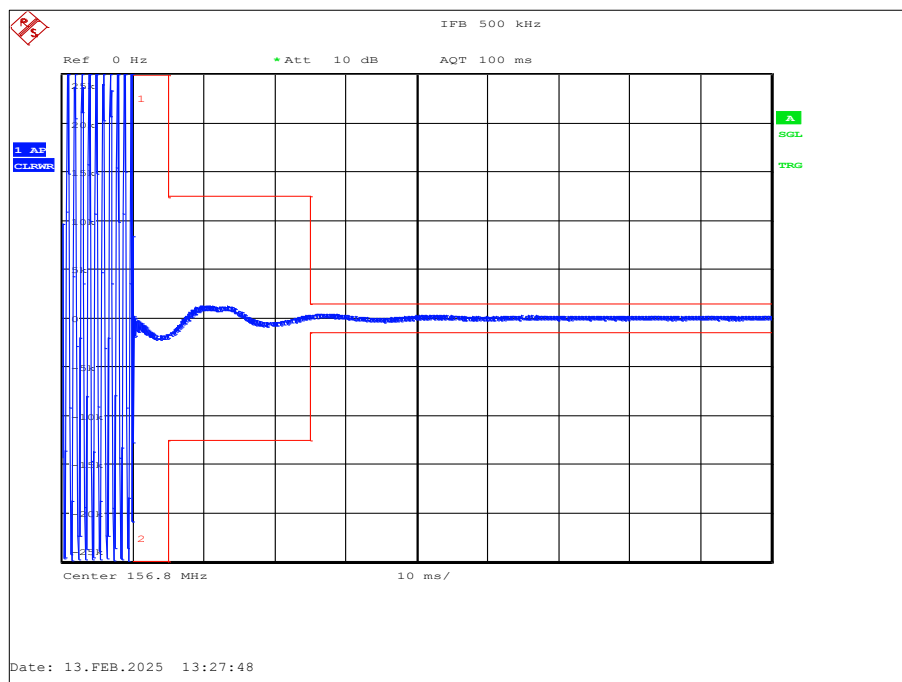


Figure 14 - Switch On

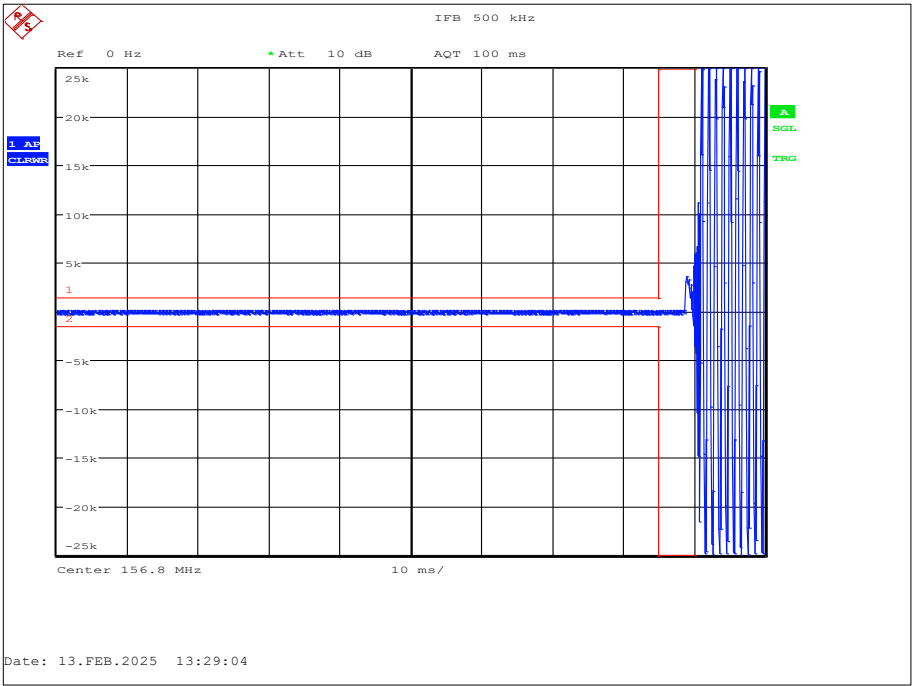


Figure 15 - Switch Off

IEC 61097-12, Limit Clause 5.4.12.3

During the period of time t_1 and t_3 the frequency difference shall not exceed the value of 1 channel separation. The frequency difference, after the end of t_2 , shall be within the limit of the frequency error of 5.4.1.3.

During the period of time t_2 the frequency difference shall not exceed the value of $\frac{1}{2}$ channel separation. Before the start of t_3 the frequency difference shall be within the limit of the frequency error of 5.4.1.3.

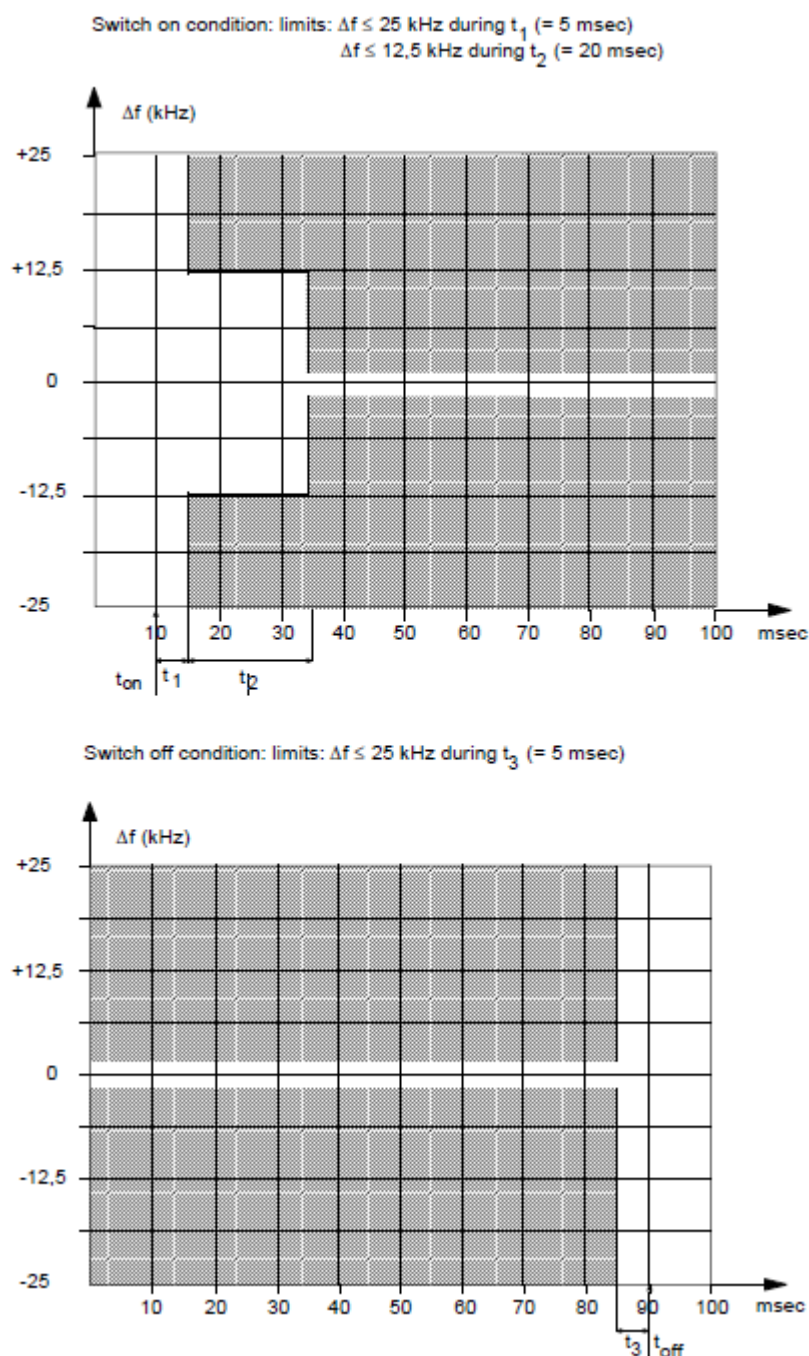


Figure 16 - Limit for Transient Frequency Behaviour



2.13.7 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	10-Oct-2025
Signal Generator	Rohde & Schwarz	SMY 01	1389	12	15-May-2025
Attenuator (30dB, 150W)	Narda	769-30	3369	12	02-Aug-2024
Signal Analyser	Rohde & Schwarz	FSQ 26	3545	12	31-May-2025
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	09-Mar-2025
Multimeter	Fluke	115	6343	12	28-Feb-2025

Table 32

O/P Mon – Output Monitored using calibrated equipment

2.14 Harmonic Distortion and Rated Audio Frequency Output Power

2.14.1 Specification Reference

IEC 61097-12, Clause 5.5.1

2.14.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 1
SR303, S/N: S24070003 - Modification State 2

2.14.3 Date of Test

04-March-2025 to 15-April-2025

2.14.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.5.1.2.

2.14.5 Environmental Conditions

Ambient Temperature 21.7 - 22.1 °C
Relative Humidity 28.7 - 41.3 %

2.14.6 Test Results

Modulation Frequency (Hz)	Harmonic Distortion (%)	Audio Frequency Output Power (mW)
300	2.5	1004
1000	4.5	995

Table 31 - Harmonic Distortion and Rated Audio Frequency Output Power, Normal Test Conditions

Temperature	Voltage (V)	Signal Generator Frequency Offset (kHz)	Harmonic Distortion (%)	Audio Frequency Output Power (mW)
-20 °C	5.4	0	4.1	541
-20 °C	5.4	-1.5	3.3	539
-20 °C	5.4	+1.5	4.1	522
+55 °C	7.8	0	2.7	655
+55 °C	7.8	-1.5	4.4	637
+55 °C	7.8	+1.5	4.4	642

Table 32 - Harmonic Distortion and Rated Audio Frequency Output Power, Extreme test conditions

IEC 61097-12, Limit Clause 5.5.1.3

The rated audio frequency output power shall be at least 200 mW in the loudspeaker and 1 mW in a headset or earphone if provided.

The harmonic distortion shall not exceed 10 %.



2.14.7 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
Multimeter	Fluke	75 Mk3	455	12	09-Jan-2026
Audio Analyser	Hewlett Packard	8903B	576	12	04-Feb-2026
Power Divider	Weinschel	1506A	603	12	10-Oct-2025
Thermocouple Thermometer	Fluke	51	3173	12	31-May-2025
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	24-Feb-2026
Vector Signal Generator	Keysight Technologies	ESG E4438C	4731	12	24-Mar-2025
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	09-Mar-2025
Coaxial Fixed Attenuator DC - 18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6836	12	16-Aug-2025

Table 33

O/P Mon – Output Monitored using calibrated equipment



2.15 Audio Frequency Response

2.15.1 Specification Reference

IEC 61097-12, Clause 5.5.2

2.15.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 1

2.15.3 Date of Test

04-March-2025

2.15.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.5.2.2.

2.15.5 Environmental Conditions

Ambient Temperature	21.7 °C
Relative Humidity	28.7 %

2.15.6 Test Results

Modulation Frequency (Hz)	Deviation (Relative to 1 kHz – dB)
300	7.87
400	7.61
500	5.96
600	4.41
800	1.93
1000	0
1200	-1.57
1500	-3.51
2000	-6.07
2500	-8.28
3000	-10.43

Table 34 – Audio Frequency response, Nominal Frequency of Receiver

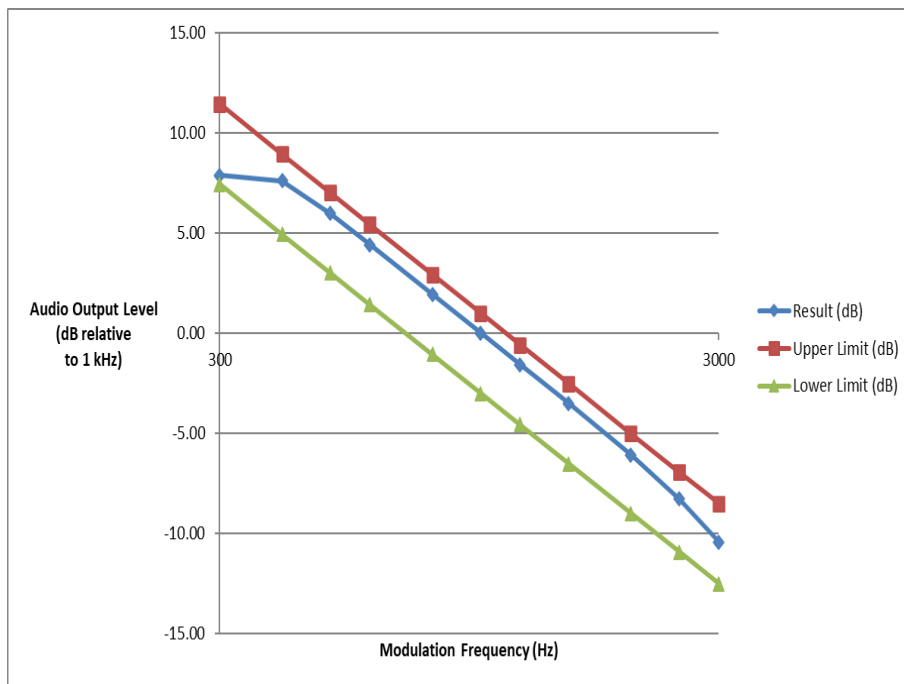


Figure 17 – Audio Frequency Response Graph, Nominal Frequency

Modulation Frequency (Hz)	Deviation (Relative to 1 KHz – dB)
300	8.16
400	7.87
500	6.19
600	4.60
800	2.04
1000	0
1200	-1.64
1500	-3.76
2000	-6.61
2500	-8.94
3000	-10.91

Table 35 – Audio Frequency response, Nominal Frequency of Receiver +1500 Hz

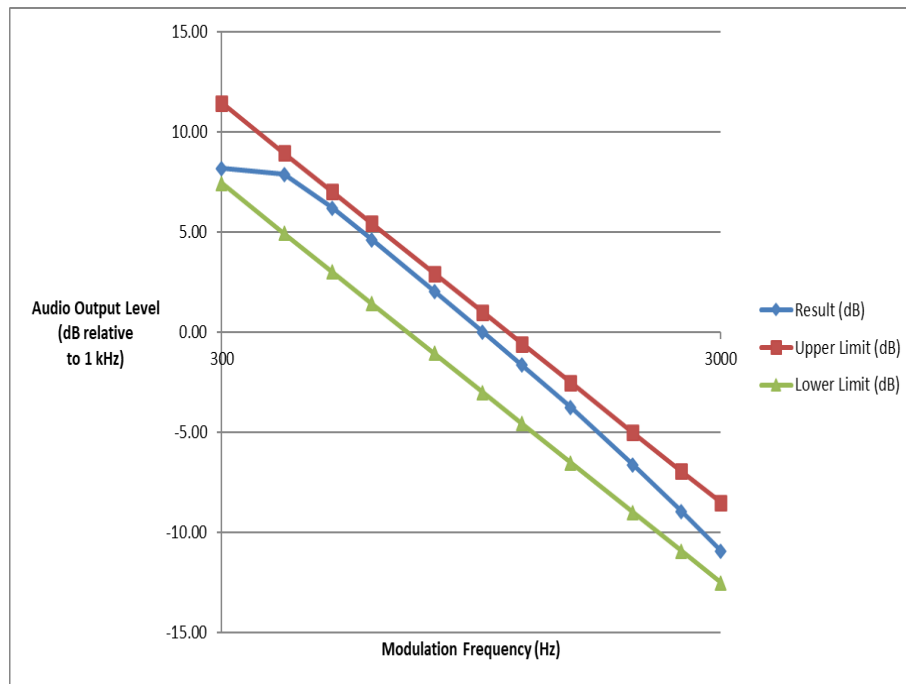


Figure 18 – Audio Frequency Response Graph, Nominal Frequency +1500 Hz

Modulation Frequency (Hz)	Deviation (Relative to 1 KHz – dB)
300	8.19
400	7.88
500	6.19
600	4.61
800	2.05
1000	0
1200	-1.64
1500	-3.76
2000	-6.68
2500	-9.09
3000	-11.17

Table 36 – Audio Frequency response, Nominal Frequency of Receiver -1500 Hz

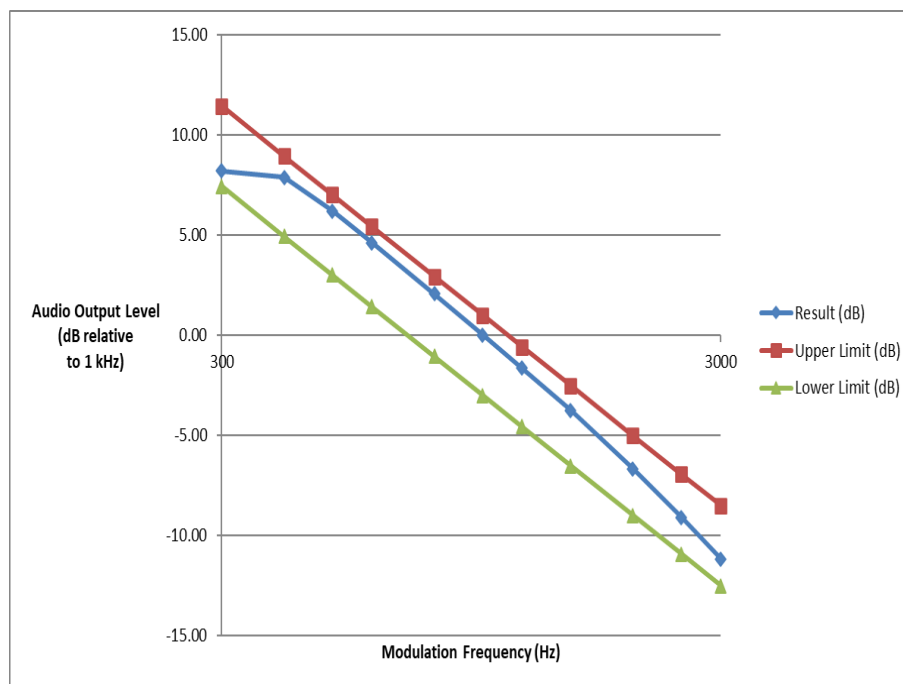


Figure 19 – Audio Frequency Response Graph, Nominal Frequency -1500 Hz

IEC 61097-12, Limit Clause 5.5.2.3

The receiver response shall not deviate by more than +1 dB or –3 dB from a characteristic giving the output level as a function of the audio frequency, decreasing by 6 dB/octave and passing through the measured point at 1 kHz.



2.15.7 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
Multimeter	Fluke	75 Mk3	455	12	09-Jan-2026
Audio Analyser	Hewlett Packard	8903B	576	12	04-Feb-2026
Power Divider	Weinschel	1506A	603	12	10-Oct-2025
Attenuator (30dB, 150W)	Narda	769-30	3369	12	02-Aug-2024
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	24-Feb-2026
Vector Signal Generator	Keysight Technologies	ESG E4438C	4731	12	24-Mar-2025
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	09-Mar-2025
Coaxial Fixed Attenuator DC - 18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6836	12	16-Aug-2025

Table 37

O/P Mon – Output Monitored using calibrated equipment



2.16 Maximum Usable Sensitivity

2.16.1 Specification Reference

IEC 61097-12, Clause 5.5.3

2.16.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 1
SR303, S/N: S24070003 - Modification State 2

2.16.3 Date of Test

04-March-2025 to 15-April-2025

2.16.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.5.3.2.

2.16.5 Environmental Conditions

Ambient Temperature 22.1 - 22.2 °C
Relative Humidity 29.6 - 42.2 %

2.16.6 Test Results

Temperature	Voltage (V)	Maximum Usable Sensitivity (dBμV e.m.f)
+22.2 °C	6	-6.1
-20 °C	5.4	-6.7
+55 °C	7.8	-5.1

Table 38 – Maximum Usable Sensitivity

IEC 61097-12, Limit Clause 5.5.3.3

The maximum usable sensitivity shall not exceed +6 dBμV under normal test conditions and +12 dBμV under extreme test conditions



2.16.7 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
Multimeter	Fluke	75 Mk3	455	12	09-Jan-2026
Audio Analyser	Hewlett Packard	8903B	576	12	04-Feb-2026
Power Divider	Weinschel	1506A	603	12	10-Oct-2025
Thermocouple Thermometer	Fluke	51	3173	12	31-May-2025
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	24-Feb-2026
Vector Signal Generator	Keysight Technologies	ESG E4438C	4731	12	24-Mar-2025
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	09-Mar-2025
Coaxial Fixed Attenuator DC - 18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6836	12	16-Aug-2025

Table 39

O/P Mon – Output Monitored using calibrated equipment



2.17 Co-channel Rejection

2.17.1 Specification Reference

IEC 61097-12, Clause 5.5.4

2.17.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 0

2.17.3 Date of Test

09-April-2025

2.17.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.5.4.2.

2.17.5 Environmental Conditions

Ambient Temperature 20.6 °C

Relative Humidity 33.2 %

2.17.6 Test Results

Displacement of Unwanted Signal (KHz)	Co-Channel Rejection (dB)
-3	-8.6
0	-9.6
+3	-8.6

Table 40 – Co-Channel Rejection

IEC 61097-12, Limit Clause 5.5.4.3

The co-channel rejection ratio shall be between –10 dB and 0 dB.



2.17.7 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
Signal Generator	Rohde & Schwarz	SMY 01	118	12	21-Feb-2026
Audio Analyser	Hewlett Packard	8903B	576	12	04-Feb-2026
Power Splitter	Weinschel	1506A	606	12	03-Jan-2026
Signal Generator, 9kHz - 3GHz	Rohde & Schwarz	SMA 100A	3504	12	07-Feb-2026
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	24-Feb-2026
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
Coaxial Fixed Attenuator DC-18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6179	12	11-Oct-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	18-Sep-2025
Multimeter	Fluke	115	6343	12	27-Feb-2026

Table 41

O/P Mon – Output Monitored using calibrated equipment



2.18 Adjacent Channel Selectivity

2.18.1 Specification Reference

IEC 61097-12, Clause 5.5.5

2.18.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 2

2.18.3 Date of Test

14-April-2025 to 15-April-2025

2.18.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.5.5.2.

2.18.5 Environmental Conditions

Ambient Temperature 22.1 - 22.2 °C
Relative Humidity 38.1 - 41.7 %

2.18.6 Test Results

Temperature	Voltage	Adjacent Channel Selectivity (dB)	
		-25 kHz	+25 kHz
+22.1 °C	6.0	72.7	73.0
-20 °C	5.4	73.6	74.2
+55 °C	7.8	72.3	72.1

Table 42 - Adjacent Channel Selectivity

IEC 61097-12, Limit Clause 5.5.5.3.

The adjacent channel selectivity shall be not less than 70 dB under normal test conditions and not less than 60 dB under extreme test conditions.



2.18.7 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
Signal Generator	Rohde & Schwarz	SMY 01	118	12	21-Feb-2026
Climatic Chamber	Votsch	VT4002	161	-	O/P Mon
Audio Analyser	Hewlett Packard	8903B	576	12	04-Feb-2026
Power Splitter	Weinschel	1506A	606	12	03-Jan-2026
Thermocouple Thermometer	Fluke	51	3173	12	31-May-2025
Signal Generator, 9kHz - 3GHz	Rohde & Schwarz	SMA 100A	3504	12	07-Feb-2026
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	24-Feb-2026
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
Coaxial Fixed Attenuator DC-18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6179	12	11-Oct-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	18-Sep-2025
Multimeter	Fluke	115	6343	12	27-Feb-2026

Table 43

O/P Mon – Output Monitored using calibrated equipment



2.19 Spurious Response Rejection

2.19.1 Specification Reference

IEC 61097-12, Clause 5.5.6

2.19.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 2

2.19.3 Date of Test

16-April-2025 to 22-April-2025

2.19.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.5.6.2.

2.19.5 Environmental Conditions

Ambient Temperature 21.2 - 21.7 °C

Relative Humidity 38.1 - 41.6 %

2.19.6 Test Results

The unwanted signal generator was swept from 100 kHz to 2 GHz, below is a list of any spurious responses that were obtained as a results of the search:

Frequency (MHz)	Spurious Response Rejection Ratio (dB)
58.05	78.4
154.05	72.5
156.775	73.1
156.825	73.1
162.585	76.4

Table 44 - List of Detected Spurious Responses

IEC 61097-12, Limit Clause 5.5.6.3

At any frequency separated from the nominal frequency of the receiver by more than 25 kHz, the spurious response rejection ratio shall be not less than 70 dB.



2.19.7 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	04-Feb-2026
Power Splitter	Weinschel	1506A	606	12	03-Jan-2026
Filter, Broadband	Texscan	6LD-100-3-BB	1248		TU
Signal Generator, 9kHz - 3GHz	Rohde & Schwarz	SMA 100A	3504	12	07-Feb-2026
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	17-Mar-2026
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	17-Mar-2026
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	24-Feb-2026
Vector Signal Generator	Keysight Technologies	ESG E4438C	4731	12	20-May-2025
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
Coaxial Fixed Attenuator DC-18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6178	12	22-Jul-2025
Coaxial Fixed Attenuator DC-18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6179	12	11-Oct-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	18-Sep-2025
Multimeter	Fluke	115	6343	12	27-Feb-2026

Table 45

TU - Traceability Unscheduled

O/P Mon – Output Monitored using calibrated equipment



2.20 Intermodulation Response

2.20.1 Specification Reference

IEC 61097-12, Clause 5.5.7

2.20.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 2

2.20.3 Date of Test

14-April-2025

2.20.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.5.7.2.

2.20.5 Environmental Conditions

Ambient Temperature 23.4 °C
Relative Humidity 35.1 %

2.20.6 Test Results

Signal Generator A Frequency (MHz)	Signal Generator B Frequency Offset (kHz)	Signal Generator C Frequency Offset (kHz)	Intermodulation Response Ratio (dB)
156.800	-50	-100	71.8
156.800	+50	+100	71.3

Table 46 - Intermodulation Response Rejection Results

IEC 61097-12, Limit Clause 5.5.7.3

The intermodulation response rejection ratio shall be greater than 68 dB.



2.20.7 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
Signal Generator	Rohde & Schwarz	SMY 01	118	12	21-Feb-2026
Audio Analyser	Hewlett Packard	8903B	576	12	04-Feb-2026
Power Splitter	Weinschel	1506A	604	12	03-Jan-2026
Power Splitter	Weinschel	1506A	606	12	03-Jan-2026
Signal Generator	Rohde & Schwarz	SMY 01	1389	12	15-May-2025
Signal Generator, 9kHz - 3GHz	Rohde & Schwarz	SMA 100A	3504	12	07-Feb-2026
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	24-Feb-2026
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
Coaxial Fixed Attenuator DC-18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6178	12	22-Jul-2025
Coaxial Fixed Attenuator DC-18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6179	12	11-Oct-2025
Coaxial Fixed Attenuator DC-18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6182	12	22-Jul-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	18-Sep-2025
Multimeter	Fluke	115	6343	12	27-Feb-2026
Attenuator 5W 3dB DC-18GHz	Aaren	AT40A-4041-D18-03	6546	12	21-Aug-2025

Table 47

O/P Mon – Output Monitored using calibrated equipment



2.21 Blocking or Desensitization

2.21.1 Specification Reference

IEC 61097-12, Clause 5.5.8

2.21.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 2

2.21.3 Date of Test

14-April-2025

2.21.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.5.8.2.

2.21.5 Environmental Conditions

Ambient Temperature 24.4 °C

Relative Humidity 33.5 %

2.21.6 Test Results

Unwanted Signal Generator Frequency Offset (kHz)	Blocking Level (dBμV e.m.f)
-10	101.8
-5	95.8
-2	94.8
-1	93.3
1	94.5
2	94.4
5	94.3
10	97.4

Table 48 - Fixed Frequency Blocking Results

IEC 61097-12, Limit Clause 5.5.8.3.

The blocking level for any frequency within the specified ranges, shall be not less than 90 dBμV (e.m.f.), except at frequencies on which spurious responses are found.



2.21.7 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
Signal Generator	Rohde & Schwarz	SMY 01	118	12	21-Feb-2026
Audio Analyser	Hewlett Packard	8903B	576	12	04-Feb-2026
Power Splitter	Weinschel	1506A	606	12	03-Jan-2026
Signal Generator, 9kHz - 3GHz	Rohde & Schwarz	SMA 100A	3504	12	07-Feb-2026
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	24-Feb-2026
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
Coaxial Fixed Attenuator DC-18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6179	12	11-Oct-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	18-Sep-2025
Multimeter	Fluke	115	6343	12	27-Feb-2026

Table 49

O/P Mon – Output Monitored using calibrated equipment



2.22 Conducted Spurious Emissions Conveyed to the Antenna (Receiver)

2.22.1 Specification Reference

IEC 61097-12, Clause 5.5.9

2.22.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 2

2.22.3 Date of Test

15-April-2025

2.22.4 Test Method

This test was performed in accordance with IEC 61097-12. clause 5.5.9.2.

2.22.5 Environmental Conditions

Ambient Temperature 22.1 °C
Relative Humidity 40.2 %

2.22.6 Test Results

This test was performed on 156.800 MHz.

Frequency (MHz)	Level (dBm)
*	

Table 50 - Receiver Spurious Emissions Results

*No emissions were detected within 10 dB of the limit.

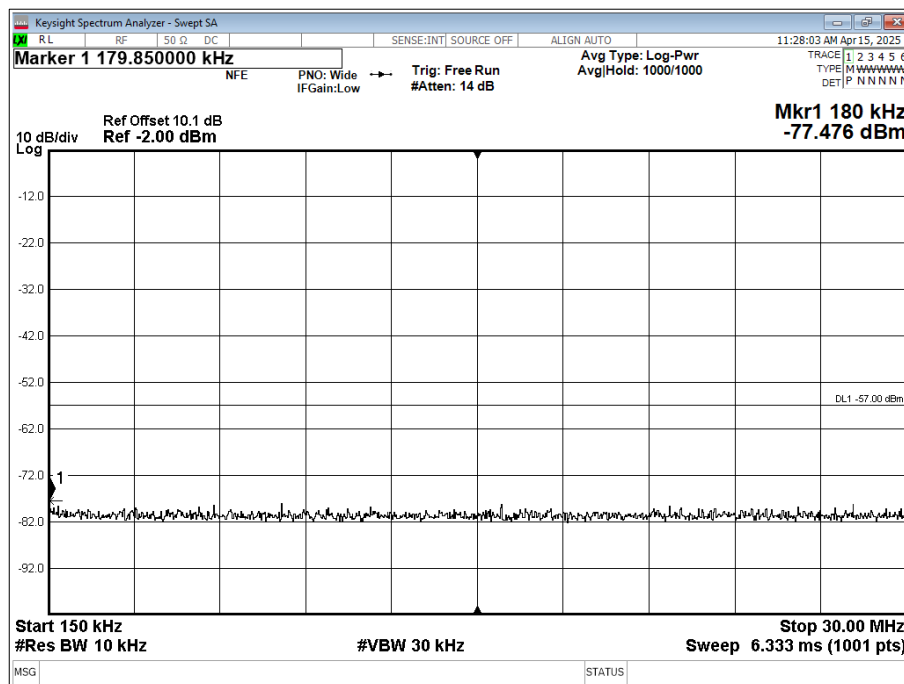


Figure 20 - 150 kHz to 30 MHz

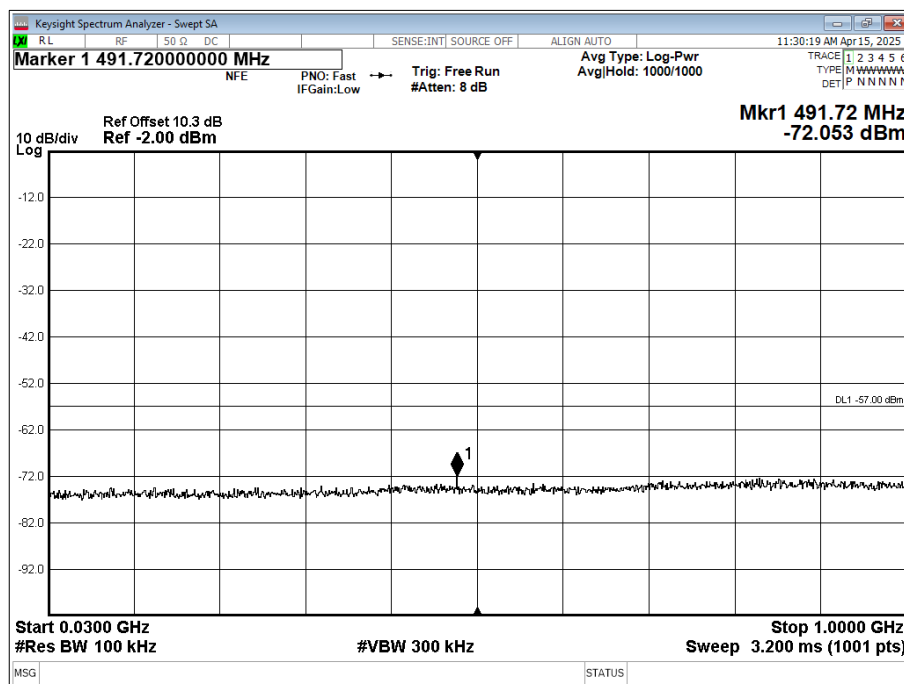


Figure 21 - 30 MHz to 1 GHz

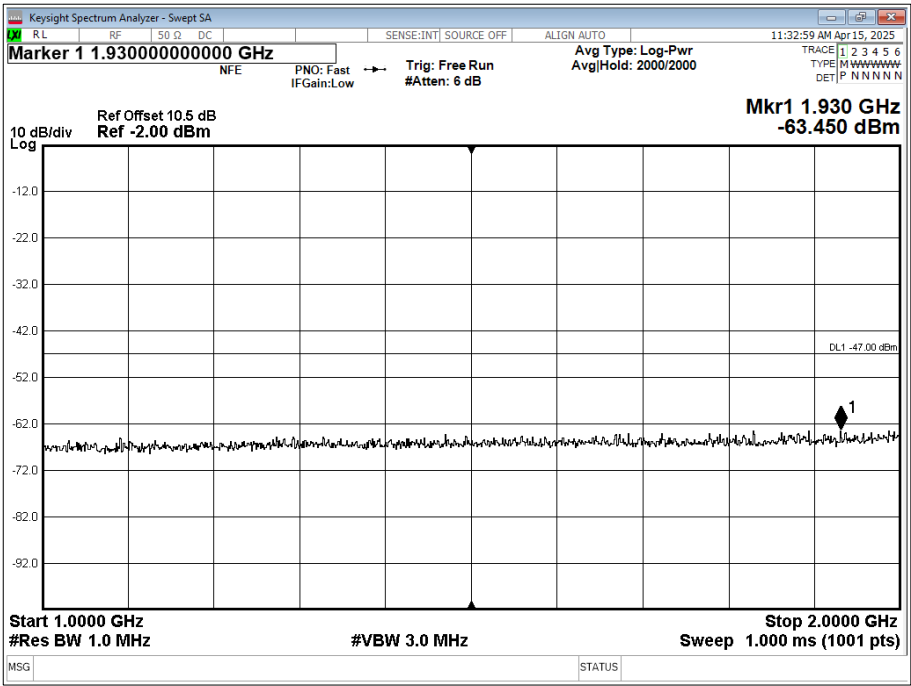


Figure 22 - 1 GHz to 2 GHz

IEC 61097-12, Limit Clause 5.5.9.3.

The power of any spurious emission in the specified range at the antenna terminal shall not exceed –57 dBm (2 nW) in the frequency range 150 kHz to 1 GHz and –47 dBm (20 nW) in the frequency range 1 GHz to 2 GHz.



2.22.7 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
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	17-Mar-2026
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	17-Mar-2026
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	24-Feb-2026
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Cable (18 GHz)	Rosenberger	LU7-071-1000	5097	12	10-Jun-2025
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
Coaxial Fixed Attenuator DC-18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6179	12	11-Oct-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	18-Sep-2025
Multimeter	Fluke	115	6343	12	27-Feb-2026

Table 51

O/P Mon – Output Monitored using calibrated equipment



2.23 Amplitude Response of the Receiver Limiter

2.23.1 Specification Reference

IEC 61097-12, Clause 5.5.10

2.23.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 2

2.23.3 Date of Test

14-April-2025

2.23.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.5.10.2.

2.23.5 Environmental Conditions

Ambient Temperature 24.7 °C
Relative Humidity 33.1 %

2.23.6 Test Results

Ratio of Audio Frequency Output Level (dB)
<0.1

Table 52 - Amplitude Response of the Receiver Limiter

IEC 61097-12, Limit Clause 5.5.10.3

When the level of the input signal is varied as specified, the variation between the maximum and minimum value of the audio frequency output power level shall not exceed 3 dB.



2.23.7 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
Signal Generator	Rohde & Schwarz	SMY 01	118	12	21-Feb-2026
Audio Analyser	Hewlett Packard	8903B	576	12	04-Feb-2026
Power Splitter	Weinschel	1506A	606	12	03-Jan-2026
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	24-Feb-2026
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
Coaxial Fixed Attenuator DC-18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6179	12	11-Oct-2025
Multimeter	Fluke	115	6343	12	27-Feb-2026

Table 53

O/P Mon – Output Monitored using calibrated equipment



2.24 Receiver Noise and Hum

2.24.1 Specification Reference

IEC 61097-12, Clause 5.5.11

2.24.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 2

2.24.3 Date of Test

14-April-2025

2.24.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.5.11.2.

2.24.5 Environmental Conditions

Ambient Temperature 24.7 °C
Relative Humidity 33.1 %

2.24.6 Test Results

Noise and Hum Level (dB)
-54

Table 54 - Noise and Hum Level

IEC 61097-12, Limit Clause 5.5.11.3.

The hum and noise level of the receiver shall not exceed -40 dB.



2.24.7 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
Signal Generator	Rohde & Schwarz	SMY 01	118	12	21-Feb-2026
Audio Analyser	Hewlett Packard	8903B	576	12	04-Feb-2026
Power Splitter	Weinschel	1506A	606	12	03-Jan-2026
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	24-Feb-2026
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
Coaxial Fixed Attenuator DC-18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6179	12	11-Oct-2025
Multimeter	Fluke	115	6343	12	27-Feb-2026

Table 55

O/P Mon – Output Monitored using calibrated equipment



2.25 Squelch Operation

2.25.1 Specification Reference

IEC 61097-12, Clause 5.5.12

2.25.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 2

2.25.3 Date of Test

15-April-2025

2.25.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.5.12.2.

2.25.5 Environmental Conditions

Ambient Temperature 25.1 °C

Relative Humidity 34.2 %

2.25.6 Test Results

Test	Method
A	With the squelch facility switched off, a test signal of +30 dB μ V (e.m.f.), at a carrier frequency equal to the nominal frequency of the receiver and modulated by the normal test modulation specified in 6.3, shall be applied to the input terminals of the receiver. An audiofrequency load and a psophometric filtering network shall be connected to the output terminals of the receiver. The receiver's audiofrequency power control shall be set so as to produce the rated output power defined in 9.1. The output signal shall be measured with the aid of an r.m.s. voltmeter. The input signal shall then be suppressed, the squelch facility switched on and the audiofrequency output level measured again.
B	With the squelch facility switched off again, a test signal modulated by the normal test modulation shall be applied to the receiver input at a level of +6 dB μ V (e.m.f.) and the receiver shall be set to produce 50 % of the rated output power. The level of the input signal shall then be reduced and the squelch facility shall be switched on. The input signal shall then be increased until the above-mentioned output power is reached. The SINAD ratio and the input level shall then be measured.
C	(Applicable only to equipment with continuously adjustable squelch control.) With the squelch facility switched off, a test signal with normal test modulation shall be applied to the receiver input at a level of +6 dB μ V (e.m.f.), and the receiver shall be adjusted to give 50 % of the rated audio output power. The level of the input signal shall then be reduced and the squelch facility shall be switched on at its maximum position and the level of the input signal increased until the output power again is 50 % of the rated audio output power.

Table 56 - Details of steps for results recorded below

Step A	Step B		Step C
Audio frequency Output Power (dB)	Input Level (dB μ V)	SINAD (dB)	Input Level (dB μ V)
-122	-4.9	24.0	2.4

Table 57 - Squelch Operation Results



IEC 61097-12, Limit Clause 5.5.12.3

Under the conditions specified in 5.5.12.2 a), the audio frequency output power shall not exceed –40 dB relative to the rated output power.

Under the conditions specified in 5.5.12.2 b), the input level shall not exceed +6 dBμV (e.m.f.) and the SINAD ratio shall be at least 20 dB.

Under the conditions specified in 5.5.12.2 c), the input signal shall not exceed +6 dBμV (e.m.f.) when the control is set at maximum.

2.25.7 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
Signal Generator	Rohde & Schwarz	SMY 01	118	12	21-Feb-2026
Audio Analyser	Hewlett Packard	8903B	576	12	04-Feb-2026
Power Splitter	Weinschel	1506A	606	12	03-Jan-2026
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	24-Feb-2026
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
Coaxial Fixed Attenuator DC-18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6179	12	11-Oct-2025
Multimeter	Fluke	115	6343	12	27-Feb-2026

Table 58

O/P Mon – Output Monitored using calibrated equipment



2.26 Squelch Hysteresis

2.26.1 Specification Reference

IEC 61097-12, Clause 5.5.13

2.26.2 Equipment Under Test and Modification State

SR303, S/N: S24070003 - Modification State 3

2.26.3 Date of Test

30-April-2025

2.26.4 Test Method

This test was performed in accordance with IEC 61097-12, clause 5.5.13.2.

2.26.5 Environmental Conditions

Ambient Temperature 24.6 °C
Relative Humidity 39.4 %

2.26.6 Test Results

Input Level (dBµV e.m.f.)		Difference (dB)
Squelch Open	Squelch Closed	
-115.0	-119.1	4.1

Table 59 - Squelch Hysteresis

IEC 61097-12, Limit Clause 5.5.12.3

The squelch hysteresis shall be between 3 dB and 6 dB.



2.26.7 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 Splitter	Weinschel	1506A	606	12	03-Jan-2026
Vector Signal Generator	Keysight Technologies	ESG E4438C	4731	12	20-May-2025
Quad Power Supply	Rohde & Schwarz	HMP4040	4954	-	O/P Mon
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB 40	5604	12	26-Nov-2025
Coaxial Fixed Attenuator DC-18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6179	12	11-Oct-2025
GPSDR Frequency standard	Orolia	SecureSync 2402-053	6339	6	18-Sep-2025
Multimeter	Fluke	115	6343	12	27-Feb-2026
Termination, N-Type(M) 10W, DC-3GHz	Aaren	AT40T-10E03	6565	12	19-Jun-2025

Table 60

O/P Mon – Output Monitored using calibrated equipment

3 Photographs

3.1 Equipment Under Test (EUT)



Figure 17 - SR303 – Front View



Figure 18 - SR303 – Rear View

4 Measurement Uncertainty

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

Test Name	Measurement Uncertainty
Frequency Error	± 11 Hz
Effective Radiated Power	± 3.0 dB
Carrier Power Referenced to ERP	± 1.0 dB
Frequency Deviation	$\pm 1.73\%$
Limitation Characteristics of the Modulator	$\pm 1.73\%$
Sensitivity of the Modulator, including Microphone	± 88.5 Hz
Audio Frequency Response	± 1.5 dB
Audio Frequency Harmonic Distortion of the Emission	$\pm 14.12\%$
Adjacent Channel Power	± 3.0 dB
Conducted Spurious Emissions Conveyed to the Antenna (Transmitter)	± 3.5 dB
Residual Modulation of the Transmitter	± 1.0 dB
Transient Frequency Behaviour of the Transmitter	± 0.2 kHz
Harmonic Distortion and Rated Audio Frequency Output Power	± 2.0 dB
Audio Frequency Response	± 2.0 dB
Maximum Usable Sensitivity	± 1.8 dB
Co-channel Rejection	± 2.6 dB
Adjacent Channel Selectivity	± 2.6 dB
Spurious Response Rejection	± 2.6 dB
Intermodulation Response	± 2.6 dB
Blocking or Desensitization	± 2.6 dB
Conducted Spurious Emissions Conveyed to the Antenna (Receiver)	± 3.5 dB
Amplitude Response of the Receiver Limiter	± 2.0 dB
Receiver Noise and Hum	± 1.8 dB
Squelch Operation	$= -40$ dB: ± 0.4 dB $= +6$ dB μ V emf: ± 2.1 dB
Squelch Hysteresis	± 1.8 dB

Table 61



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.