

Test Report

Prepared for: Icom Inc.

Model: IC-A120

Description: VHF Mobile Transceiver

Serial Number: 34000211

FCC ID: AFJ369720
ISED ID:202D-369720

To

FCC Part 87
ISED RSS-141 issue 2 (June 2010)

Date of Issue: April 21, 2026

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Greg Corbin
Project Test Engineer

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Test Results Summary

Specification		Test Name	Pass, Fail, N/A	Comments
FCC	ISED			
2.1046 87.131	RSS-141 section 5.1, Table 1	Power and Emissions	Pass	
2.1051 87.139(a)(3)	RSS-141 section 5.2.2(c)	Emissions Limitations (Transmitter Conducted)	Pass	
2.1053 87.139(a)(3)	RSS-141 section 5.2.2(c)	Emissions Limitations (Transmitter Radiated)	Pass	
2.1049 87.139(a)	RSS-141 section 5.2.2	Emission Masks	Pass	
2.1047	N/A	Audio Low Pass Filter Frequency Response	Pass	
2.1047 87.141	RSS-141 section 5.1, Table 1	Modulation Limiting	Pass	
2.1049 87.135	RSS-141 section 5.1, Table 1	Occupied Bandwidth	Pass	
2.1055 87.133(a)	RSS-141 section 5.1, Table 1	Frequency Stability (Temperature Variation)	Pass	
2.1055 87.133(a)	RSS-141 section 5.1, Table 1	Frequency Stability (Voltage Variation)	Pass	
87.137	RSS-141 section 5.1, Table 1	Types of Emission	Pass	

Statements of conformity are reported as:

- Pass - the measured value is below the acceptance limit, *acceptance limit = test limit*.
- Fail - the measured value is above the acceptance limit, *acceptance limit = test limit*.

References/Methods	Description
ANSI C63.4-2014	Method and Measurements of Radio-Noise Emissions from low-Voltage Electrical and Electronic Equipment in the range 9kHz to 40GHz.
ANSI C63.26-2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
ISO/IEC 17025:2017	General requirements for the Competence of Testing and Calibrations Laboratories
RSP-100 Issue 12 (August 2019)	Certification of Radio Apparatus and Broadcasting Equipment
RSS-GEN Issue 5 (April 2018)	General Requirements for Compliance of Radio Apparatus
RSS-141 Issue 2 (June 2010)	Aeronautical Radiocommunication Equipment in the Frequency Band - 117.975-137 MHz
RBR-1 Issue 2 (November 2009)	Technical Requirements for the Operation of Mobile Stations in the Aeronautical Service
FCC CFR Part 87	Aviation Services

Test Report Revision History

Revision	Date	Revised By	Reason for Revision
1.0	April 21, 2026	Greg Corbin	Original Document
2.0	June 4, 2026	Greg Corbin	Updated annex D mask data with wider spectrum analyzer spans

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ANAB

Compliance Testing, LLC, has been accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to the joint ISO-ILAC-IAF Communiqué dated January 2009).

The tests results contained within this test report all fall within our scope of accreditation, unless noted below.

Please refer to <http://www.compliancetesting.com/labscope.html> for current scope of accreditation.



FCC Site Reg. #750616

IC Site Reg. #2044A-2

Test and Measurement Data

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations, Volume II; Part 2, Sub-part J, Sections 2.947, 2.1033(c), 2.1041, 2.1046, 2.1047, 2.1051, 2.1053, 2.1055, 2.1057, ANSI C63.26-2015, the following individual Parts: FCC Part 87. ISSED RSS-Gen, RSS-141.

Standard Test Conditions Engineering Practices

Except as noted herein, the following conditions and procedures were observed during the testing.

In accordance with ANSI/TIA 603C, and unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104°F) unless the particular equipment requirements specified testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

Environmental Conditions		
Temperature (°C)	Humidity (%)	Pressure (mbar)
25.6 – 29.7	27.1 – 30.9	964.5 – 973.3

Measurement results, unless otherwise noted, are worse case measurements.

Video Bandwidth (VBW) statement

For any measurements using the Tektronix RTSA 5126A real time spectrum analyzer (CTL Asset i00424), the following note for VBW (found on page 120 of the RSA5100A user manual) applies to these measurements.

VBW

The VBW setting enables/disables the Video Bandwidth filter. VBW is used in traditional swept analyzers to reduce the effect of noise on the displayed signal. The VBW algorithm in the analyzer emulates the VBW filters of traditional swept analyzers.

The maximum VBW value is the current RBW setting. The minimum VBW value is 1/10,000 of the RBW setting. VBW is disabled when the Filter shape is set to CISPR.

NOTE. If you are following a procedure that says to "set VBW to three times the RBW value or greater", it means that the test should be conducted with no VBW effects. In the analyzer, this condition is met by disabling the VBW function.

Screen captures recorded using the real time spectrum analyzer can be identified by the Tek RSA5100A logo in the top left corner of the screen.

For all measurements the VBW filter was turned off when using the RTSA 5126A spectrum analyzer.

EUT Description

Model:	IC-A120
Serial:	24094219
Firmware:	CPU version 1.05
HVIN	369720-01
PMN	369720-01
UPN	369720-01
FVIN	N/A
Description:	VHF Mobile Radio
Additional Information:	The IC-A120 is a 10 watt VHF mobile radio used for ground communication. The radio operates from 118.000 – 136.9916 MHz with 8.33 kHz / 25 kHz channel spacing using AM modulation
Power	13.75 or 28.5 volts DC The EUT was tested with 13.75 vdc and 28.5 vdc.
Receipt of	August 22,2025
EUT Condition:	Visual Damage No State of Development Production/Production Equivalent

Emission Designators

Channel Spacing	FCC Designator	IC Designator
8.33 kHz	5K60A3E	5K60A3E
25 kHz	6K00A3E	6K00A3E

Test Frequencies

Channel BW (kHz)	8.333	25	8.333	25	8.333	25
VHF Freq entered on front panel display (MHz)	118.030	118.025	127.530	127.525	136.975	136.975
VHF Actual Test Freq (MHz)	118.025	118.025	127.525	127.525	136.975	136.975

Note:

When selecting the 8.33 kHz CH spacing, the radio front panel display is set 5 kHz higher than the desired frequency.

For example:

To select 118.025 MHz with 8.33 kHz CH spacing set the radio to 118.030 MHz.

If 118.025 MHz is selected the radio will operate at 118.025 with a 25 kHz CH spacing.

EUT Operation during Tests

The EUT was operated under normal operating conditions at maximum output power.

The Frequency and Channel Spacing was selected from the radio front panel display.

The radio can be powered at either 13.75 vdc or 28.5 vdc. The radio was tested with 13.75 vdc and 28.5 vdc.

Output Power (Conducted)

Engineer: Greg Corbin

Test Date: 4/8/2026

Test Procedure

The EUT was connected to the spectrum analyzer thru a 20 dB high power attenuator. The insertion loss for the cables and high power attenuator was input the spectrum analyzer as correction factors before the final measurement was recorded. Output Power was recorded for both 13.75 vdc and 27.5 vdc input voltages.

Detector = Peak, max hold

RBW = 100 kHz

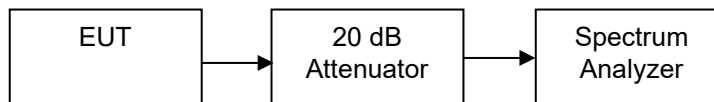
VBW = 300 kHz

FCC Limit = 10 watts

ISED Limit = 20 watts

Mfr rated power = 10 watts (42.55 dBm)

Test Set-up



Output Power Test Summary Tables

CH BW = 8.33 kHz

Tuned Frequency	Input Voltage	Measured Power	Measured Power	ISED Limit	FCC Limit	Result
MHz	vdc	dBm	W	W	W	Pass / Fail
118.025	13.75	39.86	9.683	20	10	Pass
127.525	13.75	39.89	9.750	20	10	Pass
136.975	13.75	39.93	9.840	20	10	Pass
118.025	27.5	39.86	9.683	20	10	Pass
127.525	27.5	39.91	9.795	20	10	Pass
136.975	27.5	39.97	9.931	20	10	Pass

CH BW = 25kHz

Tuned Frequency	Input Voltage	Measured Power	Measured Power	ISED Limit	FCC Limit	Result
MHz	vdc	dBm	W	dBm	W	Pass / Fail
118.025	13.75	39.89	9.750	20	10	Pass
127.525	13.75	39.91	9.795	20	10	Pass
136.975	13.75	39.95	9.886	20	10	Pass
118.025	27.5	39.87	9.705	20	10	Pass
127.525	27.5	39.92	9.817	20	10	Pass
136.975	27.5	39.98	9.954	20	10	Pass

Annex A Output Power

Refer to Annex A for Output Power plots.

Conducted Spurious Emissions

Engineer: Greg Corbin

Test Date: 4/9/2026

Test Procedure

The EUT was connected as shown in the test setup. The frequency of investigation was 30 MHz to 1.5 GHz. Conducted spurious emissions was measured with the EUT set to 8.33 kHz and 25 kHz channel spacing with 13.75 and 27.5 vdc input voltages.

The transmitter was modulated with a 2500 Hz sinusoidal signal at a level sufficient to produce 50% modulation. The level of the input modulation signal is then increased by 16 dB.

For 30 - 1000 MHz, the range was split into 2 bands 30 - 200 MHz and 200 - 1000 MHz.

For 30 - 200 MHz, a notch filter (i00771) was used for 118 MHz and (i00692) for 127 and 136 MHz.

For 200 - 1000 MHz a HP filter (i00772) was used in the test set-up.

For 1 - 1.5 GHz used HP filter (i00432) was used in the test set-up.

RBW = 3 kHz

Detector = Peak, max hold

Trace points = 64000

A peak detector set to max hold was used to show the worst case emissions.

Any emissions within 10 dB of the limit would be measured with an average detector.

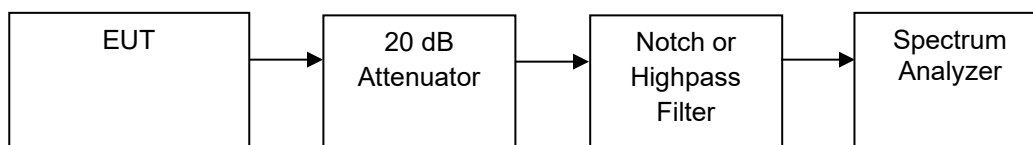
There were no spurious emissions within 10 dB of the limit so only a peak detector was used.

Per FCC Part 87.139(a)(3) and RSS-141 section 5.2.2(c),

When the frequency is removed from the equipment's channel centre frequency by more than 250% the attenuation for ground transmitters shall be at least $43 + 10 \log_{10} P$ (in watts) dB, measured with a bandwidth of 3 kHz.

Note: for the 30 – 200 MHz plots, the marker (MR) is the fundamental transmit frequency and is exempt from the conducted spurious emissions limit of -13 dBm.

Test Setup



Freq range	Channel BW	Input Voltage	Tuned Frequency	Conducted Spurious		Limit	Margin	Result
				Frequency	Level			
MHz	kHz	VDC	MHz	MHz	dBm	dBm	dB	
30 – 200	8.33	13.75	118.025	123.675	-50.4	-13	-37.4	Pass
30 – 200	8.33	27.5	118.025	118.392	-49.7	-13	-36.7	Pass
30 – 200	25	13.75	118.025	156.424	-46.0	-13	-33	Pass
30 – 200	25	27.5	118.025	118.392	-47.8	-13	-34.8	Pass
30 – 200	8.33	13.75	127.525	141.275	-50.2	-13	-37.2	Pass
30 – 200	8.33	27.5	127.525	113.775	-51.4	-13	-38.4	Pass
30 – 200	25	13.75	127.525	113.775	-51.0	-13	-38	Pass
30 – 200	25	27.5	127.525	113.775	-50.7	-13	-37.7	Pass

Conducted Spurious Emissions Summary Table, cont'd

Freq range	Channel BW	Input Voltage	Tuned Frequency	Conducted Spurious		Limit	Margin	Result
				Frequency	Level			
MHz	kHz	VDC	MHz	MHz	dBm	dBm	dB	
30 – 200	8.33	13.75	136.975	131.824	-49.3	-13	-36.3	Pass
30 – 200	8.33	27.5	136.975	131.824	-48.4	-13	-35.4	Pass
30 – 200	25	13.75	136.975	131.824	-49.0	-13	-36	Pass
30 – 200	25	27.5	136.975	131.824	-48.7	-13	-35.7	Pass
200 - 1000	8.33	13.75	118.025	354.075	-50.0	-13	-37	Pass
200 - 1000	8.33	27.5	118.025	354.075	-50.7	-13	-37.7	Pass
200 - 1000	25	13.75	118.025	354.075	-49.6	-13	-36.6	Pass
200 - 1000	25	27.5	118.025	354.075	-47.0	-13	-34	Pass
200 - 1000	8.33	13.75	127.525	382.575	-51.7	-13	-38.7	Pass
200 - 1000	8.33	27.5	127.525	382.575	-52.1	-13	-39.1	Pass
200 - 1000	25	13.75	127.525	382.575	-49.1	-13	-36.1	Pass
200 - 1000	25	27.5	127.525	382.575	-49.1	-13	-36.1	Pass
200 - 1000	8.33	13.75	136.975	410.925	-52.4	-13	-39.4	Pass
200 - 1000	8.33	27.5	136.975	410.925	-52.3	-13	-39.3	Pass
200 - 1000	25	13.75	136.975	410.925	-49.4	-13	-36.4	Pass
200 - 1000	25	27.5	136.975	410.925	-49.9	-13	-36.9	Pass
1000 - 1500	8.33	13.75	118.025	1062.226	-73.0	-13	-60	Pass
1000 - 1500	8.33	27.5	118.025	1062.226	-72.3	-13	-59.3	Pass
1000 - 1500	25	13.75	118.025	1062.226	-70.2	-13	-57.2	Pass
1000 - 1500	25	27.5	118.025	1062.226	-69.4	-13	-56.4	Pass
1000 - 1500	8.33	13.75	127.525	1147.726	-69.7	-13	-56.7	Pass
1000 - 1500	8.33	27.5	127.525	1147.726	-69.8	-13	-56.8	Pass
1000 - 1500	25	13.75	127.525	1147.726	-68.1	-13	-55.1	Pass
1000 - 1500	25	27.5	127.525	1147.726	-68.0	-13	-55	Pass
1000 - 1500	8.33	13.75	136.975	1095.796	-68.9	-13	-55.9	Pass
1000 - 1500	8.33	27.5	136.975	1095.796	-69.0	-13	-56	Pass
1000 - 1500	25	13.75	136.975	1095.796	-67.0	-13	-54	Pass
1000 - 1500	25	27.5	136.975	1095.796	-65.0	-13	-36.3	Pass

Annex B Conducted Spurious Emission

Refer to Annex B for Conducted Spurious Emission plots.

Radiated Spurious Emissions

Engineer: Greg Corbin

Test Date: 4/14/2026

Test Procedure

The EUT was tested in a semi-anechoic chamber with the turntable set 3m from the receiving antenna. A spectrum analyzer was used to verify that the EUT met the requirements for Radiated Emissions. The EUT was tested by rotating it 360 degrees with the antenna in both the vertical and horizontal orientation while raised from 1 to 4 meters to ensure that the signal levels were maximized. All cable and antenna correction factors were input into the spectrum analyzer ensuring an accurate measurement with the resultant power in dBm. The EUT output was terminated into a 50 Ohm non-radiating load. The frequency of investigation was from 30 MHz to 1.5 GHz.

The transmitter was modulated with a 2500 Hz sinusoidal signal at a level sufficient to produce 50% modulation. The level of the input modulation signal is then increased by 16 dB.

The radiated spurious emissions will not be impacted by channel spacing. 8.33 kHz channel spacing was used for all measurements.

Radiated spurious emissions was measured with the input voltages set to 13.75 vdc and 27.5 vdc

RBW = 100 kHz for 30 – 1000 MHz.

RBW = 1 MHz from 1 – 1.5 GHz

Detector = Peak, max hold

Limit = $43 + 10 \log_{10} P$ (in watts) dB = -13 dBm

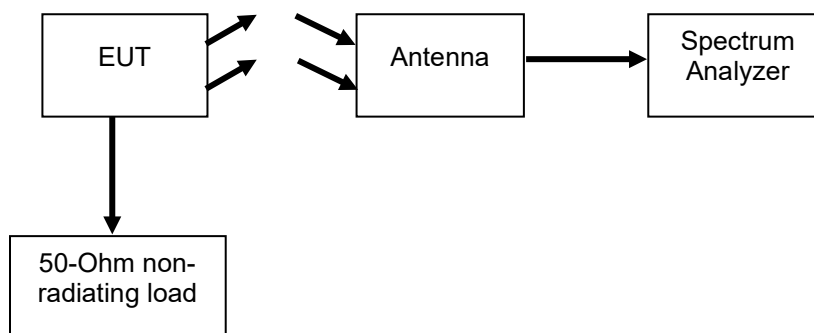
A peak detector set to max hold was used to show the worst case emissions.

Any emissions within 10 dB of the limit would be measured with an average detector.

There were no spurious emissions within 10 dB of the limit so only a peak detector was used.

On the 30 – 1000 MHz plots in Annex C, marker 1 is marking the fundamental signal which is exempt from the radiated spurious measurement.

Test Setup



Radiated Spurious Emission Summary Tables

Freq range	Channel BW	Input Voltage	Tuned Frequency	RX Antenna Polarity	Conducted Spurious		Limit	Margin	Result
					Frequency	Level			
MHz	kHz	VDC	MHz	H / V	MHz	dBm	dBm	dB	
30 – 1000	8.33	13.75	118.025	H	236.07	-34.4	-13	-21.4	Pass
30 – 1000	8.33	13.75	118.025	V	236.07	-39.9	-13	-26.9	Pass
30 – 1000	8.33	27.5	118.025	H	236.07	-38.3	-13	-25.3	Pass
30 – 1000	8.33	27.5	118.025	V	236.07	-41.7	-13	-28.7	Pass
30 – 1000	8.33	13.75	127.525	H	255.05	-33.8	-13	-20.8	Pass
30 – 1000	8.33	13.75	127.525	V	255.05	-35.4	-13	-22.4	Pass
30 – 1000	8.33	27.5	127.525	H	255.05	-33.7	-13	-20.7	Pass
30 – 1000	8.33	27.5	127.525	V	255.05	-33.9	-13	-20.9	Pass
30 – 1000	8.33	13.75	136.975	H	273.96	-34.4	-13	-21.4	Pass
30 – 1000	8.33	13.75	136.975	V	273.96	-40.7	-13	-27.7	Pass
30 – 1000	8.33	27.5	136.975	H	273.96	-33.6	-13	-20.6	Pass
30 – 1000	8.33	27.5	136.975	V	273.96	-38.8	-13	-25.8	Pass
1000 - 1500	8.33	13.75	118.025	H	1180.206	-39.6	-13	-26.6	Pass
1000 - 1500	8.33	13.75	118.025	V	1062.252	-36.5	-13	-23.5	Pass
1000 - 1500	8.33	27.5	118.025	H	1180.206	-38.5	-13	-25.5	Pass
1000 - 1500	8.33	27.5	118.025	V	1062.252	-36.3	-13	-23.3	Pass
1000 - 1500	8.33	13.75	127.525	H	1147.688	-34.3	-13	-21.3	Pass
1000 - 1500	8.33	13.75	127.525	V	1147.688	-34.9	-13	-21.9	Pass
1000 - 1500	8.33	27.5	127.525	H	1147.688	-34.0	-13	-21	Pass
1000 - 1500	8.33	27.5	127.525	V	1147.688	-34.7	-13	-21.7	Pass
1000 - 1500	8.33	13.75	136.975	H	1232.774	-33.1	-13	-20.1	Pass
1000 - 1500	8.33	13.75	136.975	V	1095.720	-35.7	-13	-22.7	Pass
1000 - 1500	8.33	27.5	136.975	H	1232.774	-33.7	-13	-20.7	Pass
1000 - 1500	8.33	27.5	136.975	V	1095.720	-35.9	-13	-22.9	Pass

Annex C Radiated Spurious Emission

Refer to Annex C for Radiated Spurious Emission plots.

Emission Mask

Engineer: Greg Corbin

Test Date: 4/8/2026

Test Procedure

The EUT was connected directly to a spectrum analyzer to verify that the EUT meets the required emissions mask requirements of 87.139(a) and RSS-141 section 5.2.2.

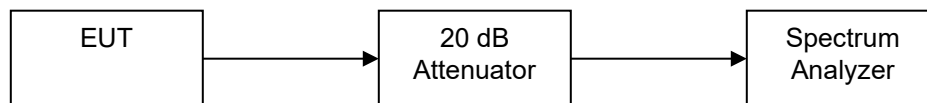
The transmitter was modulated with a 2500 Hz sinusoidal signal at a level sufficient to produce 50% modulation. The level of the input modulation signal is then increased by 16 dB.

The emission mask was recorded for 8.33 kHz and 25 kHz channel spacing and with the dc input voltage set to 13.75 and 27.5 vdc.

RBW = 300 Hz

Detector = Peak, max hold

Test Setup



All emissions met the required emission masks. Refer to Annex D for details.

Annex D Emission Mask

Refer to Annex D for Emission mask plots.

Audio Low Pass Filter Frequency Response

Engineer: Greg Corbin

Test Date: 4/9/2026

Test Procedure

The equipment was set up as shown. The audio frequency was input into the EUT test fixture attached to the front panel ethernet port.

With the audio frequency set to 1 kHz the amplitude was adjusted to set the modulation depth to 60%.

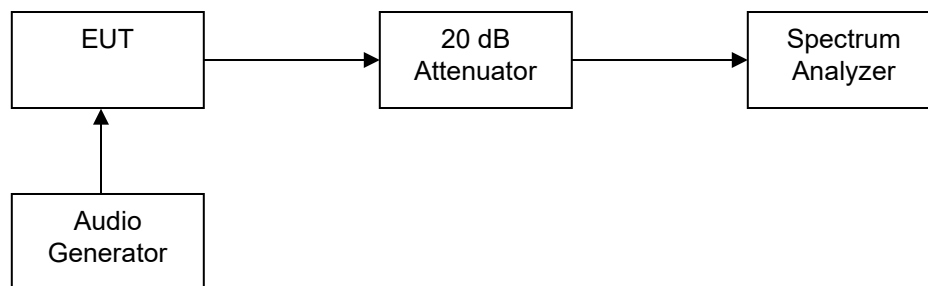
The demodulated audio frequency was measured using the spectrum analyzer audio analysis tool.

The audio frequency was swept from 100 Hz to 5 kHz and the demodulated output was recorded.

Audio lowpass filter Frequency Response was measured using the 8.33 kHz channel spacing with the dc input voltage set to 13.75 and 27.5 vdc.

The RF input freq = 127.525 MHz

Test Setup



Audio Low Pass Filter Frequency Response test data

Frequency kHz	13.75 vdc		25.75 vdc	
	Attenuation dB	Attenuation – referenced to 1 kHz dB	Attenuation dB	Attenuation – referenced to 1 kHz dB
0.1	-23.2	-15.4	-22.1	-14.3
0.2	-12.8	-5	-12.9	-5.1
0.3	-9.9	-2.1	-9.9	-2.1
0.4	-8.6	-0.8	-8.2	-0.4
0.5	-7.7	0.1	-7.3	0.5
0.6	-7.2	0.6	-6.9	0.9
0.7	-7.1	0.7	-7	0.8
0.8	-7.3	0.5	-7.2	0.6
0.9	-7.5	0.3	-7.5	0.3
1	-7.8	0	-8.1	-0.3
1.1	-8	-0.2	-8.3	-0.5
1.2	-8.2	-0.4	-8.5	-0.7
1.3	-8.4	-0.6	-8.5	-0.7
1.4	-8.6	-0.8	-8.7	-0.9
1.5	-8.9	-1.1	-8.9	-1.1
1.6	-9.3	-1.5	-9.2	-1.4
1.7	-9.7	-1.9	-9.6	-1.8
1.8	-10.1	-2.3	-10	-2.2
1.9	-10.4	-2.6	-10.3	-2.5
2	-10.5	-2.7	-10.5	-2.7
2.2	-10.6	-2.8	-10.6	-2.8
2.4	-10.7	-2.9	-10.7	-2.9
2.6	-15.1	-7.3	-15	-7.2
2.8	-26.9	-19.1	-26.9	-19.1
3	-37	-29.2	-36.9	-29.1
3.2	-45.3	-37.5	-45.2	-37.4
3.4	-52.6	-44.8	-52.6	-44.8
3.6	-59.8	-52	-59.6	-51.8
3.8	-65.5	-57.7	-65.5	-57.7
4	-70.4	-62.6	-70.3	-62.5
4.2	-75	-67.2	-75	-67.2
4.4	-79.4	-71.6	-79.4	-71.6
4.6	-83.6	-75.8	-83.6	-75.8
4.8	-88	-80.2	-87.8	-80
5	-91	-83.2	-91.7	-83.9

Modulation Limiting

Engineer: Greg Corbin

Test Date: 4/9/2026

Test Procedure

The equipment was set up as shown. The audio frequency was input into the EUT test fixture attached to the front panel ethernet port.

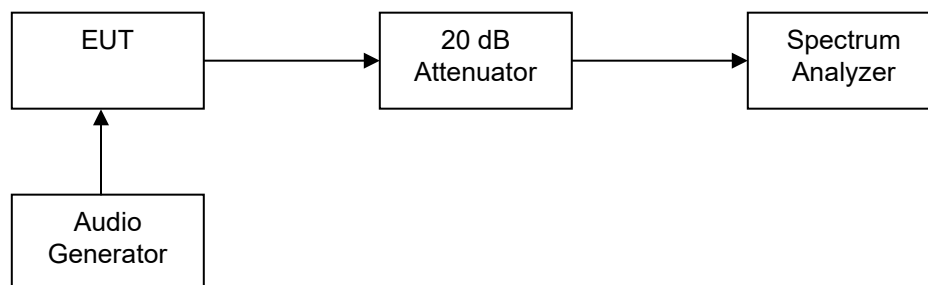
The audio signal was varied from 1 mV to 2.5 v and the modulation limiting was recorded across the frequency range of 0.1 – 5 kHz.

The modulation Limiting was measured using the 8.33 kHz channel spacing with the dc input voltage set to 13.75 and 27.5 vdc.

The RF input freq = 127.525 MHz

The modulation limiting was measured using the audio summary tool on the spectrum analyzer.

Test Setup



Modulation Limiting test results

DC Power = 13.75 vdc

Input Voltage (mVpeak)	Frequency (kHz)					
	0.1	0.5	1	3	3	5
Modulation Limiting (%)						
1	7.9	28.5	27.8	21	3.7	3.4
10	28.7	90.3	90.7	66.8	4.1	1.5
20	31.3	89.7	90.4	66.6	3.7	0.6
50	31.1	89.3	90.2	66.6	3.6	0.3
100	31.1	89	89.9	66.5	3.6	0.2
200	29.6	88.8	89.9	66.5	3.6	0.2
300	28.5	89.9	89.8	66.5	3.6	0.2
400	27.8	89	89.9	66.5	3.5	0.2
500	27.5	88.9	90	66.6	3.6	0.2
1000	24.8	89.3	90.1	66.6	3.6	0.2
1500	23.3	90	90.3	66.6	3.6	0.2
2000	21.2	92.8	91.9	68.7	3.7	0.3
2500	25.4	98.9	95.5	71.6	4.1	0.6

DC Power = 27.5 vdc

Input Voltage (mVpeak)	Frequency (kHz)					
	0.1	0.5	1	3	3	5
Modulation Limiting (%)						
1	9	28.1	27.5	20.8	4.8	4.2
10	32	90.3	91.1	66.9	4.2	1.3
20	33.9	89.4	90.6	66.8	3.8	0.5
50	34.5	89	90.2	66.7	3.7	0.2
100	33.5	88.8	90	66.7	3.6	0.2
200	31.9	88.5	89.9	66.6	3.6	0.2
300	30.8	88.4	89.9	66.7	3.5	0.2
400	30	88.4	89.9	66.7	3.5	0.2
500	29.4	88.5	89.9	66.7	3.5	0.2
1000	26.4	88.8	90	66.7	3.5	0.2
1500	24.5	89.6	90.1	66.7	3.6	0.2
2000	23	92.2	91.5	68.9	3.7	0.3
2500	27.8	98.1	95.1	71.7	4	0.6

Occupied Bandwidth

Engineer: Greg Corbin

Test Date: 4/8/2026

Test Procedure

The equipment was set up as shown.

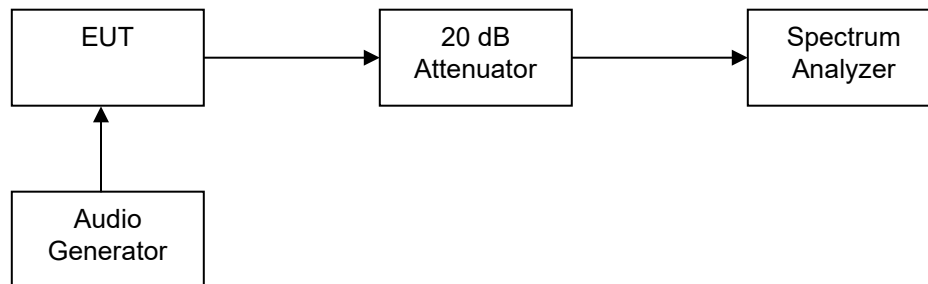
The 99% and -26 dB bandwidth were recorded.

The RBW was selected to be within 1% to %5 of the OCC BW.

A 2500 Hz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation was used.

Occupied Bandwidth was measured with the EUT set to 8.33 kHz and 25 kHz channel spacing and with 13.75 and 27.5 vdc input voltages.

Test Setup



Frequency MHz	Channel Spacing kHz	Input Voltage vdc	Occupied BW		Result
			99% kHz	-26 dB kHz	
118.025	8.33	13.75	5.40	5.56	Pass
127.525	8.33	13.75	5.42	5.58	Pass
136.975	8.33	13.75	5.41	5.57	Pass
118.025	8.33	27.5	5.40	5.55	Pass
127.525	8.33	27.5	5.43	5.60	Pass
136.975	8.33	27.5	5.40	5.57	Pass
118.025	25	13.75	5.44	5.59	Pass
127.525	25	13.75	5.45	5.61	Pass
136.975	25	13.75	5.44	5.60	Pass
118.025	25	27.5	5.44	5.58	Pass
127.525	25	27.5	5.44	5.59	Pass
136.975	25	27.5	5.44	5.60	Pass

Annex E Occupied Bandwidth

Refer to Annex E for Occupied Bandwidth plots.

Frequency Stability (Temperature Variation)

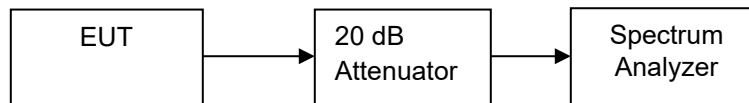
Engineer: Greg Corbin

Test Date: 4/14/2026

Test Procedure

The EUT was placed in an environmental test chamber and the RF output was connected directly to a spectrum analyzer. The frequency counter function on the spectrum analyzer was used to measure the frequency. The temperature was varied from -20°C to 50°C in 10°C increments. After sufficient time for temperature stabilization the RF output frequency was measured. Freq Stability vs. Temperature was measured for both 13.75 vdc and 27.5 vdc input voltages.

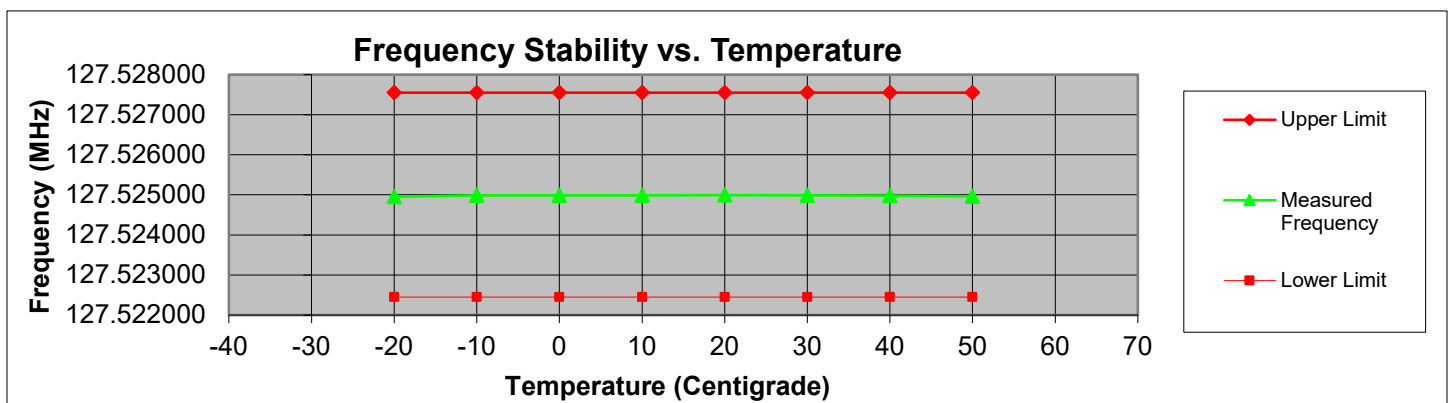
Test Setup



Measurement Results

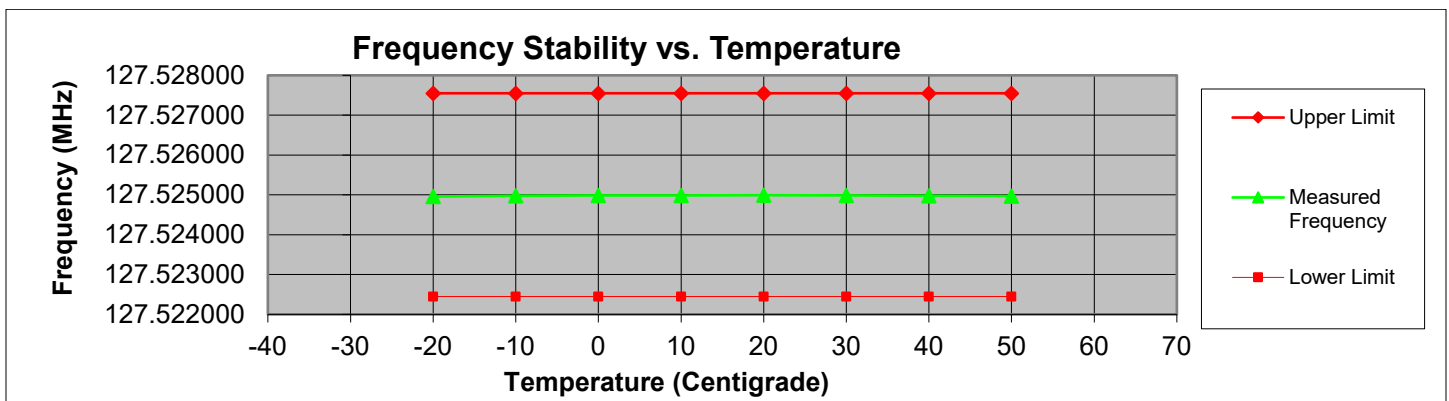
Frequency Stability vs Temperature _ 13.75 vdc

Tuned Frequency	Temperature	Tolerance	Measured Frequency	Upper Limit	Lower Limit	Upper Margin	Lower Margin
MHz	deg C	PPM	MHz	MHz	MHz	MHz	MHz
127.525	-20	20.0	127.524952	127.527551	127.522450	-0.002599	0.002502
127.525	-10	20.0	127.524987	127.527551	127.522450	-0.002564	0.002537
127.525	0	20.0	127.524985	127.527551	127.522450	-0.002566	0.002535
127.525	10	20.0	127.524990	127.527551	127.522450	-0.002561	0.002540
127.525	20	20.0	127.524993	127.527551	127.522450	-0.002558	0.002543
127.525	30	20.0	127.524989	127.527551	127.522450	-0.002561	0.002539
127.525	40	20.0	127.524981	127.527551	127.522450	-0.002570	0.002531
127.525	50	20.0	127.524966	127.527551	127.522450	-0.002584	0.002516



Frequency Stability vs Temperature _ 27.5 vdc

Tuned Frequency	Temperature	Tolerance	Measured Frequency	Upper Limit	Lower Limit	Upper Margin	Lower Margin
MHz	deg C	PPM	MHz	MHz	MHz	MHz	MHz
127.525	-20	20.0	127.524958	127.527551	127.522450	-0.002593	0.002508
127.525	-10	20.0	127.524979	127.527551	127.522450	-0.002572	0.002529
127.525	0	20.0	127.524985	127.527551	127.522450	-0.002566	0.002535
127.525	10	20.0	127.524987	127.527551	127.522450	-0.002564	0.002537
127.525	20	20.0	127.524992	127.527551	127.522450	-0.002559	0.002542
127.525	30	20.0	127.524989	127.527551	127.522450	-0.002561	0.002539
127.525	40	20.0	127.524976	127.527551	127.522450	-0.002575	0.002526
127.525	50	20.0	127.524966	127.527551	127.522450	-0.002584	0.002516



Frequency Stability (Voltage Variation)

Engineer: Greg Corbin

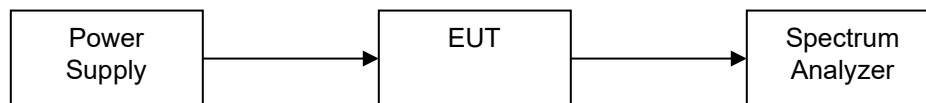
Test Date: 4/14/2026

Test Procedure

The EUT was placed in a temperature chamber at $20\pm5^{\circ}\text{C}$ and connected directly to a spectrum analyzer. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value and the RF output frequency was measured.

Freq Stability vs. Voltage was measured for both 13.75 vdc and 27.5 vdc input voltages.

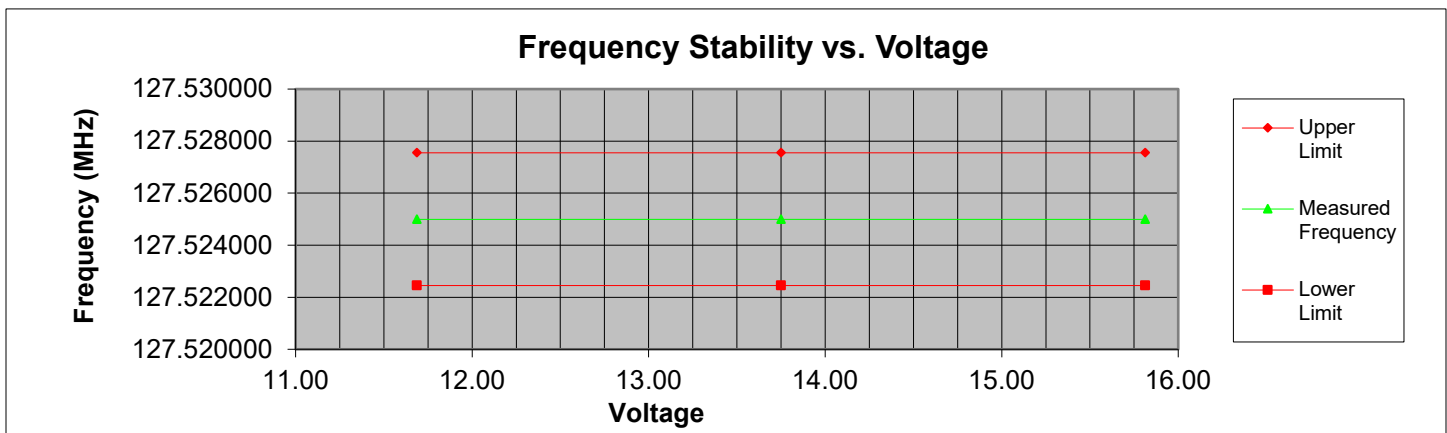
Test Setup



Test Results

Frequency Stability vs Voltage_ 13.75 VDC

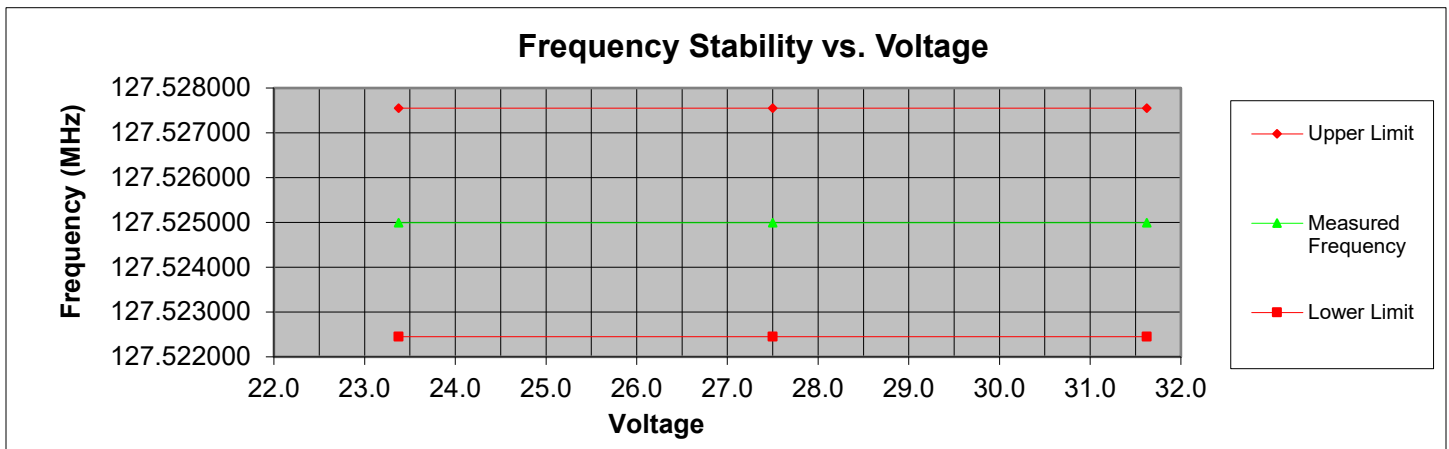
Tuned Frequency	Tolerance	Voltage	Measured Frequency	Upper Limit	Lower Limit	Upper Margin	Lower Margin
MHz	PPM	vdc	MHz	MHz	MHz	MHz	MHz
127.525	20.0	11.69	127.524992	127.527551	127.522450	-0.002559	0.002542
127.525	20.0	13.75	127.524993	127.527551	127.522450	-0.002558	0.002543
127.525	20.0	15.81	127.524992	127.527551	127.522450	-0.002559	0.002542



Test Results

Frequency Stability vs Voltage_ 27.5 VDC

Tuned Frequency	Tolerance	Voltage	Measured Frequency	Upper Limit	Lower Limit	Upper Margin	Lower Margin
MHz	PPM	vdc	MHz	MHz	MHz	MHz	MHz
127.525	20.0	23.38	127.524992	127.527551	127.522450	-0.002559	0.002542
127.525	20.0	27.50	127.524992	127.527551	127.522450	-0.002559	0.002542
127.525	20.0	31.63	127.524992	127.527551	127.522450	-0.002559	0.002542



Measurement Uncertainty

Measurement Uncertainty (U_{lab}) for Compliance Testing is listed in the table below.

Measurement	U_{lab}
Radio Frequency	$\pm 3.3 \times 10^{-8}$
RF Power, conducted	$\pm .54$ dB
RF Power Density, conducted	± 1.0 dB
Conducted Emissions	± 0.94 dB
Radiated Emissions 9kHz-30MHz	± 2.76 dB
Radiated Emissions 30MHz-1000MHz	± 4.25 dB
Radiated Emissions – 1GHz-18GHz	± 4.49 dB
Temperature	± 1.5 deg C
Humidity	± 4.3 %
DC voltage	± 0.20 VDC
AC Voltage	± 1.2 VAC

The reported expanded uncertainty $\pm U_{lab}$ (dB) has been estimated at a 95% confidence level ($k=2$)

U_{lab} is less than or equal to U_{ETSI} therefore

- Compliance is deemed to occur if no measured disturbance exceeds the disturbance limit
- Non-Compliance is deemed to occur if any measured disturbance exceeds the disturbance limit

Test Equipment Utilized

Description	Manufacturer	Model #	CT Asset #	Last Cal Date	Cal Due Date
Horn Antenna	ARA	DRG-118/A	i00271	8/9/24	8/9/26
Temp./humidity/pressure monitor (Main Lab)	Omega Engineering	iBTHX-W-5	i00686	1/28/26	1/28/27
Data Logger	Fluke	Hydra Data Bucket	i00343	7/1/25	7/1/26
Digital Radio Test Set	Aeroflex	3920B	i00524	Verified on 4/9/2026	
Bi-Log Antenna	Schaffner	CBL 6111D	i00349	2/27/25	2/27/27
Spectrum Analyzer	Textronix	RSA5126A	i00424	7/1/25	7/1/26
3 Meter Semi-Anechoic Chamber	Panashield	3 Meter Semi-Anechoic Chamber	i00428	7/13/23	7/13/26
Highpass Filter (1 GHz)	K&L	7IH40-980/T6000-O/O	i00432	Verified on: 4/9/2026	
Voltmeter	Fluke	179	i00488	6/25/2025	6/25/2026
MXE EMI receiver	Keysight	N9038A	i00552	3/23/2026	3/23/2027
Temperature Chamber	Tenney	Tenney Jr	i00027	NR	
Preamplifier	Eravant	SBB-0115034019-2F2F-E3	i00756	Verified on: 6/17/25	
Preamplifier	COM-Power	PAM-103	i00734	Verified on: 6/18/25	
Tunable Bandstop Filter	K&L Microwave	126061-002	i00771	Verified on: 4/9/26	
Highpass Filter (200 MHz)	K&L Microwave	5LH41-200/T1000-0/0	i00772	Verified on: 4/9/26	
Attenuator, 20 dB, 100W	Weinschel	49-20-34	I00778	Verified on: 4/8/26	

In addition to the above listed equipment standard RF connectors and cables were utilized in the testing of the described equipment. Prior to testing these components were tested to verify proper operation.

END OF TEST REPORT