

Intentional Radiator Test Report

For the

Globalstar, Inc.

RM200M

Tested under

The FCC Rules contained in Title 47 of the CFR, Part 15.247 and ISED RSS-247 Issue 3 for

Digitally Transmitting Sequence

Prepared for:

Globalstar. Inc.

1351 Holiday Square Blvd.

Covington, LA 70433

Prepared By:

H.B. Compliance Solutions

5005 S. Ash Avenue, Suite # A-10

Tempe, Arizona 85282

Reviewed By:

Hoosamuddin Bandukwala

*iNA*RIE

Cert # ATL-0062-E

Engineering Statement: The measurements shown in this report were made in accordance with the procedure indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurement made, the equipment tested is capable of operation in accordance with the requirements of Part 15 of the FCC Rules under normal use and maintenance. All results contained herein relate only to the sample tested.



Report Status Sheet

Revision #	Report Date	Reason for Revision
Ø	June 17, 2024	Initial Issue
1	August 13, 2024	Updated OBW plots



Table of Contents

EXE(CUTIVE SUMMARY	4
1.	Testing Summary	4
EQU	IIPMENT CONFIGURATION	5
1.	Overview	5
2.	Test Facility	6
3.	Description of Test Sample	7
4.	Equipment Configuration	7
1.	Support Equipment	7
2.	Ports and Cabling Information	8
3.	Method of Monitoring EUT Operation	8
4.	Mode of Operation	8
5.	Modifications	8
6.	Disposition of EUT	8
Crite	eria for Un-Intentional Radiators	9
1.	Radiated Emissions	9
	Emissions Tests Calculations	10
Crite	eria for Intentional Radiators	13
1.	Occupied Bandwidth	13
2.	RF Power Output	17
3.	Conducted Spurious Emissions	20
4.	Radiated Spurious Emissions and Restricted Band	28
6.	Emissions At Band Edges	31
7.	Power Spectral Density	33
8.	Test Equipment	36
9.	Measurement Uncertainty	37



EXECUTIVE SUMMARY

1. Testing Summary

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15.247 and RSS-247. All tests were conducted using measurement procedure from ANSI C63.10-2013, FCC Guidance document 558074 D01 v05r02 April 02, 2019, RSS-Gen Issue 5 and RSS-247 Issue 3 as appropriate.

Test Name	Test Method/Standard	ISED Standard	Result	Comments
Unintentional Radiated Emissions	15.109	RSS Gen 7.0	Pass	
A/C Powerline Conducted Emissions	15.207	RSS Gen 8.8	N/A	DC Powered Device
Occupied Bandwidth	15.247(a)(2)	RSS 247 5.1(a)	Pass	
Peak Output Power	15.247(b)	RSS 247 5.4	Pass	
Conducted Spurious Emissions	15.247(d)	RSS 247 5.5	Pass	
Radiated Spurious Emissions & Restricted Band	15.247(d), 15.209(a), 15.205	RSS 247 5.5	Pass	
Emissions at Band Edges	15.247(d), 15.209(a), 15.205	RSS Gen 8.10	Pass	
Power Spectral Density	15.247(e)	RSS 247 5.2(b)	Pass	
Time of Occupancy (Dwell Time)	15.247(a)	RSS 247 5.1(d)	N/A	Digital Transmission System
Number of Hopping Channels	15.247(a)	RSS 247 5.1(a)	N/A	Digital Transmission System
Carrier Frequency Separation	15.247(a)	RSS 247 5.1(b)	N/A	Digital Transmission System



EQUIPMENT CONFIGURATION

1. Overview

H.B Compliance Solutions was contracted by Globalstar to perform testing on the RM200M under the purchase order number 106746.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the Globalstar, RM200M.

The tests were based on FCC Part 15 Rules. The tests described in this document were formal tests as described with the objective of the testing was to evaluate compliance of the Equipment Under Test (EUT) to the requirements of the aforementioned specifications. Globalstar should retain a copy of this document and it should be kept on file for at least five years after the manufacturing of the EUT has been permanently discontinued. The results obtained relate only to the item(s) tested.

Product Name:	RM200M		
Model(s) Tested:	RM200M		
FCC ID:	L2V-RX200M		
IC ID:	3989A-RX200M		
Supply Voltage Input:	Primary Power: +5.0 VDC		
Frequency Range:	2402MHz - 2480MHz		
No. of Channels:	40		
Necessary Bandwidth	N/A		
Type(s) of Modulation:	GFSK (Bluetooth BLE)		
Range of Operation Power:	0.0056W		
Emission Designator:	N/A		
Channel Spacing(s)	None		
Test Item:	Pre-Production		
Type of Equipment:	Mobile		
Antenna Requirement (§15.203):	Type of Antenna: Ceramic SMT		
	Gain of Antenna: 1.3dBi		
Environmental Test Conditions:	Temperature: 15-35°C		
	Humidity: 30-60%		
	Barometric Pressure: 860-1060 mbar		
Modification to the EUT:	None		
Evaluated By:	Staff at H.B. Compliance Solutions		
Test Date(s):	06/05/2024 till 06/10/2024		
Firmware Version Number (FVIN):	0.2.6		



2. Test Facility

All testing was performed at H.B. Compliance Solutions. This facility is located at 5005 S. Ash Avenue, Suite # A-10, Tempe AZ-85282. All equipment used in making physical determination is accurate and bears recent traceability to the National Institute of Standards and Technology.

Radiated Emissions measurements from 30MHz to 1GHz were performed in a GTEM chamber (equivalent to an Open Area Test Site). Radiated Emission above 1GHz were performed on an Open Area Test Site (OATS). In accordance with §2.948(a)(3), a complete site description is contained at H.B. Compliance Solutions.

Test facility H.B. Compliance Solutions is an ANAB accredited test site. The ANAB certificate number is L2458. The scope of accreditation can be found on ANAB website www.anab.org

FCC Registered Number: 738876

ISED Test Site Registration number is 9481A





3. Description of Test Sample

The Globalstar RM200M is a Satellite IoT transceiver module designed to send and receive small packets of user defined data to a network of low earth orbiting (LEO) satellites using the Globalstar commercial IoT network. The data is either received from or forwarded to a user defined network interface that may be in the form of an FTP host, HTTPS host or HTTP host where the user has supplied or will interpret the data for further processing.

The RM200M is designed to be integrated into an integrator's custom carrier board design.

The RM200M consists of the Nordic NRF52840, QSPI Memory, GPS, accelerometer, GCT DSP GDM7243i, GMT PMIC, Quad Flash, OCTA RAM, power controls, and RF Components. There are no onboard antennas. The Nordic and GCT DSP GDM7243i are shielded for modular certification. The RM200M has gold "fingers" around the perimeter of the PCB so that it can be SMT-installed onto a carrier board or another custom PCB.

4. Equipment Configuration

Ref. ID	Name / Description	Model Number	Serial Number
# 1	Globalstar RM200M (Sample #1 For	RM200M	-
	Conducted Testing)		
# 2	Globalstar RM200M (Sample #2 For	RM200M	-
	Radiated Testing)		

Table 1. Equipment Configuration

5. Support Equipment

All support equipment supplied is listed in the following Support Equipment List.

Ref ID	Name / Description	Manufacturer	Model #	Serial #
# 3	Laptop Computer	Acer	Swift SF314	-
# 4	USB to TTL Dongle	DSD Tech	SH-U07A	-

Table 2. Support Equipment



6. Ports and Cabling Information

Ref ID	Port name on the EUT	Cable Description	Qty.	Length (m)	Shielded? (Y/N)	Termination Box ID & Port ID
# 5	Power	2 wire	1	0.15	N	DC Power Supply
# 6	Modem UART	3 wire	1	0.2	N	# 4

Table 3. Ports and Cabling Information

7. Method of Monitoring EUT Operation

A test receiver will be used to monitor the data transmission from the EUT.

8. Mode of Operation

The EUT will be configured to transmit at maximum power level. Customer supplied test tool software (Putty Terminal) that allowed to program the EUT. Test mode was provided to select the lower, middle and upper band of the transmitter. This software allowed the selection of all the channels and to operate in CW and with modulation on. These settings were created for testing purposes only.

9. Modifications

9.1 Modifications to EUT

No modifications were made to the EUT

9.2 Modifications to Test Standard

No Modifications were made to the test standard.

10. Disposition of EUT

The test sample including all support equipment submitted to H.B Compliance Solutions for testing will be returned to Globalstar at the completion of testing & certification.



Criteria for Un-Intentional Radiators

1. Radiated Emissions

Test	§15.109 and RSS Gen	Test Engineer(s):	Sean E.
Requirement(s):	7.0		
Test Results:	Pass	Test Date(s):	June 06, 2024

Test Procedures:

The final radiated emissions test was performed using the parameters described above as worst case. That final test was conducted at a facility that meets the ANSI C63.4 NSA requirements. The frequency range noted in the data sheets was scanned/tested at that facility. Emissions were maximized as specified, by varying table azimuth, antenna height, and manipulating cables.

Using the mode of operation and configuration noted within this report, a final radiated emissions test was performed. The frequency range investigated (scanned), is also noted in this report. Radiated emissions measurements were made at the EUT azimuth and antenna height such that the maximum radiated emissions level will be detected. This requires the use of a turntable and an antenna positioner. The preferred method of a continuous azimuth search is utilized for frequency scans of the EUT field strength with both polarities of the measuring antenna. A calibrated, linearly polarized antenna was positioned at the specified distance from the periphery of the EUT.

Note: The specified distance is the horizontal separation between the closest periphery of the EUT and the center of the axis of the elements of the receiving antenna. However, if the receiving antenna is a log-periodic array, the specified distance shall be the distance between the closest periphery of the EUT and the front-to-back center of the array of elements.

Tests were made with the antenna positioned in both the horizontal and vertical polarization planes. The measurement was varied in height above the conducting ground plane to obtain the maximum signal strength. Though specified in the report, the measurement distance shall be 3 meters. At any measurement distance, the antenna height was varied from 1 meter to 4 meters. These height scans apply for both horizontal and vertical polarization, except that for vertical polarization the minimum height of the center of the antenna shall be increased so that the lowest point of the bottom of the antenna clears the ground surface by at least 25 cm.

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
30 MHz to 1 GHz	120 kHz	120 kHz	N/A
1 GHz to 11 GHz	1MHz	N/A	1MHz

Measurements were made using the bandwidths and detectors specified. The video filter was at least as wide as the IF bandwidth of the measuring receiver.

Table 4. Radiated Emissions – Measurement Bandwidth



Emissions Tests Calculations

In the case of indoor measurements, radiated emissions measurements are made by the manipulation of correction factors using TILE4 software. This is done automatically by the software during the final measurement process.

In both cases, the level of the Field Strength of the interfering signal is calculated by adding the Antenna Factor, Cable Factor and by subtracting the Amplifier Gain from the measured reading. The basic equation is as follows:

$$FS = RA + AF + (CF - AG)$$

Where: FS = Field Strength

RA = Receiver (indicated) Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor

AG = Amplifier Gain

This laboratory uses an approach of combining the CF and AG using an end-to-end measurement of the entire cabling system, including the test cable, any in-line amplifiers, attenuators, or transient protection networks, all measured in-situ.

For a sample calculation, assume a receiver reading of 52.5 dBuV is obtained. With an antenna factor of 7.4 and a combined cable factor (CF + AG) of -27.9:

$$FS = 52.5 + 7.4 + (-27.9) = 32 \text{ dBuV/m}$$

$$FS = 32 dBuV/m$$

If desired, this can be converted into its corresponding level in uV/m:

$$FS = 10^{(32 \text{ dBuV/m})/20} = 39.8 \text{ uV/m}$$



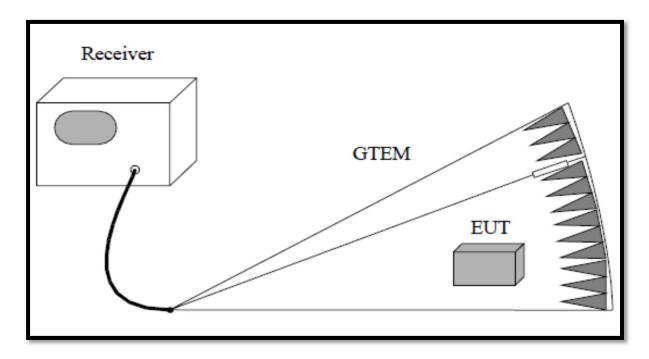
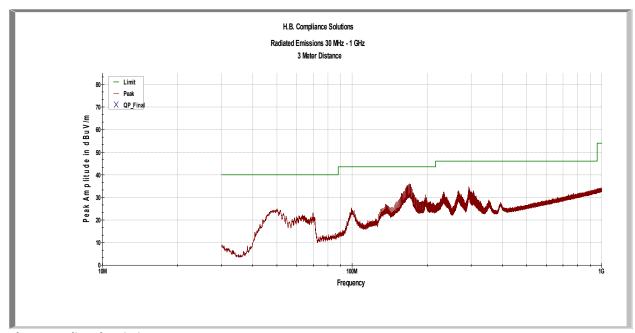
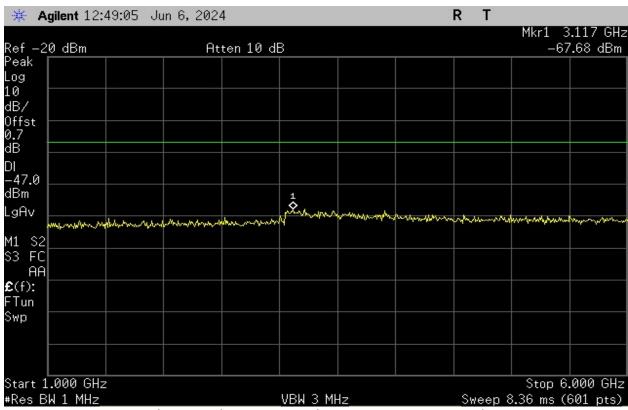


Figure 1. Radiated Emissions Test Setup (30MHz – 1GHz)





Plot 1 - Radiated Emissions - 30MHz to 1GHz



Plot 2 – Receiver Emissions (Conducted) – 1GHz to 6GHz (For Industry Canada RSS-GEN)



Criteria for Intentional Radiators

1. Occupied Bandwidth

Test	15.247(a)(2), ANSI C63.10	Test Engineer(s):	Sean E.
Requirement(s):	and RSS-247 5.1(a)(b)		
Test Results:	Pass	Test Date(s):	June 05, 2024

Test Procedure:

As required by 47 CFR 15.247(a)(2) System using digital modulation techniques may operate in the 902-928MHz, 2400 – 2483.5MHz, and 5725 – 5850MHz bands. The minimum 6dB bandwidth shall be at least 500 kHz.

Customer provided a test mode internal to the EUT to control the RF modulation, and frequency channel. The EUT was connected through an attenuator to a Spectrum Analyzer. The measured highest peak power was set relative to zero dB reference. The RBW of the Spectrum Analyzer was set to 100kHz and VBW>RBW. Measurements were carried out at the low, mid and high channels of the TX band at the output terminals of the EUT.

Test Setup:



Figure 2. Occupied Bandwidth Test Setup



Test Results:

Frequency	Recorded	Specification Limit
(MHz)	Measurement	
2402	592.60 kHz	≥ 500 KHz
2440	619.87 kHz	≥ 500 KHz
2480	642.40 kHz	≥ 500 KHz

Table 5. Occupied Bandwidth Summary, Test Results

Frequency (MHz)	Recorded Measurement (kHz)	Comments
2402	1.08 MHz	None
2440	1.09 MHz	None
2480	1.09 MHz	None

Table 6. 99% Bandwidth, Test Results

The following pages show measurements of Occupied Bandwidth plots:

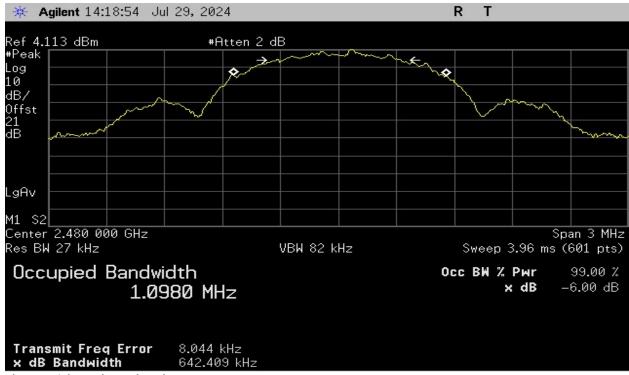




Plot 3 - Lowest Channel - 6dB BW







Plot 5 – Highest Channel – 6dB BW



2. RF Power Output

Test Requirement(s):	§15.247(b)(3 and RSS- 247 5.4(1)	Test Engineer(s):	Sean E.
Test Results:	Pass	Test Date(s):	June 05, 2024

Test Procedures: As required by 47 CFR 15.247(b)(3), RF Power output measurements

were made at the RF output terminals of the EUT

Customer provided a test mode internal to the EUT to control the RF modulation, and frequency channel. The EUT was connected through an

attenuator to a Spectrum Analyzer capable of making power

measurements. Measurements were made at the low, mid, and high

channels of the entire frequency band.

Test Setup:



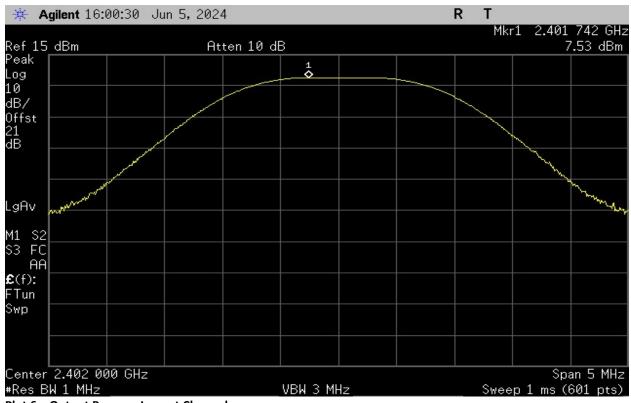
Figure 3. RF Power Test Setup

Test Results:

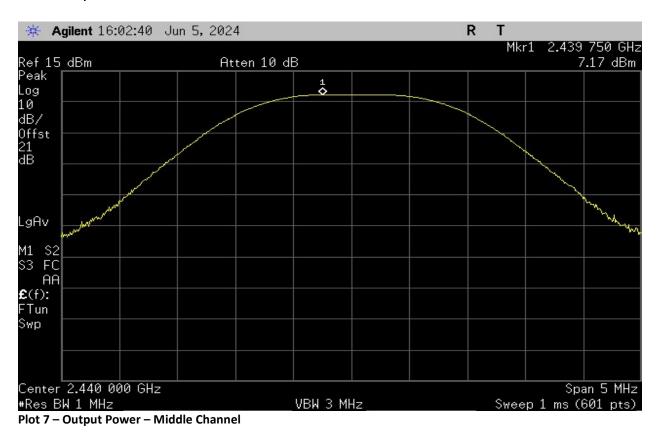
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)	Specification Limit
2402	7.53	0.0056	1W
2440	7.17	0.0052	1W
2480	6.97	0.0049	1W

Table 7. RF Power Output, Test Results

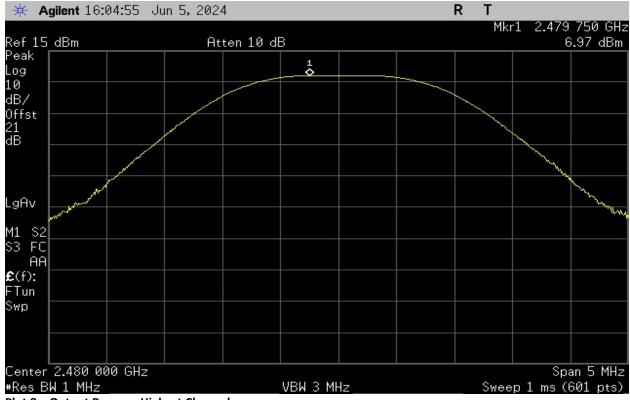












Plot 8 – Output Power – Highest Channel



3. Conducted Spurious Emissions

Test	§15.247(c) and	Test Engineer(s):	Sean E.
Requirement(s):	RSS-247 5.5		
Test Results:	Pass	Test Date(s):	June 06, 2024

Test Procedures:

As required by 47 CFR 15.247(c): In any 100kHz bandwidth the frequency band in which the spread spectrum or digitally modulation intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either and RF conducted or a radiated measurement. Conducted spurious emissions at antenna terminal measurements were made at the RF output antenna terminal of the EUT.

Customer provided a test mode internal to the EUT to control the RF modulation, and frequency channel. The EUT was connected through an attenuator to a Spectrum Analyzer with RBW set to 100kHz and VBW ≥ RBW. The Spectrum Analyzer was set to sweep from 30MHz up to 10th harmonic of the fundamental or 40GHz whichever is the lesser. Measurements were made at the low, mid and high frequency of the transmit band.

Test Setup:



Figure 4. Conducted Spurious Emissions Test Setup



Test Results:

Frequency (MHz)	Measured Level (dBm)	Limit (dBm)
191.8	-70.07	-13.0
4803	-53.69	-13

Table 8. Lowest Channel – Conducted Spurious Emissions, Test Results

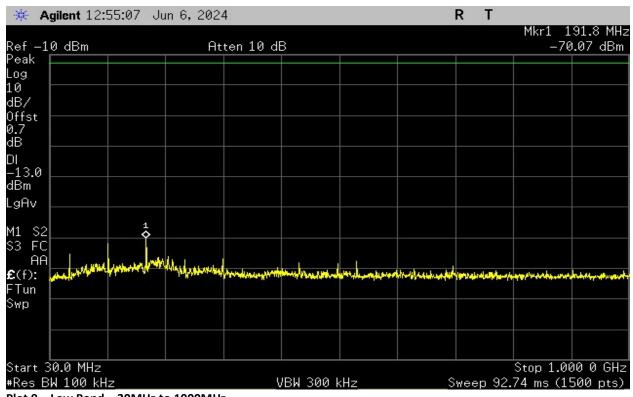
Frequency (MHz)	Measured Level (dBm)	Limit (dBm)
191.8	-70.08	-13.0
4879	-51.50	-13.0

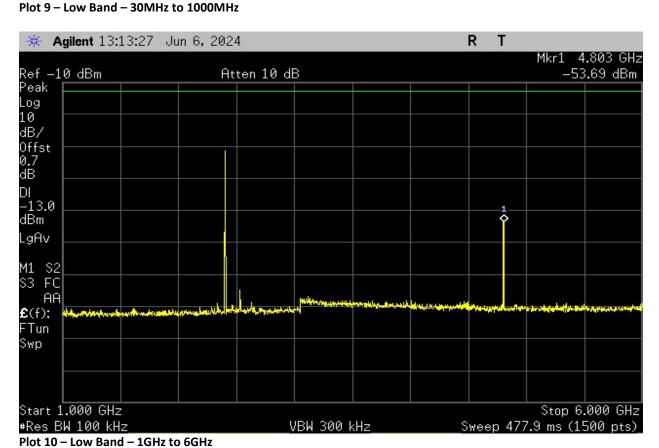
Table 9. Middle Channel – Conducted Spurious Emissions, Test Results

Frequency (MHz)	Measured Level (dBm)	Limit (dBm)
127.7	-70.22	-13.0
4959	-54.49	-13.0

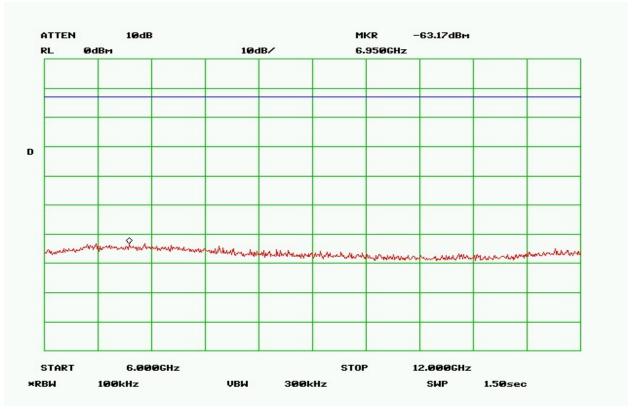
Table 10. Highest Channel – Conducted Spurious Emissions, Test Results



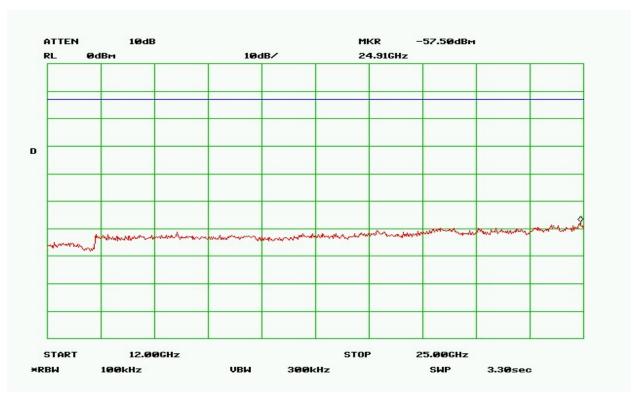






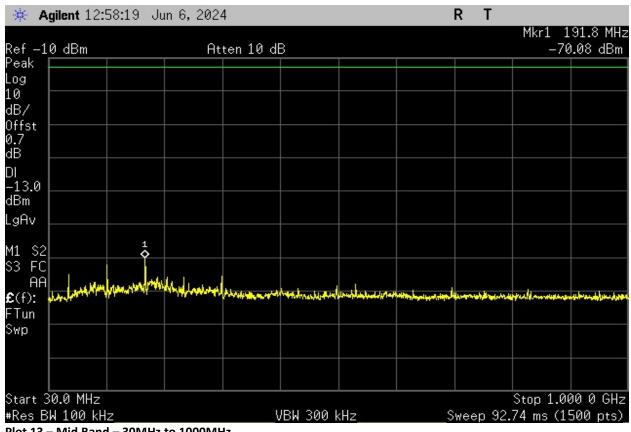


Plot 11 - Low Band - 6GHz to 12GHz

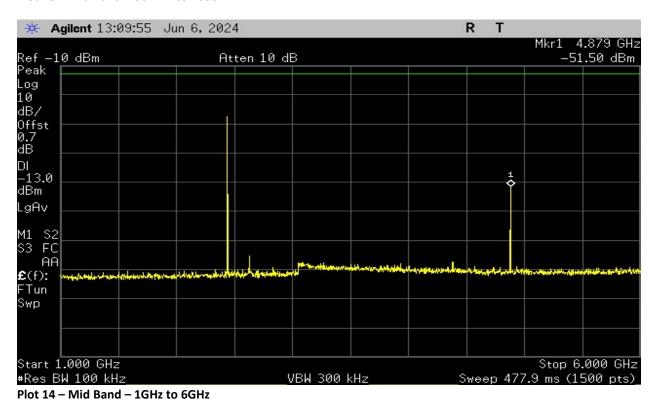


Plot 12 - Low Band - 12GHz to 25GHz

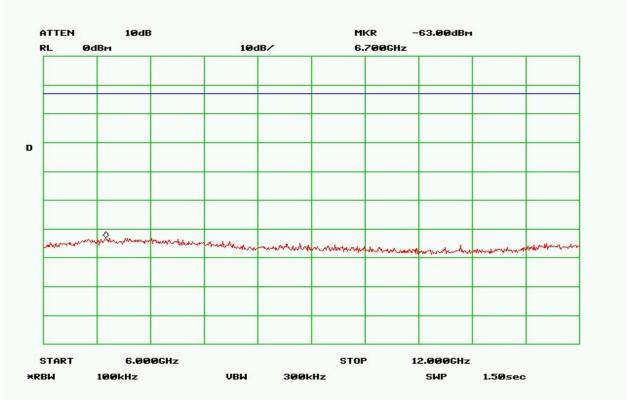




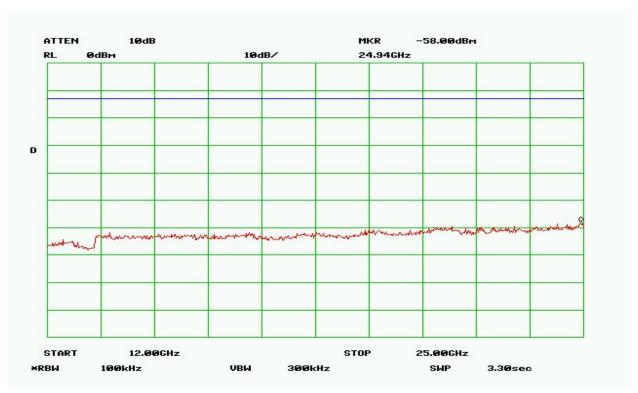
Plot 13 - Mid Band - 30MHz to 1000MHz





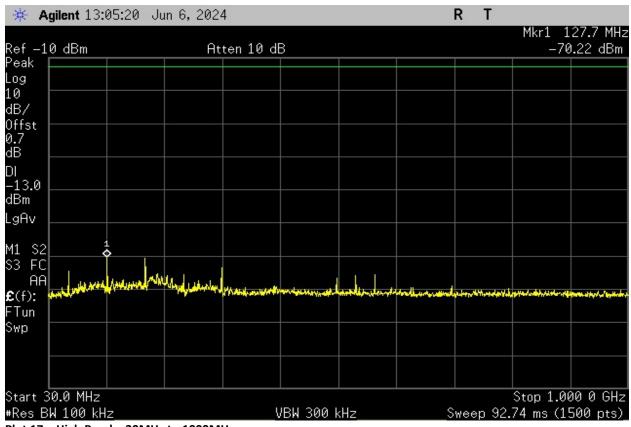


Plot 15 - Mid Band - 6GHz to 12GHz

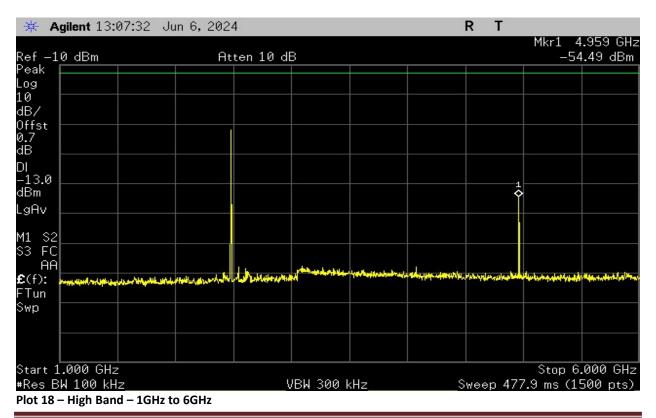


Plot 16 - Mid Band - 12GHz to 25GHz

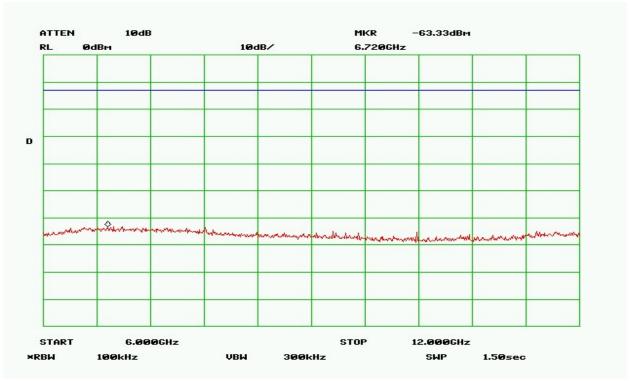




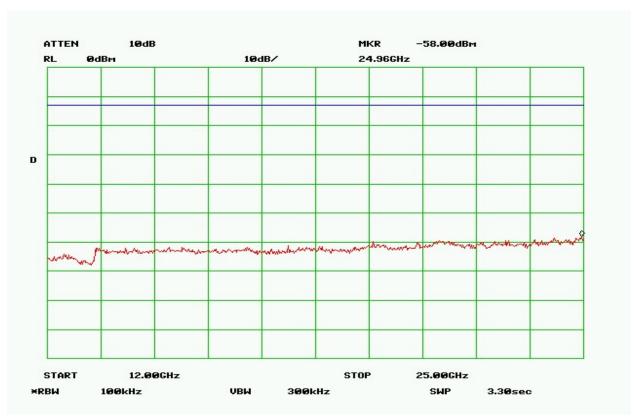
Plot 17 - High Band - 30MHz to 1000MHz







Plot 19 – High Band – 6GHz to 12GHz



Plot 20 – High Band – 12GHz to 25GHz



4. Radiated Spurious Emissions and Restricted Band

Test	§15.247(d), 15.209(a),	Test Engineer(s):	Sean E.
Requirement(s):	15.205 and		
	RSS Gen 8.0		
Test Results:	Pass	Test Date(s):	June 10, 2024

Test Procedures:

As required by 47 CFR 15.247, Radiated spurious measurements were made in accordance with the procedures of the FCC Guidance Document 558074 D01 and ANSI C63.10.

The EUT was placed on a non-reflective table inside a 3-meter open area test site. The EUT was set on continuous transmit.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The frequency range up to the 10th harmonic was investigated included all the restricted band frequencies include 2483.5MHz. Measurement 10dB below the limits were not reported.

To get a maximum emission level from the EUT, the EUT was rotated throughout the X-axis, Y-axis and Z-axis. Worst case is X-axis

Detector Setting	Resolution Bandwidth	Video Bandwidth	Span
Peak	1MHz	3MHz	As necessary
Average	1MHz	10Hz	0 Hz

Table 11. Analyzer Settings



Test Setup:

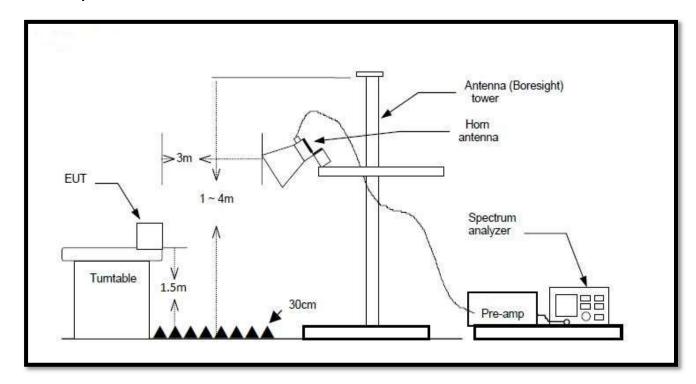


Figure 5. Radiated Emission Above 1GHz Test Setup



Test Result:

Frequency (MHz)	Peak Amplitude (dbuV/m)	Peak Limit (dBuV/m)	Average Amplitude (dBuV/m))	Average Limit (dBuV/m)
4804*	41.86	74.0	-	54.0
7206	34.18	74.0	-	54.0

Table 12 - Spurious Radiated Emission Data – Low Band

Frequency (MHz)	Peak Amplitude (dbuV/m)	Peak Limit (dBuV/m)	Average Amplitude (dBuV/m)	Average Limit (dBuV/m)
4880*	41.68	74.0	-	54.0
7320	37.08	74.0	-	54.0

Table 13- Spurious Radiated Emission Data - Mid Band

Frequency (MHz)	Peak Amplitude (dbuV/m)	Peak Limit (dBuV/m)	Average Amplitude (dBuV/m)	Average Limit (dBuV/m)
4960*	42.64	74.0	-	54.0
7440	36.62	74.0	-	54.0

Table 14- Spurious Radiated Emission Data – High Band

NOTE 1: There were no detectable emissions above the 3rd harmonic.

NOTE 2: Frequency marked with "*" falls under the restricted band



6. Emissions At Band Edges

Test	§15.247(d) and RSS	Test Engineer(s):	Sean E.
Requirement(s):	Gen 8.0		
Test Results:	Pass	Test Date(s):	June 05, 2024

Test Procedures:

As required by 47 CFR 15.247, Band edge radiated emissions measurements were made at the RF antenna output terminals of the EUT using the marker-delta method.

Customer provided a test mode internal to the EUT to control the RF modulation, and frequency channel. The EUT output was connected directly to the spectrum analyzer through an attenuator. The EUT was set up at maximum power, first on the lowest operating channel, then on the highest operating channel of the transmit band.

Detector Setting	Resolution Bandwidth	Video Bandwidth	Sweep Time
Peak	100 kHz	300 kHz	Auto

Table 15 - Analyzer settings

Test Results:

Frequency (MHz)	Measured Level (dBc)	Detector	Limit
2400	-46.09	Peak	-20dBc
2483.5	-61.11	Peak	-20dBc

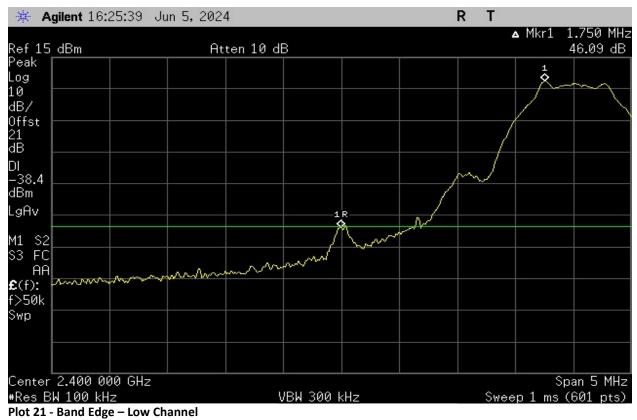
Table 16 – Band Edge Emissions Summary

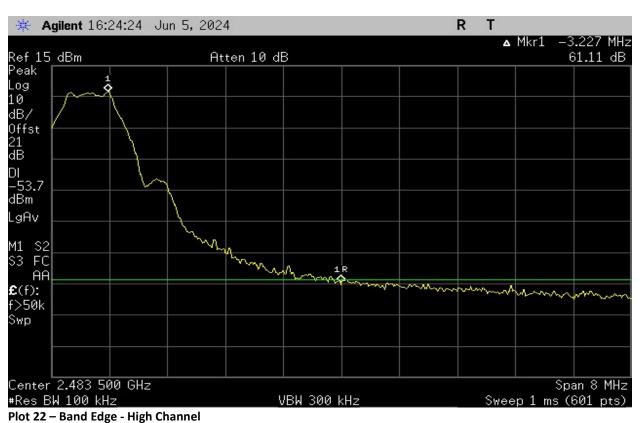
Test Setup:



Figure 6. Band Edge Test Setup









7. Power Spectral Density

Test	§15.247(f),	Test Engineer(s):	Sean E.
Requirement(s):	ANSI C63.10 and		
	RSS-247 5.2(b)		
Test Results:	Pass	Test Date(s):	June 05, 2024

Test Procedures:

As required by 47 CFR 15.247(d), For digitally modulated systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3kHz band during any time interval of continuous transmission. Power spectral density measurements were made at the RF antenna output terminals of the EUT using the DTS methods section 8.4 was used for DTS mode.

The EUT output was connected directly to the spectrum analyzer through an attenuator. The measurements were made at the RF antenna output terminals of the EUT.

Detector Setting	Resolution Bandwidth	Sweep Time	Span
Peak	3KHz	Auto	2 MHz

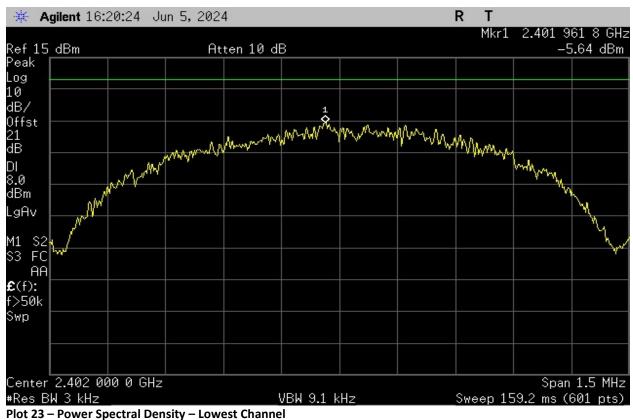
Table 17 - Analyzer settings

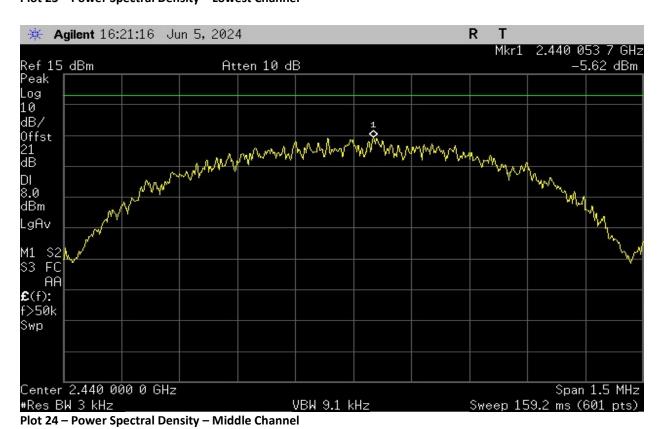
Test Results:

Frequency (MHz)	Measured Level (dBm)	Limit
2402	-5.64	8 dBm
2440	-5.62	8 dBm
2480	-6.19	8 dBm

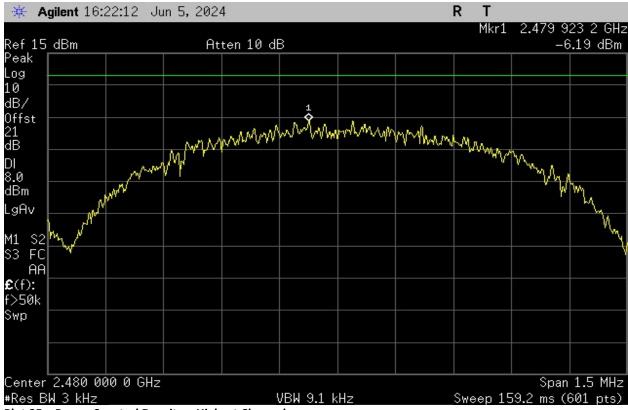
Table 18 - PSD Summary Test Result











Plot 25 - Power Spectral Density - Highest Channel



8. Test Equipment

Equipment	Manufacturer	Model	Serial #	Last Cal Date	Cal Due Date
Spectrum Analyzer	Agilent	E4443A	US41420164	June-01-23	Jul-01-24
Spectrum Analyzer	Hewlett Packard	8563E	3821A09316	May-08-24	May-08-25
High Pass Filter	Mini-Circuits	VHF-3100+	1023	Ver	ified
Power Supply	Hewlett Packard	E3610A	KR83021468	Ver	ified
EMI Receiver	Hewlett Packard	8666B	2747A05264	Feb-01-24	Feb-01-25
Power Supply	Hewlett Packard	Lambda	LA2-AA20- 143 3535	NCR	None
High Pass Filter	Mini-Circuits	VHF-1320+	1034	Ver	ified
Attenuator 20dB	Weinschel	41-20-12	86332	Veri	ified
Horn Antenna	Com-Power	AHA-118	711150	Jan-09-23	Jan-09-25
Antenna	EMCO	GTEM 5417	1063	Ver	ified
EMI Test Receiver	Rohde & Schwarz	ESMI26	840607/005	Nov-15-23	Nov-15-24

Table 19 – Test Equipment List

^{*}Statement of Traceability: Test equipment is maintained and calibrated on a regular basis. All calibrations have been performed by a 17025 accredited test facility, traceable to National Institute of Standards and Technology (NIST)



9. Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. These measurements figures are calculated in accordance with ETSI TR 100 028 Parts 1 and 2. Instrumentation measurement uncertainty has **not** been taken into account to determine compliance.

The following measurement uncertainty values have been calculated as show in the table below:

Measured Parameter	Measurement	Frequency Range	Expanded
	Unit		Uncertainty
Conducted Emissions (AC Power)	dBuV or dBuA	150kHz – 30MHz	± 4.3dB
Radiated Emission below 30MHz	dBuV/m	9kHz-30MHz	± 2.96dB
Radiated Emissions below 1GHz	dBuV/m	30 – 1000MHz	± 5.6dB
Radiated Emissions above 1GHz	dBuV/m	1 – 26.5GHz	± 4.1dB

The reported expanded uncertainty has been estimated at a 95% confidence level (k=2)

END OF TEST REPORT