FCC CERTIFICATION TEST REPORT

for the

SERIES 300 MODULE

FCC ID: 2BVF2-00301

WLL REPORT# 19530-01 REV 0

Prepared for:

LMI Solutions

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Prepared By:

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Testing Certificate AT-1448

FCC Certification Test Report

for the

LMI Solutions

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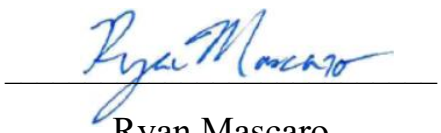
February 3, 2026

WLL Report# 19530-01 Rev 0

Prepared by:



Ryan Mascaro
RF Test Engineer

Reviewed by:

Steven D. Koster
President

Abstract

This report has been prepared on behalf of LMI Solutions to support the attached Application for Equipment Authorization. The test report and application are submitted for a Digital Transmission System (DTS) Single Modular Transmitter under Part 15.247 of the FCC Rules and Regulations (current at the time of testing). This certification test report documents the test configuration and test results for the LMI Solutions, Series 300 Module. The information provided in this report is only applicable to device herein documented as the EUT. The EUT is a single modular transmitter and meets all eight requirements outlined in 15.212(a)(1) of the FCC Rules.

Radiated testing above 30MHz was performed in the Free-space Anechoic Chamber Test-site (FACT) 3m chamber of Washington Laboratories, Ltd., located at: 4840 Winchester Boulevard, Suite 5., Frederick, MD 21703. Site description and site attenuation data have been placed on file with the FCC's Sampling and Measurements Branch at the FCC laboratory in Columbia, MD. Washington Laboratories has been accepted and designated by the FCC under Test Firm Number US3001. Washington Laboratories is approved by the ANSI National Accreditation Board (ANAB), as an independent test laboratory under ISO/IEC 17025:2017. Please refer to Certificate Number AT-1448.

The LMI Solutions, Series 300 Module complies with the requirements for a Digital Transmission System (DTS) transmitter device under FCC Rule Part 15.247 and with the requirements for a single modular transmitter under FCC Rule Part 15.212.

Revision History	Description of Change	Date
Rev 0	Initial Release	February 3, 2026
Rev 1	To update Grantee Code	March 30, 2026

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1 Introduction

1.1 Compliance Statement

The LMI Solutions, Series 300 Module complies with the requirements for a Digital Transmission System (DTS) transmitter device under FCC Rule Part 15.247 and with the requirements for a single modular transmitter under FCC Rule Part 15.212.

1.2 Test Scope

Tests for radiated and conducted (at antenna terminal) emissions were performed. All measurements were performed in accordance with ANSI C63.10-2020/Cor 1-2021 "ANSI Procedures for Compliance Testing of Unlicensed Wireless Devices". The measurement equipment conforms to ANSI C63.2 "Specifications for Electromagnetic Noise and Field Strength Instrumentation".

1.3 Contract Information

Customer:	LMI Solutions c/o MPR Associates, Inc
Purchase Order Number:	MPR-1758-0006-PO-023
Quotation Number:	75626

1.4 Test and Support Personnel

Washington Laboratories, LTD:	Ryan Mascaro
Manufacturer Representative:	Luis Caban and Zachary Glickstein

1.5 Test Location

All measurements herein were performed at Washington Laboratories, Ltd. test center in Frederick, MD. Site description and site attenuation data have been placed on file with the FCC's Sampling and Measurements Branch at the FCC laboratory in Columbia, MD. Washington Laboratories has been accepted and designated by the FCC under Test Firm Number US3001. Washington Laboratories is approved by the ANSI National Accreditation Board (ANAB), as an independent test laboratory under ISO/IEC 17025:2017. Please refer to Certificate Number AT-1448.

2 Equipment Under Test

2.1 EUT Identification

Table 1: Device Summary

Grantee:	LMI Solutions		
Device Manufacturer:	MPR Associates, Inc.		
FCC ID:	2BVF2-00301		
EUT Model:	Series 300 Module		
Part Number:	1758-2405-001		
Software Version:	3.12.28		
Hardware Version:	2		
FCC Rule Parts:	§ 15.247 and § 15.212		
Frequency Range:	2405 MHz to 2480 MHz		
Peak Output Power:	7.686 dBm (**0.0059 Watts**)		
Maximum Antenna Gain:	+1.73 dBi (peak)		
Manufacturing Tune-up Tolerance	±1.0 dB		
Peak EIRP:	10.416 dBm (adjusted for tune-up)		
Antenna Manufacturer and Type	Advanced Assembly, PCB Trace		
FCC Emission Designator:	829KG1D		
6dB Occupied Bandwidth:	828.9 kHz (worst-case)		
Keying and Type of Information:	Automatic, AES 128		
Number of Channels:	16		
Protocol:	IEEE 802.15.4 Mesh		
Modulation:	GFSK (as tested)		
Data Rate;	250 kbps (as tested)		
Power Source & Voltage:	Option 1: 3.6VDC Battery, TL-5934 (as tested by WLL)		
	Option 2: 3.6VDC Battery, TL-2450 (not tested by WLL)		
Worst-Case Tx Spurious Emission:	6.083GHz	-47.99 dBm	See Figure 30
Testing Dates:	1/6/2026 to 1/20/2026		

2.2 EUT Description

The LMS Solutions Series 300 Module is a 2.4GHz ISM transmitter device being certified as a single modular transmitter. The EUT module is intended to provide RF mesh networking capability to host devices supplied by the client. The module incorporates a proprietary wireless radio operating under an IEEE 802.15.4-based mesh protocol and is designed to be integrated into a variety of host platforms. The Series 300 Module collects and transmits data provided by the host device and supports communication with other mesh nodes and a centralized gateway. The module remains in a low-power idle state between transmissions. During installation and typical use, the EUT operates in a very low duty cycle, periodically transmitting data and responding to network queries while remaining in a low-power idle state between transmissions. The typical use-case duty cycle, by design, is intended to be less than 1%. The module utilizes an integrated PCB trace antenna with a maximum peak gain of +1.73dBi. The EUT is a battery powered device and is not capable of coupling to a public AC mains network by any means.

2.3 Test Configuration and Algorithm

The EUT was provided in a variety of engineering samples that were configured for testing. The EUT samples were loaded with test-mode software/firmware to allow individual samples to dwell, hop, sweep, and/or receive only as needed for required testing. The EUT was tested in a powered on, steady state. The 2.4GHz ISM radio was exercised as necessary to meet the requirements of the testing. For conducted methods of measurement, the radio was observed through the uFl antenna port. For radiated emissions below 1GHz, the EUT was set to transmit at the low channel of 2405MHz. For radiated emissions above 1GHz, the EUT was set to transmit at the each of the low, center, and high channels. Only the worst-case emissions are provided throughout this report. Additionally, for the transmit power setting/transmit gain setting: please note that the test-mode software was set to a value of “70”. This setting was maintained for all testing. For the purposes of testing, the duty cycle of the transmitter was set to near 99%. The EUT was tested in a GFSK mode, at 250 kbps data rate.

2.4 Customer Supplied Data or EUT Information

The customer has provided the information on the EUT contents and configuration of the EUT system during testing.

The customer has provided the information on the transmitting antenna (type and gain).

The test laboratory is not responsible for verifying the accuracy of this information.

2.5 Equipment Configuration

The EUT is comprised of the following equipment. (All Modules, PCBs, etc. listed were considered as part of the EUT, as tested.)

Table 2: Equipment Configuration

Description	Manufacturer	Part Number	Serial Number	Revision
Series 300 Module	MPR Associates, Inc.	1758-2404-003	*Not Specified*	2

Table 3: Support Equipment

Item	Manufacturer	Model Number
Laptop Computer	--	--
Simulator Network	--	--
OTA Module w/ ISM Antenna	--	--

Table 4: EUT Ports and Cabling

Ref. ID	Port	Description	Qty.	Length
N/A	N/A	N/A	N/A	N/A

3 Test Results

The table below shows the results of testing for compliance with a Digital Transmission System in accordance with FCC Part 15.247. Full test results are shown in subsequent sub-sections.

Table 5: Testing and Results Summary

FCC Rule Part	Description	Result
15.247(a)(2)	Occupied Channel Bandwidth	Pass
15.247 (b)(3)	Transmit Output Power	Pass
15.247 (e)	Power Spectral Density	Pass
15.247 (d)	Out-of-Band Emissions (Band Edge @ 20dB below)	Pass
15.205 15.209	General Field Strength Limits (Restricted Bands & RE Limits)	Pass
15.207	AC Conducted Emissions	N/A *

* the EUT can only be powered by a non-rechargeable battery

3.1 Deviations to the Test Standard

There were no deviations to the requirements of the standard(s).

3.2 Testing Dates

1/6/2026 to 1/20/2026

3.3 Occupied Bandwidth, Digital Transmission System

For a DTS operating in the 2.4GHz band, FCC Rule Part 15.247(a)(2) and RSS-247, 5.2(a) require the minimum 6dB bandwidth be at least 500 kHz.

The transmitter occupied bandwidth was measured conducted at the antenna port, by coupling the output of the EUT transmitter to the input of a spectrum analyzer. The measurement level was corrected for any cable and attenuator losses.

3.3.1 Measurement Method

This test was performed in accordance with Clause 11.8.2, Option 2, of ANSI C63.10-2020.

3.3.2 Test Data

The EUT test data is provided below.

The EUT was configured to transmit a modulated signal, with channel hopping disabled.

Table 6: Occupied Bandwidth Results

Frequency	6dB Bandwidth	Result
Low Channel, 2405 MHz	828.9 kHz	Pass
Center Channel, 2440 MHz	833.0 kHz	Pass
High Channel, 2480 MHz	1092.0 kHz	Pass

Figure 1: Occupied Bandwidth, Low Channel

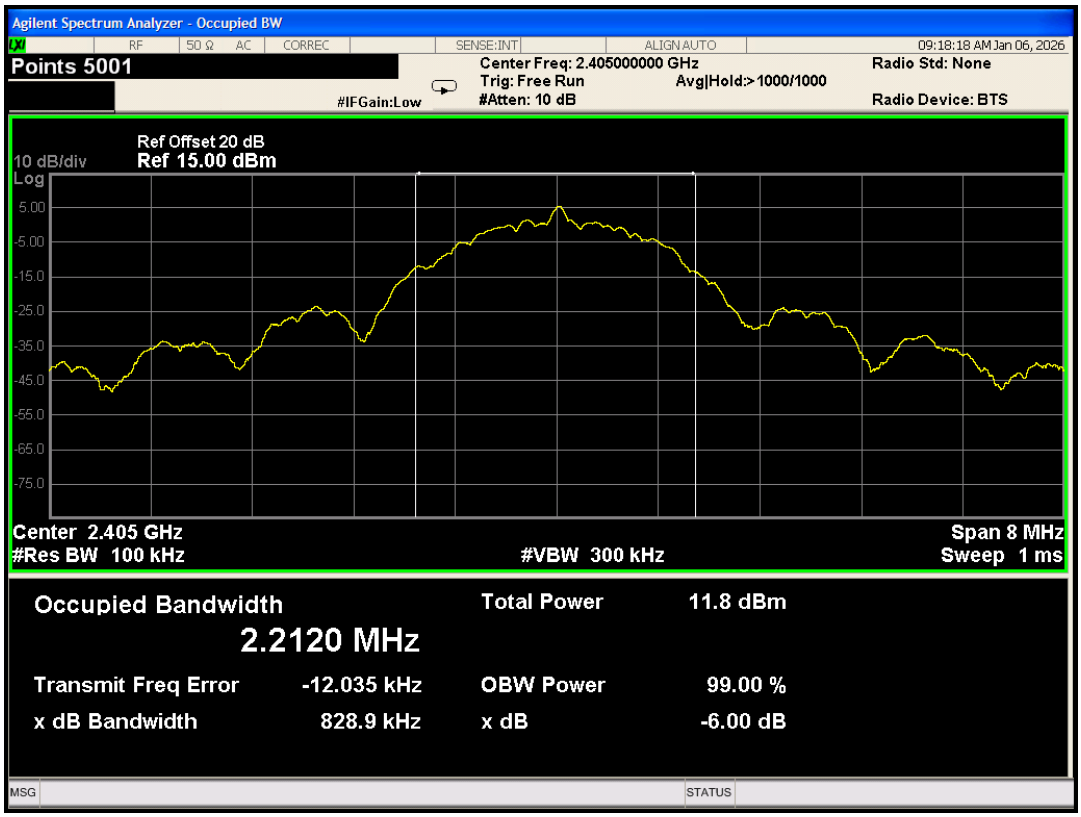


Figure 2: Occupied Bandwidth, Center Channel

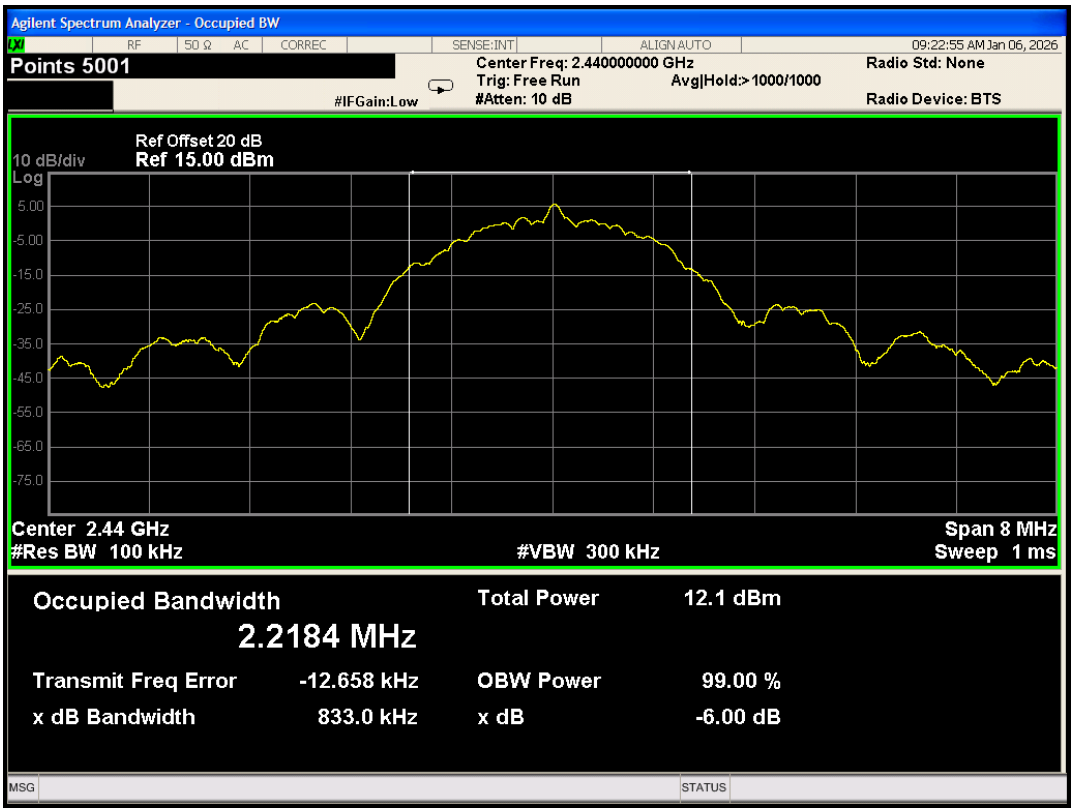
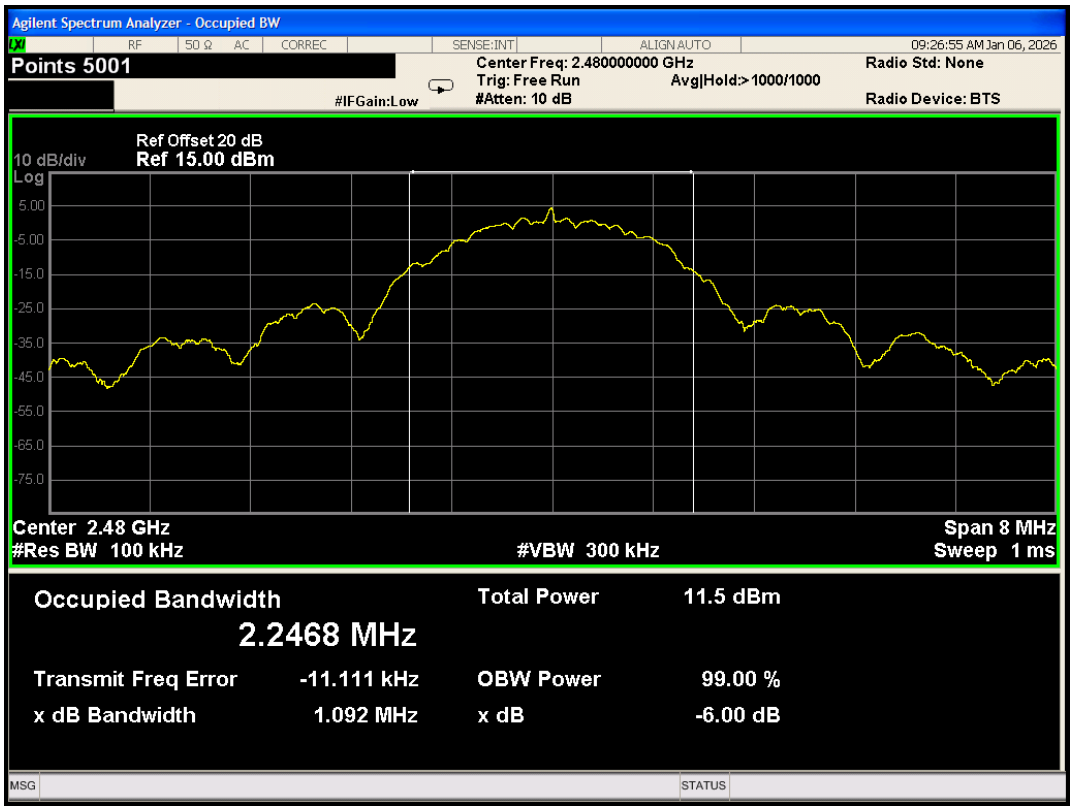


Figure 3: Occupied Bandwidth, High Channel



3.4 Conducted Peak Output Power

For a DTS operating in the 2.4GHz band, FCC Rule Part 15.247(b)(3) requires that the maximum peak conducted output power shall not exceed 30 dBm, or 1W. Additionally, the EIRP shall not exceed 36 dBm, or 4W.

The transmitter power was measured conducted at the antenna port, by coupling the output of the EUT transmitter to the input of a spectrum analyzer. The measurement level was corrected for any cable and attenuator losses.

3.4.1 Measurement Method

This test was performed in accordance with Clause 11.9.1.1 of ANSI C63.10-2020.

3.4.2 Test Data

The EUT test data is provided below.

The EUT was configured to transmit a modulated signal, with channel hopping disabled.

The EUT employs a PCB trace antenna with a peak gain of +1.73dBi.

Table 7: Conducted Output Power Results

Frequency	Power (dBm)	EIRP (dBm)	Result
Low Channel, 2405 MHz	7.686	9.416	Pass
Center Channel, 2440 MHz	7.657	9.387	Pass
High Channel, 2480 MHz	7.352	9.082	Pass

Figure 4: Peak Output Power, Low Channel

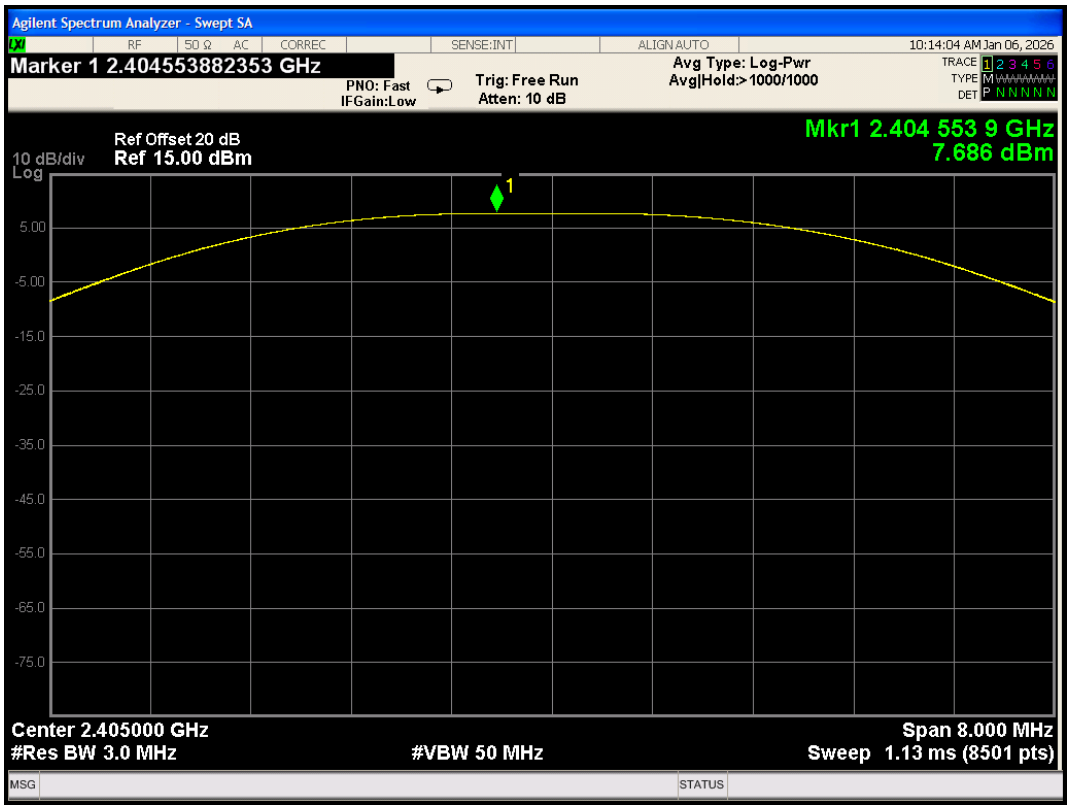


Figure 5: Peak Output Power, Center Channel

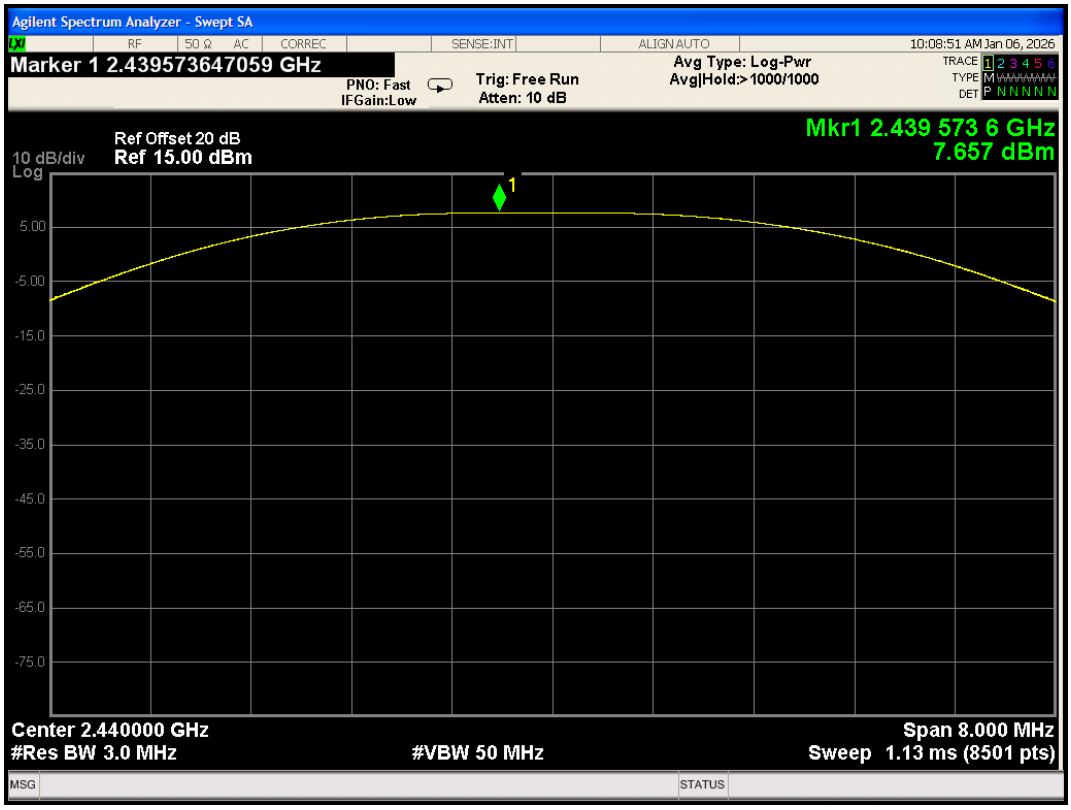
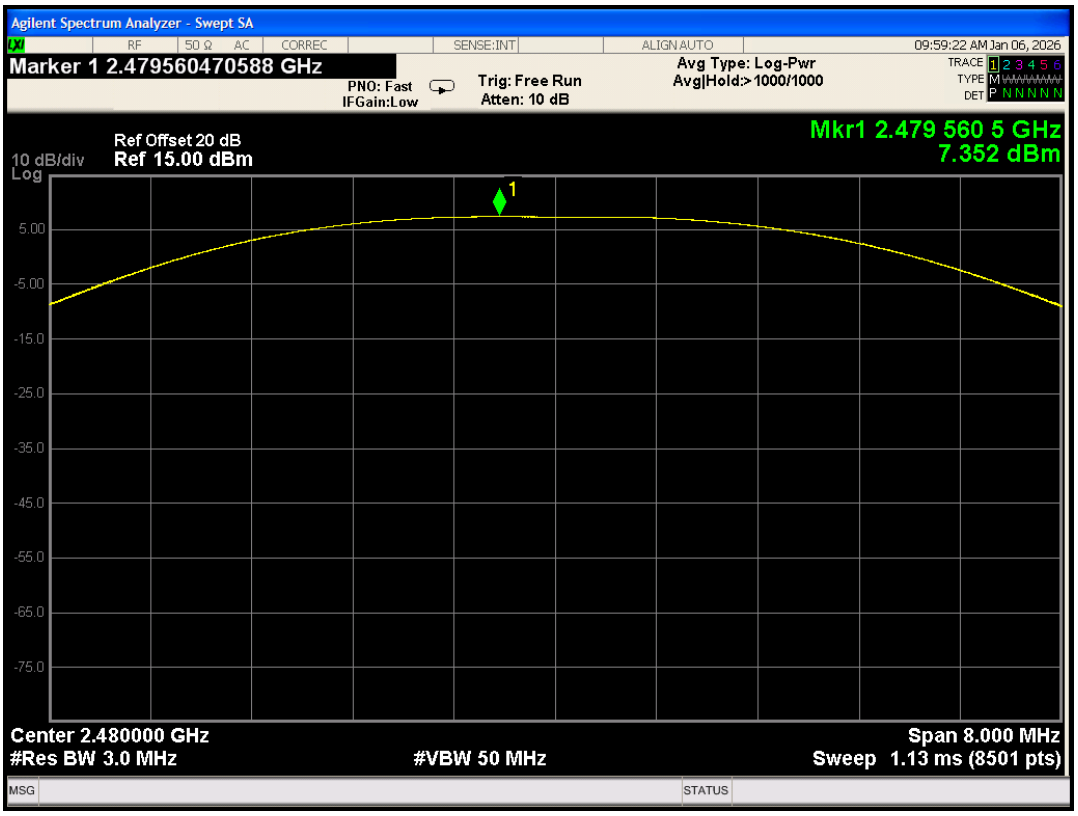


Figure 6: Peak Output Power, High Channel



3.5 Power Spectral Density

For a DTS operating in the 2.4GHz band, FCC Rule Part 15.247(e) requires that the maximum peak power spectral density shall not exceed 8 dBm in any 3 kHz band.

The transmitter peak power spectral density was measured conducted at the antenna port, by coupling the output of the EUT transmitter to the input of a spectrum analyzer. The measurement level was corrected for any cable and attenuator losses.

3.5.1 Measurement Method

This test was performed in accordance with Clause 11.10.2 of ANSI C63.10-2020.

Please note that the trace was allowed to stabilize for a period of no less than 61-seconds.

3.5.2 Test Data

The EUT test data is provided below.

The EUT was configured to transmit a modulated signal, with channel hopping disabled.

Table 8: Power Spectral Density

Frequency	PSD (dBm)	Limit (dBm)	Result
Low Channel, 2405 MHz	-1.265	8.0	Pass
Center Channel, 2440 MHz	-1.508	8.0	Pass
High Channel, 2480 MHz	-1.910	8.0	Pass

Figure 7: Power Spectral Density, Low Channel

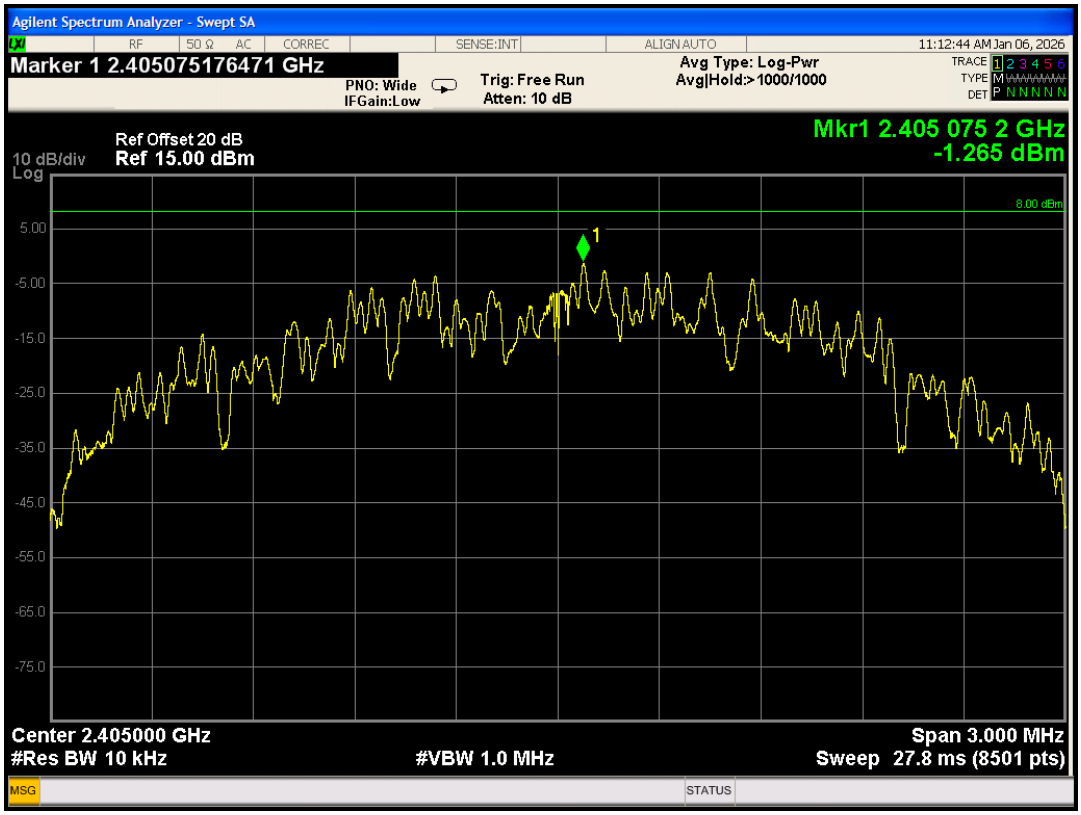


Figure 8: Power Spectral Density, Center Channel

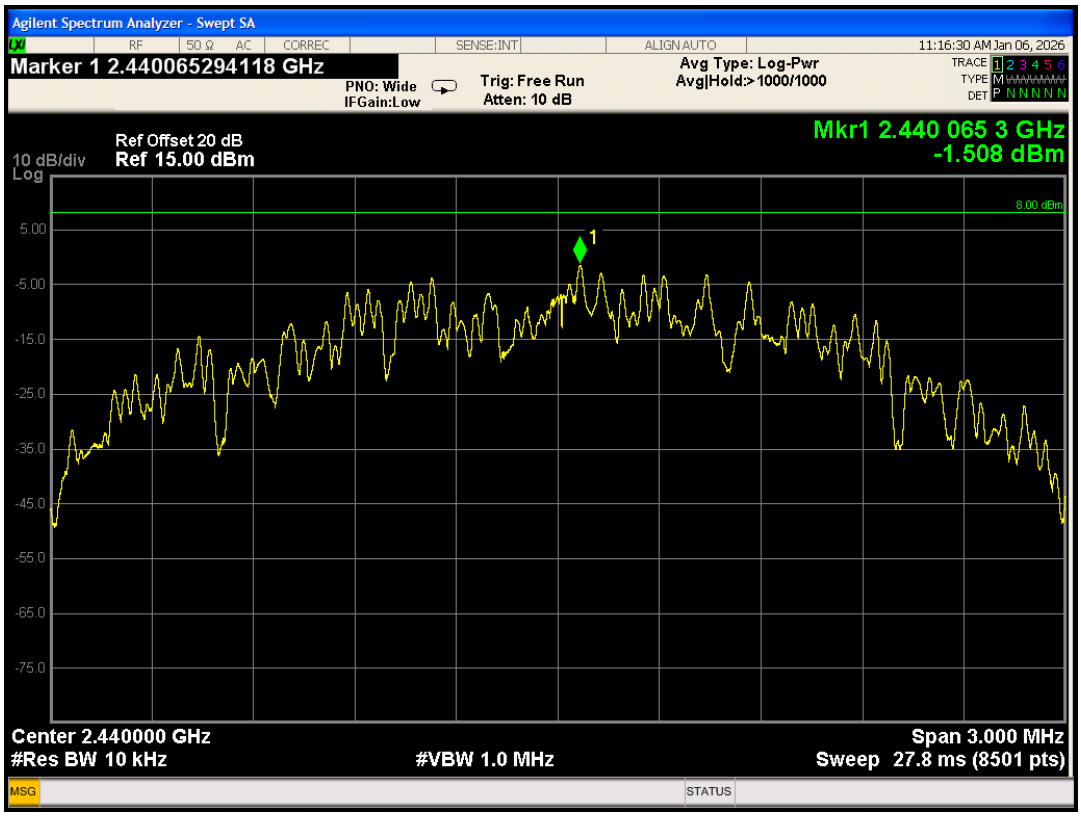
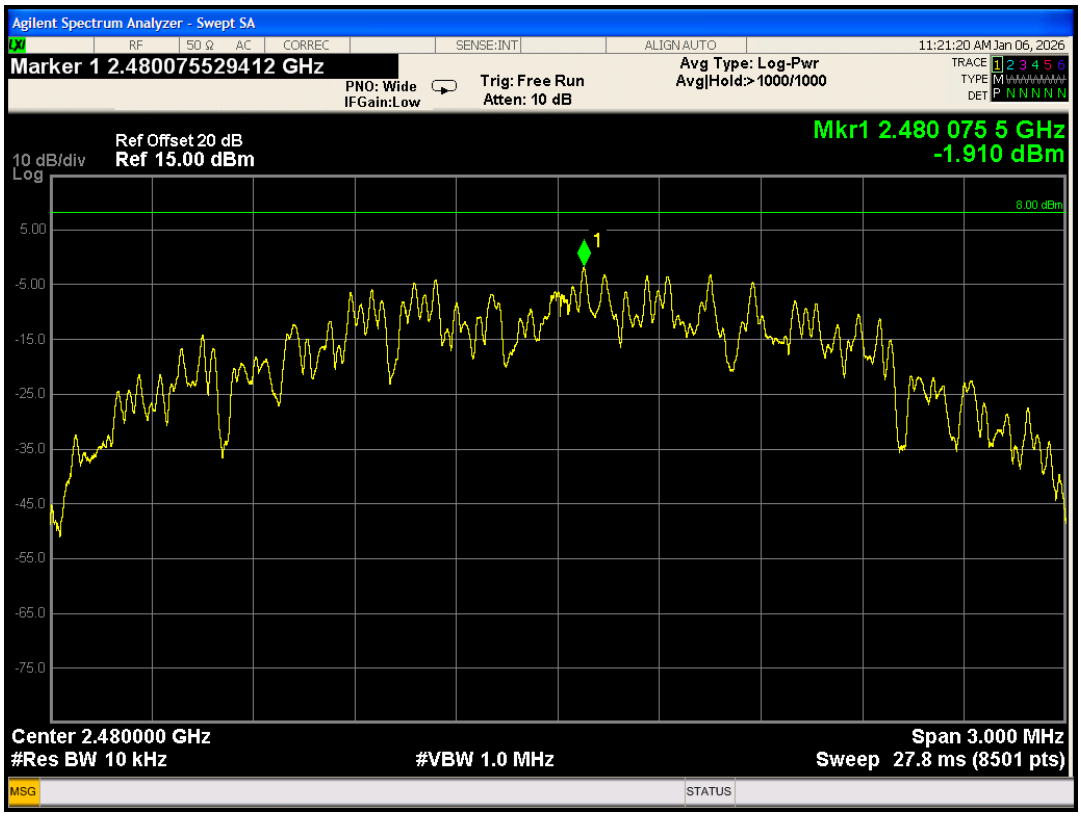


Figure 9: Power Spectral Density, High Channel



3.6 Conducted Band-edge Testing

This section provides close-up band-edge plots of the low and high channel, with respect to the nearest authorized band-edge.

For a DTS operating in the 2.4GHz band, FCC Rule Part 15.247(d) requires that in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the unwanted radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

Band-edge measurements were made conducted at the antenna port, by coupling the output of the EUT transmitter to the input of a spectrum analyzer. The measurement level was corrected for any cable and attenuator losses.

3.6.1 Measurement Method

This test was performed in accordance with Clause 6.10 through Clause 6.10.4 of ANSI C63.10-2020.

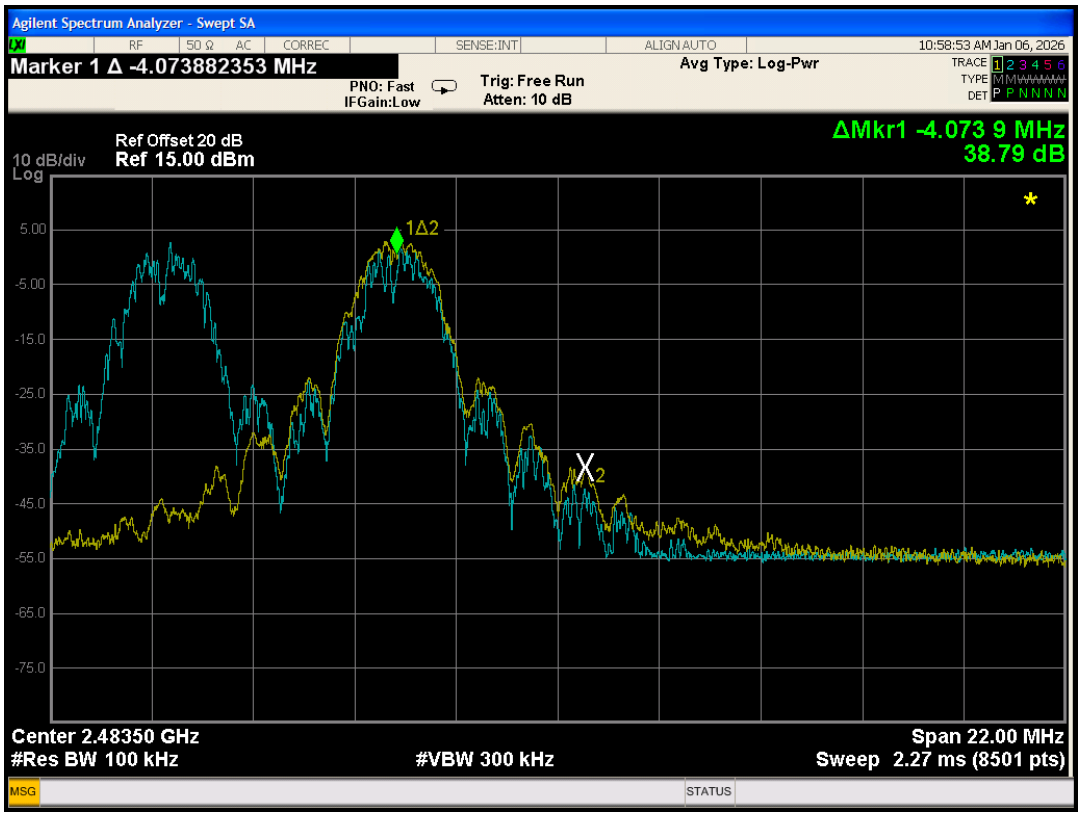
3.6.2 Test Data

The EUT test data is provided below.

The EUT was configured to transmit a modulated signal. The EUT was evaluated in two modes, channel hopping enabled and channel hopping disabled. The hopping function had no impact on the results of this test.

Figure 10: Low Channel Band-Edge

Figure 11: High Channel Band-Edge



3.7 Conducted Unwanted Spurious Emissions

For a DTS operating in the 2.4GHz band, FCC Rule Part 15.247(d) requires that in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the unwanted radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

The transmitter unwanted spurious emissions were evaluated and measured conducted at the antenna port, by coupling the output of the EUT transmitter to the input of a spectrum analyzer. The measurement level was corrected for any cable and attenuator losses.

3.7.1 Measurement Method

This test was performed in accordance with Clause 11.11 of ANSI C63.10-2020.

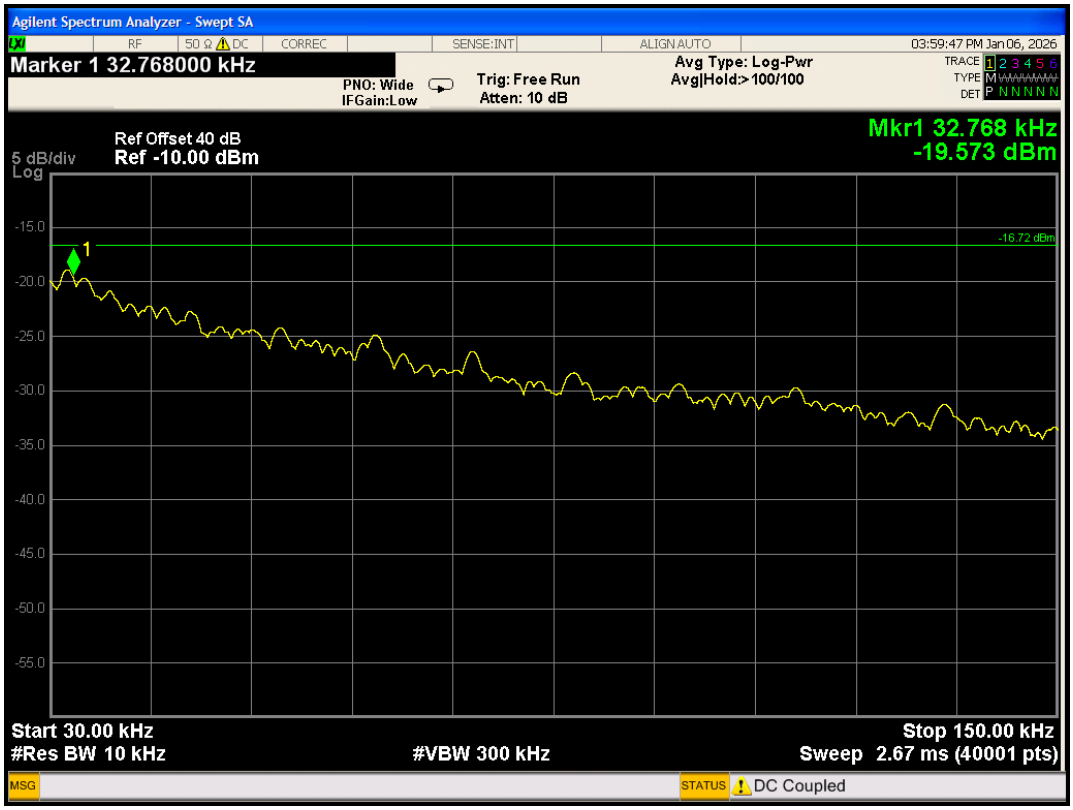
3.7.2 Test Data

The EUT test data for the low, center, and high channels are provided below.

The EUT was configured to transmit a modulated signal, at the low, center, and high channels.

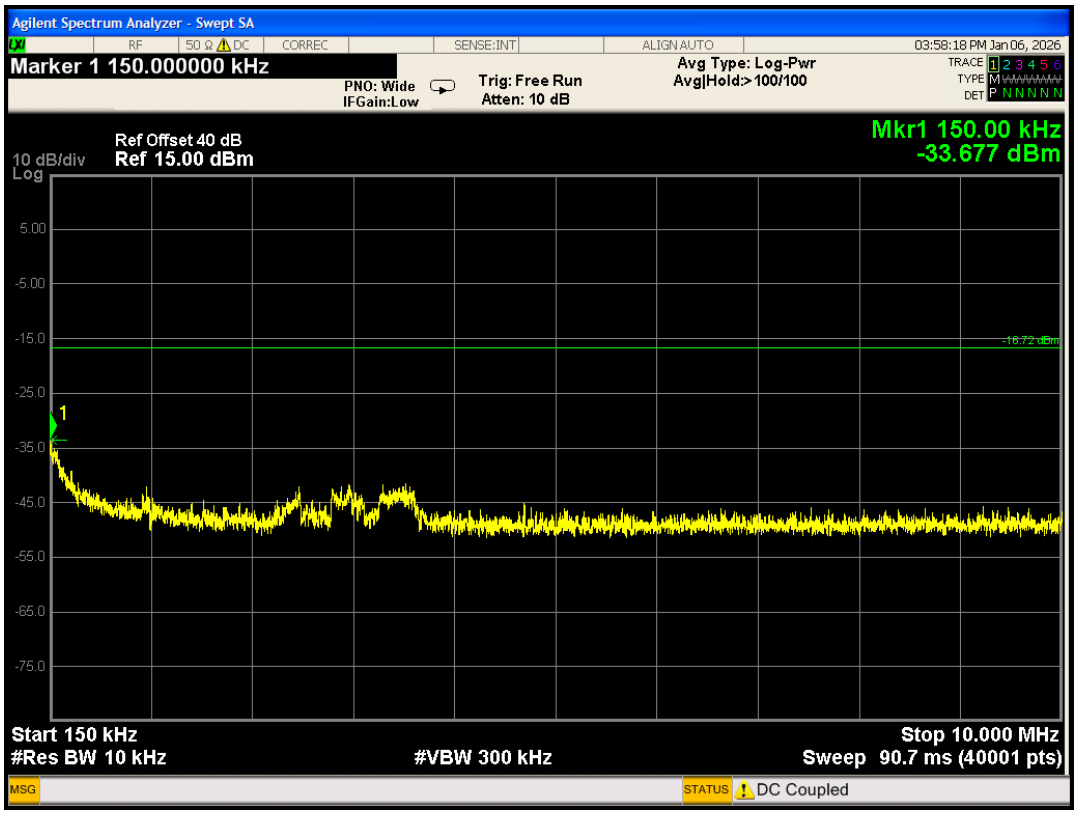
The EUT was tested from 30kHz to 25GHz. This range covers the lowest frequency generated by the EUT. It also covers the tenth harmonic of the fundamental.

Figure 12: Low Channel Conducted Spurious Plot 1



* for this plot: the RBW setting was reduced to 10kHz to ensure the measurement system remained linear at the lower edge of the investigation band. A reference level offset of +20dB was introduced into the spectrum analyzer as an amplitude correction from 20LOG(100/10). The limit remains the same, as defined by the transmitter, and the emission levels reported are final and corrected.

Figure 13: Low Channel Conducted Spurious Plot 2



* for this plot: the RBW setting was reduced to 10kHz to ensure the measurement system remained linear at the lower edge of the investigation band. A reference level offset of +20dB was introduced into the spectrum analyzer as an amplitude correction, from 20LOG(100/10). The limit remains the same, as defined by the transmitter, and the emission levels reported are final and corrected.

Figure 14: Low Channel Conducted Spurious Plot 3

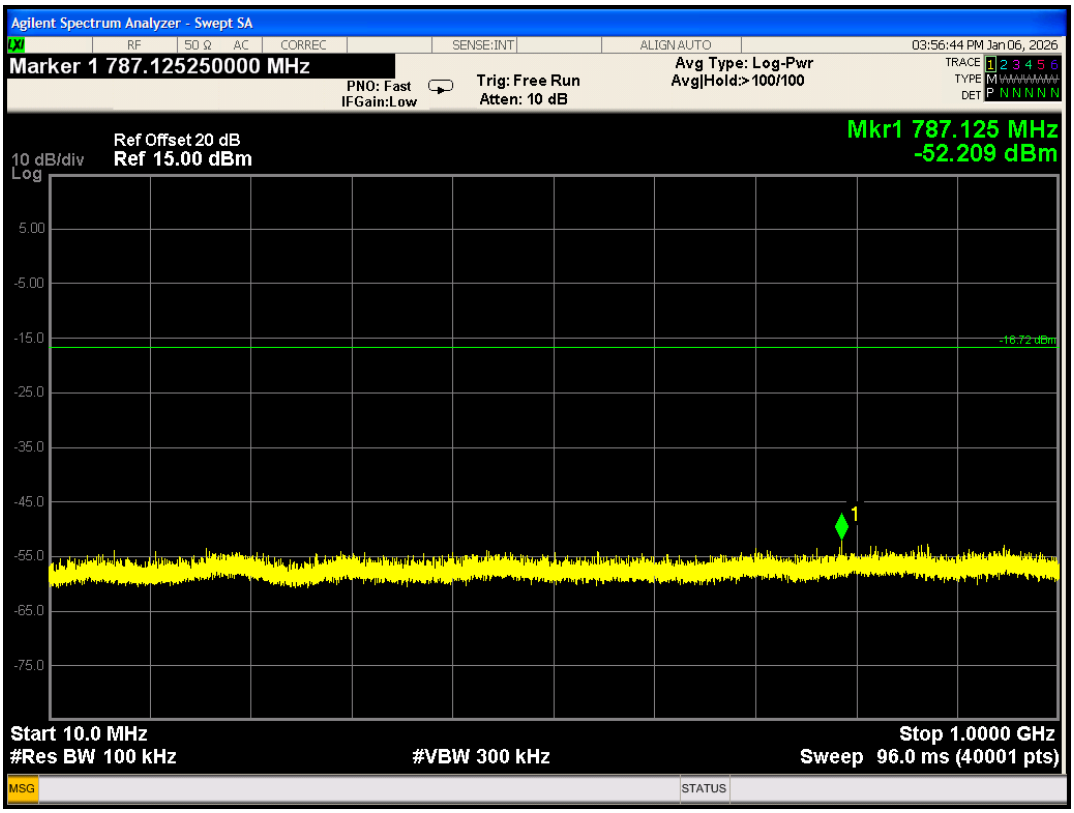


Figure 15: Low Channel Conducted Spurious Plot 4

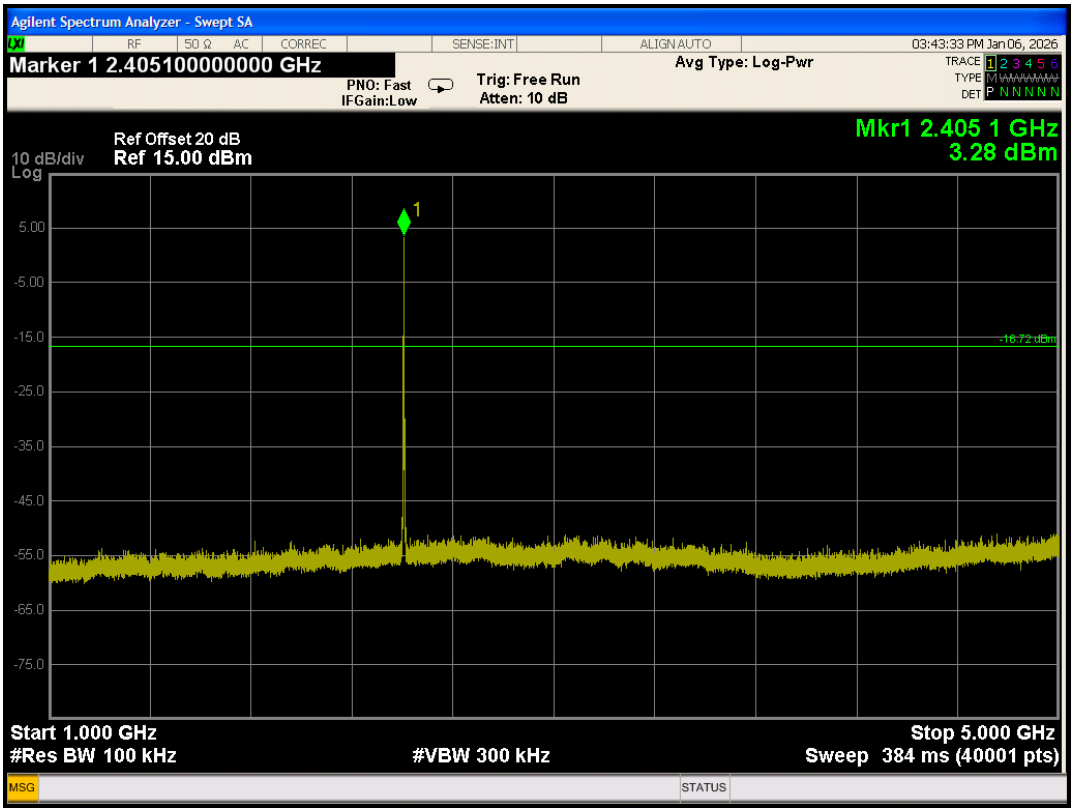


Figure 16: Low Channel Conducted Spurious Plot 5

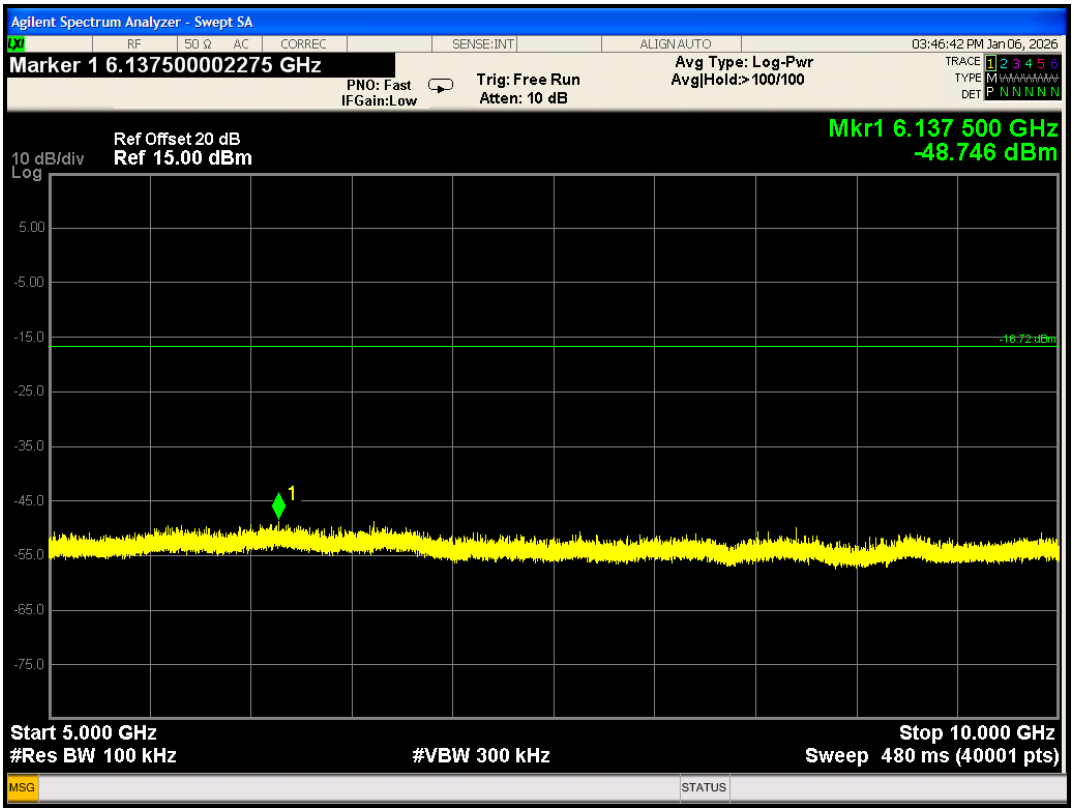


Figure 17: Low Channel Conducted Spurious Plot 6

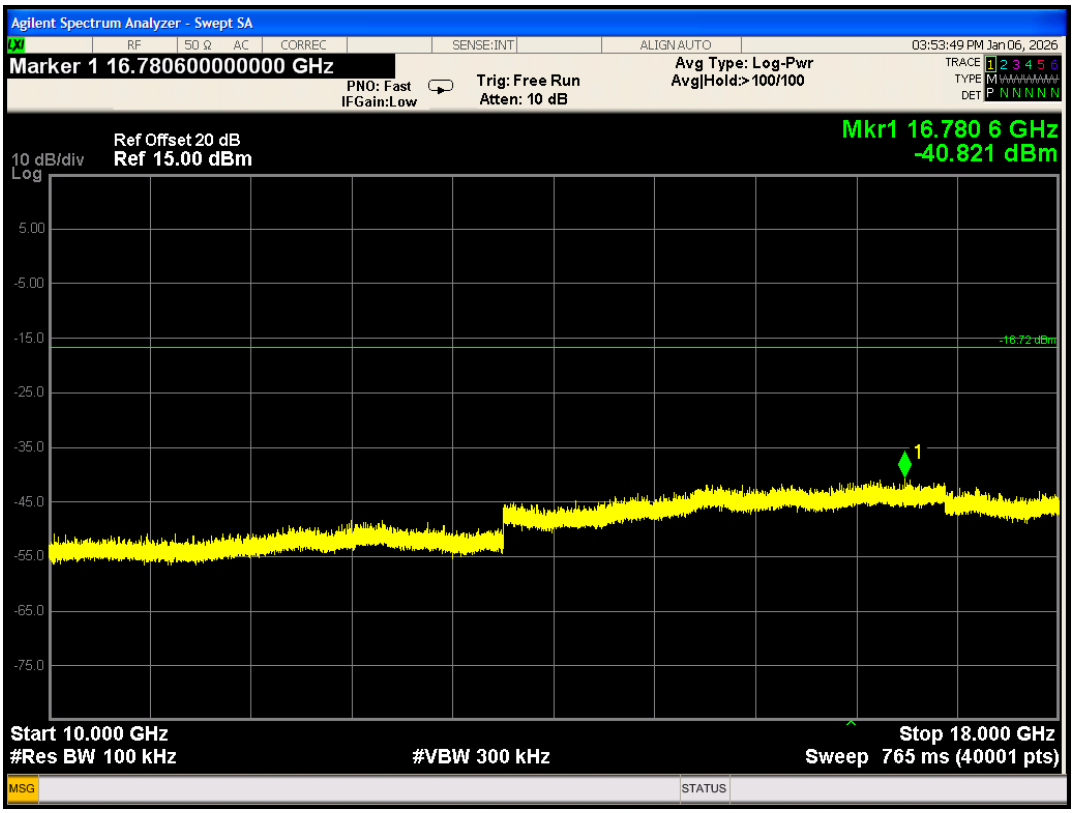


Figure 18: Low Channel Conducted Spurious Plot 7

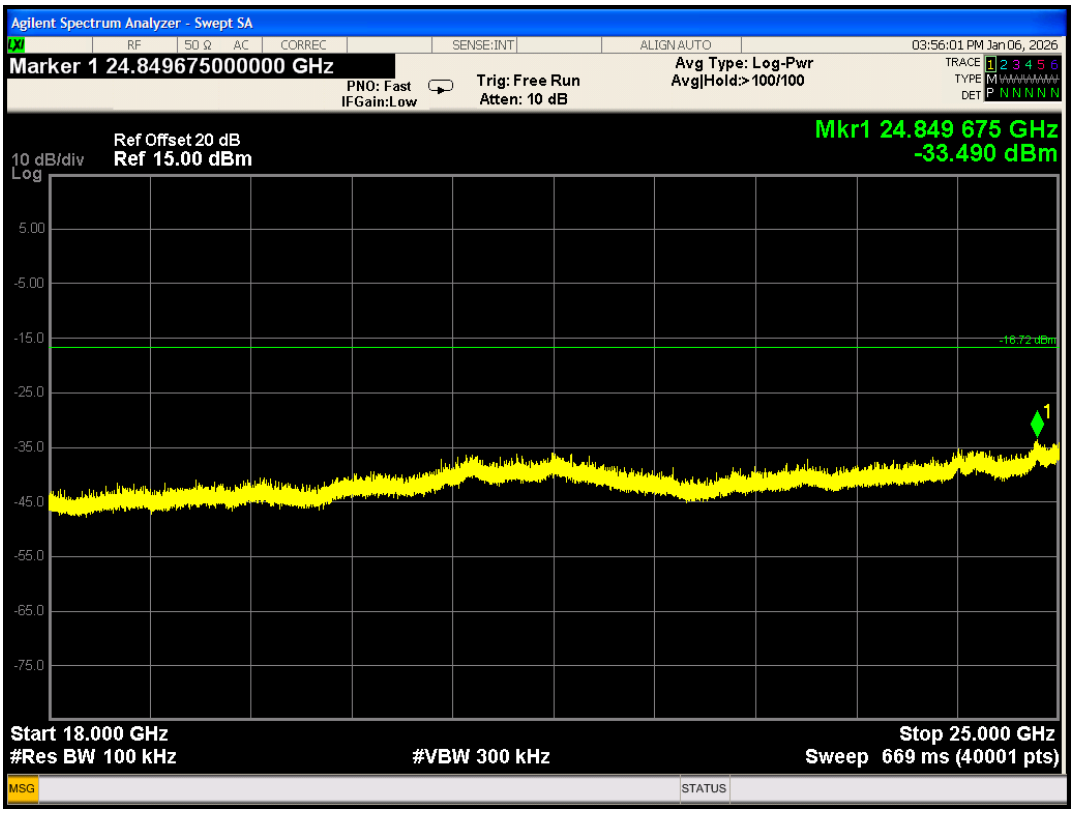
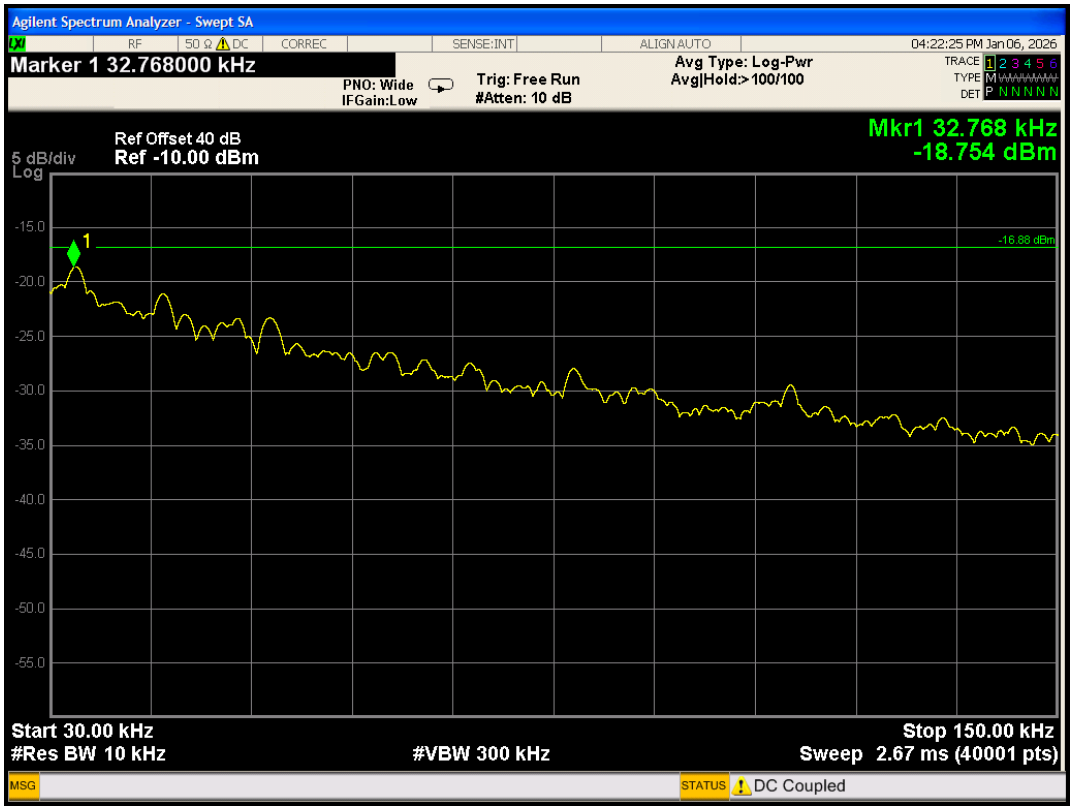
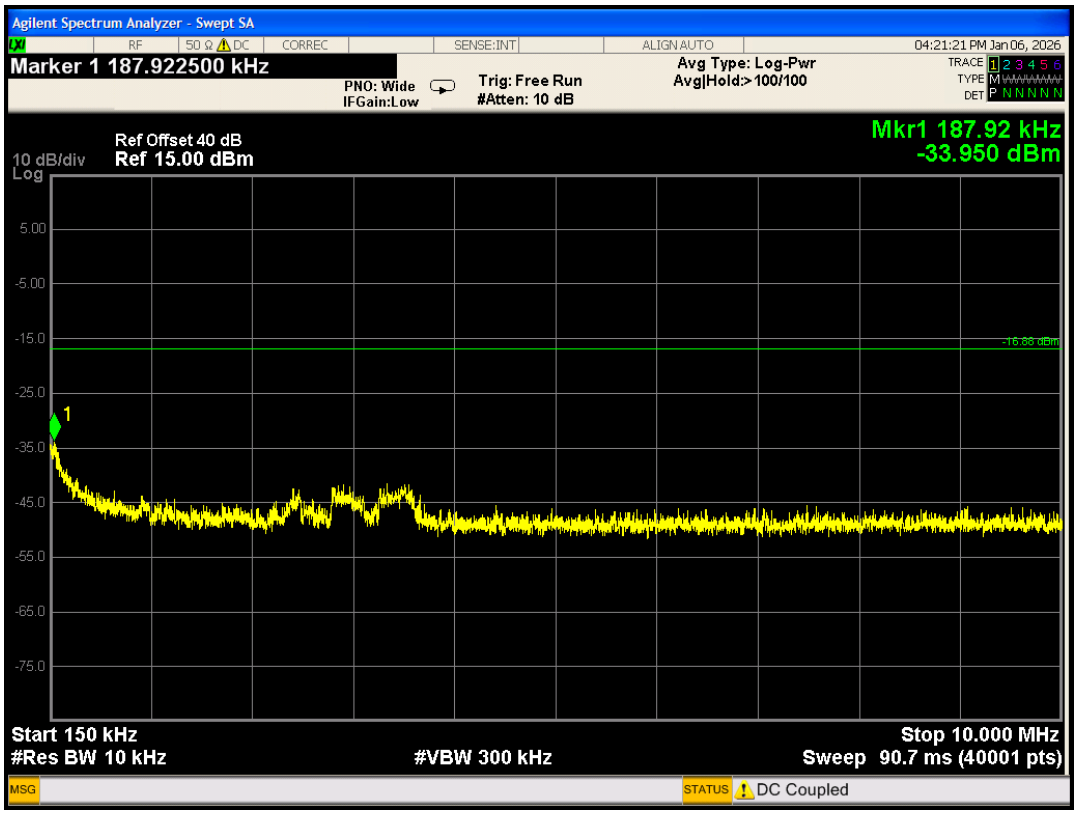


Figure 19: Center Channel Conducted Spurious Plot 1



* for this plot: the RBW setting was reduced to 10kHz to ensure the measurement system remained linear at the lower edge of the investigation band. A reference level offset of +20dB was introduced into the spectrum analyzer as an amplitude correction from 20LOG(100/10). The limit remains the same, as defined by the transmitter, and the emission levels reported are final and corrected.

Figure 20: Center Channel Conducted Spurious Plot 2



* for this plot: the RBW setting was reduced to 10kHz to ensure the measurement system remained linear at the lower edge of the investigation band. A reference level offset of +20dB was introduced into the spectrum analyzer as an amplitude correction from 20LOG(100/10). The limit remains the same, as defined by the transmitter, and the emission levels reported are final and corrected.

Figure 21: Center Channel Conducted Spurious Plot 3

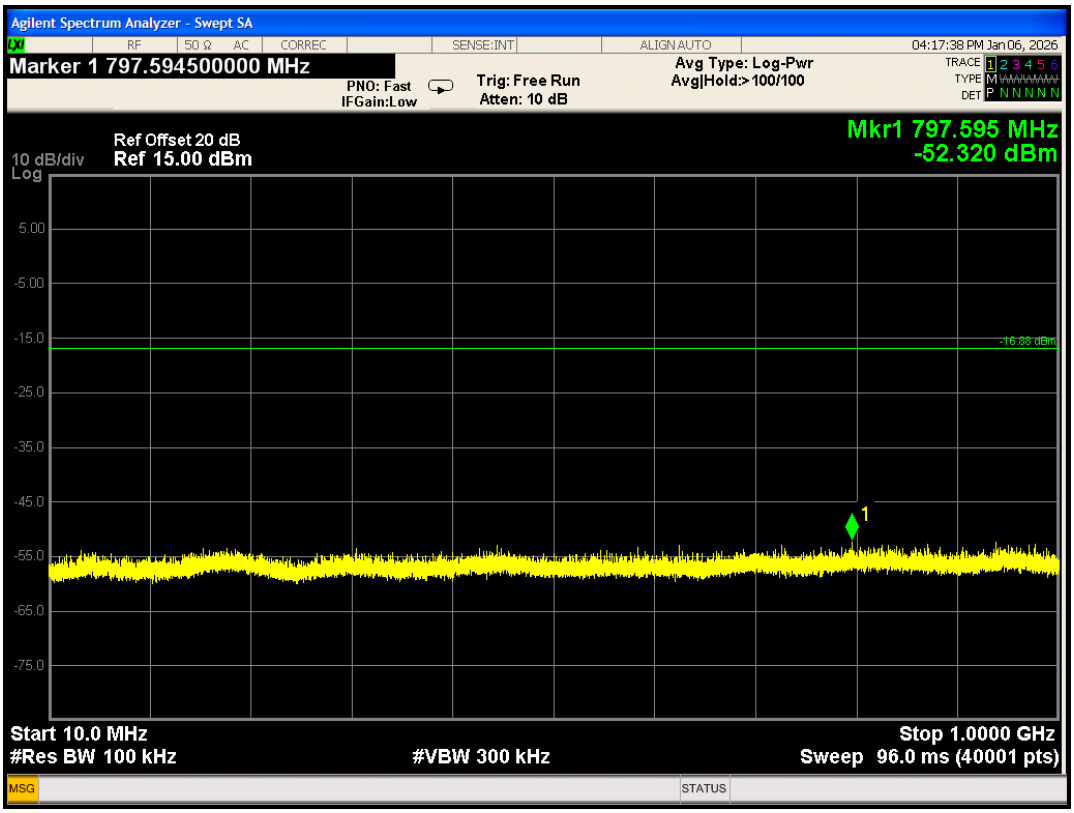


Figure 22: Center Channel Conducted Spurious Plot 4

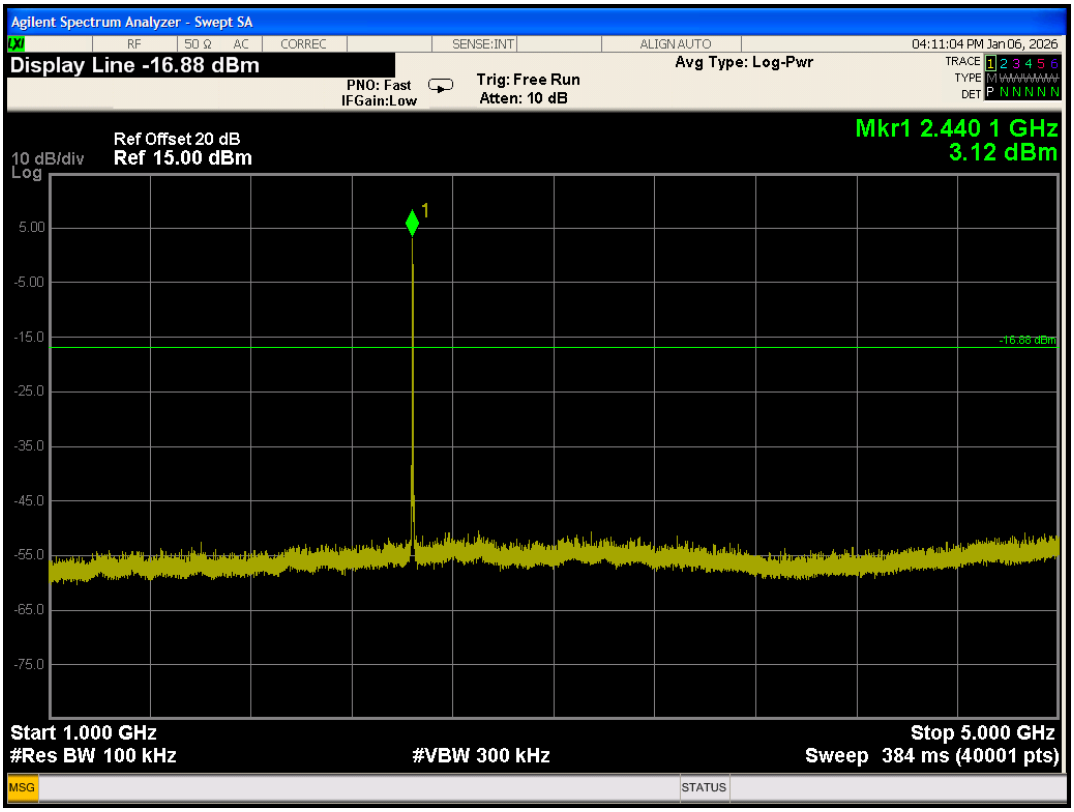


Figure 23: Center Channel Conducted Spurious Plot 5

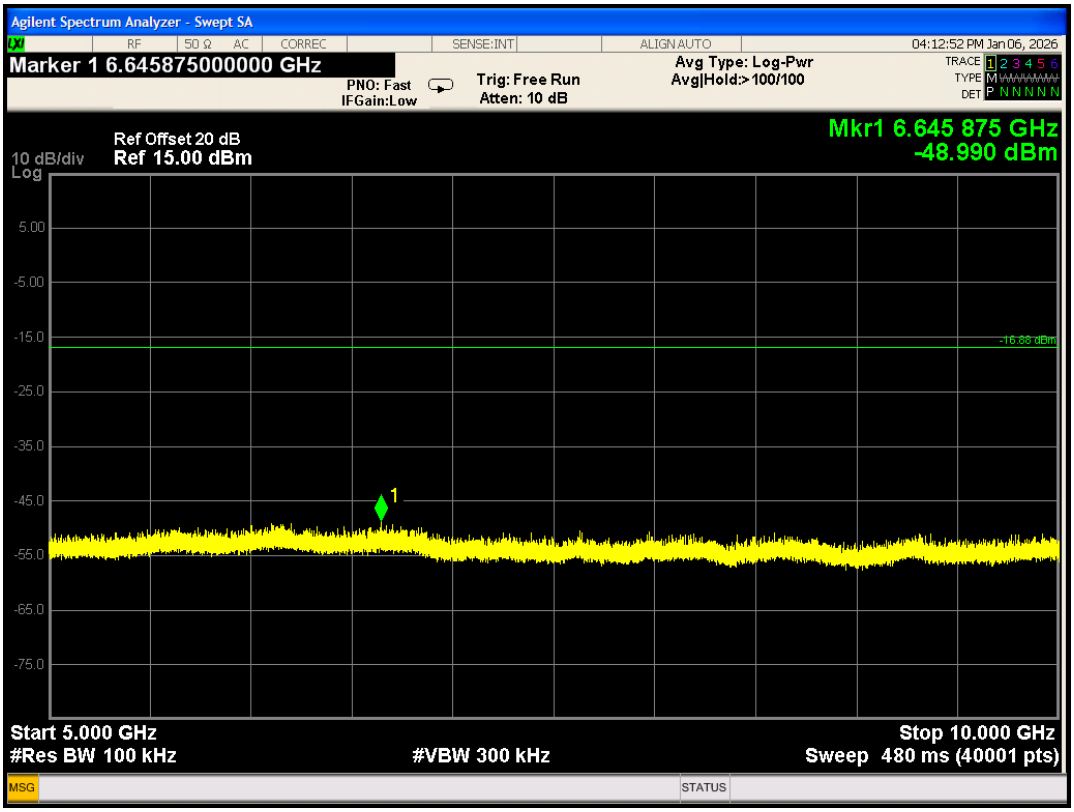


Figure 24: Center Channel Conducted Spurious Plot 6

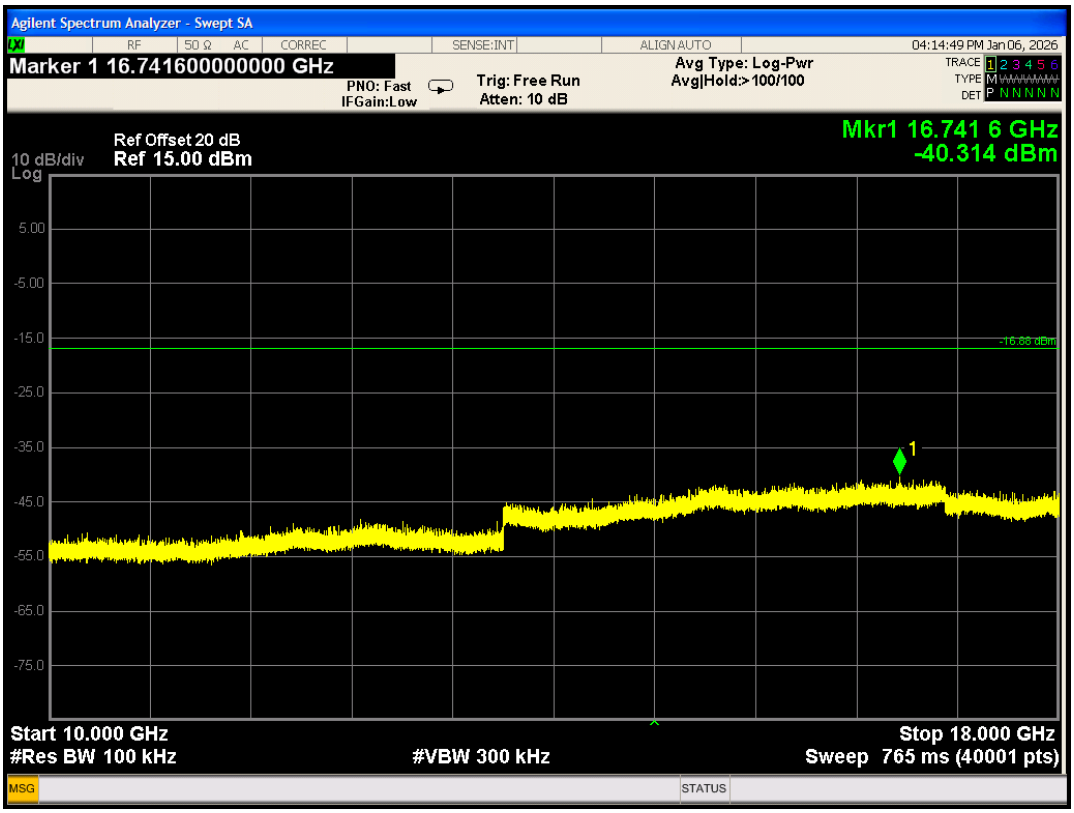


Figure 25: Center Channel Conducted Spurious Plot 7

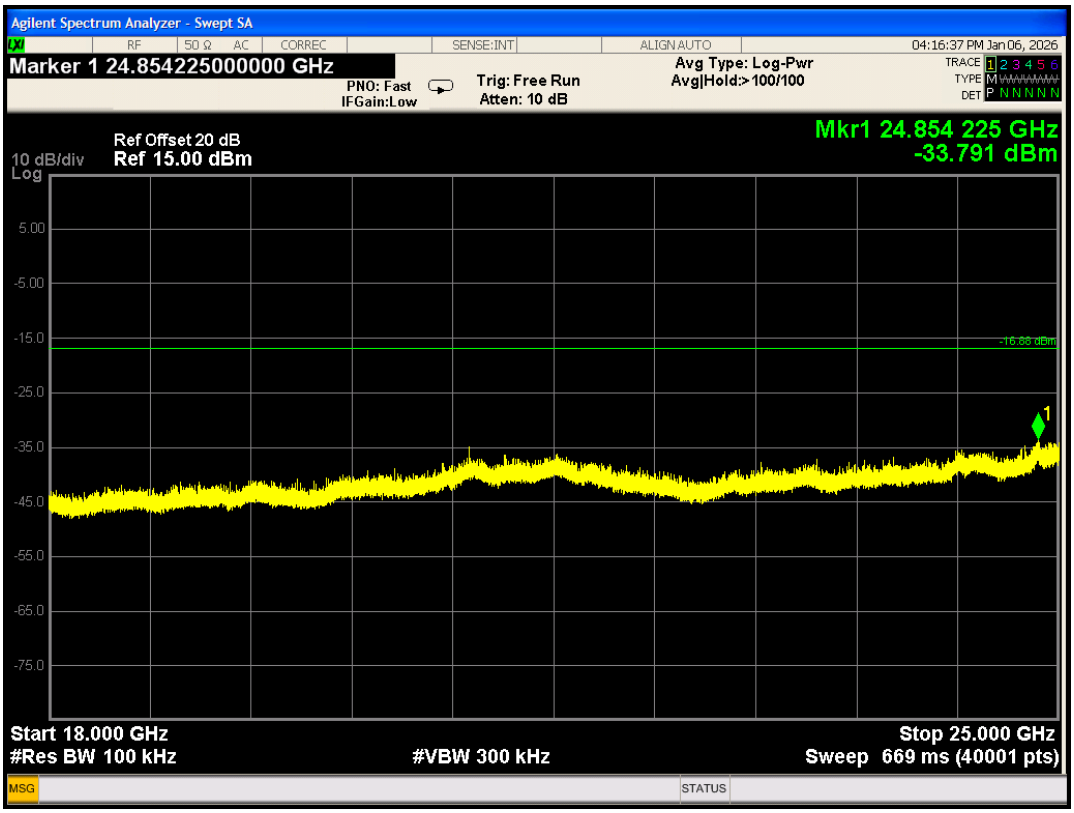
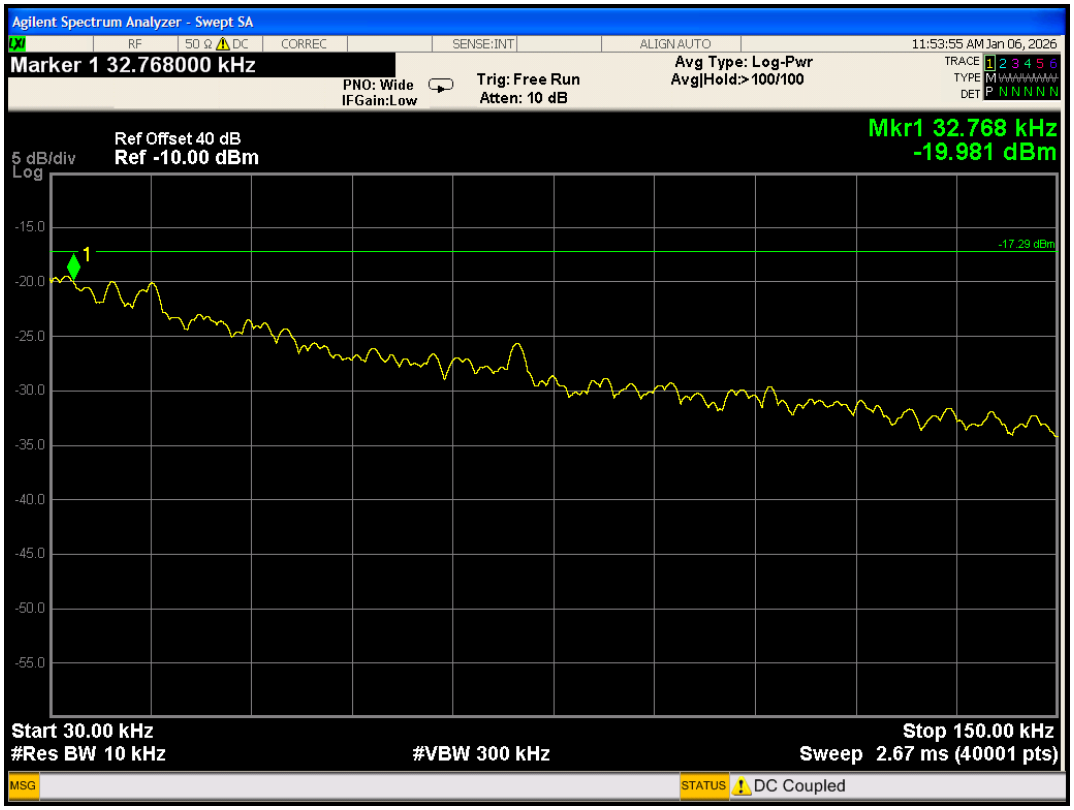
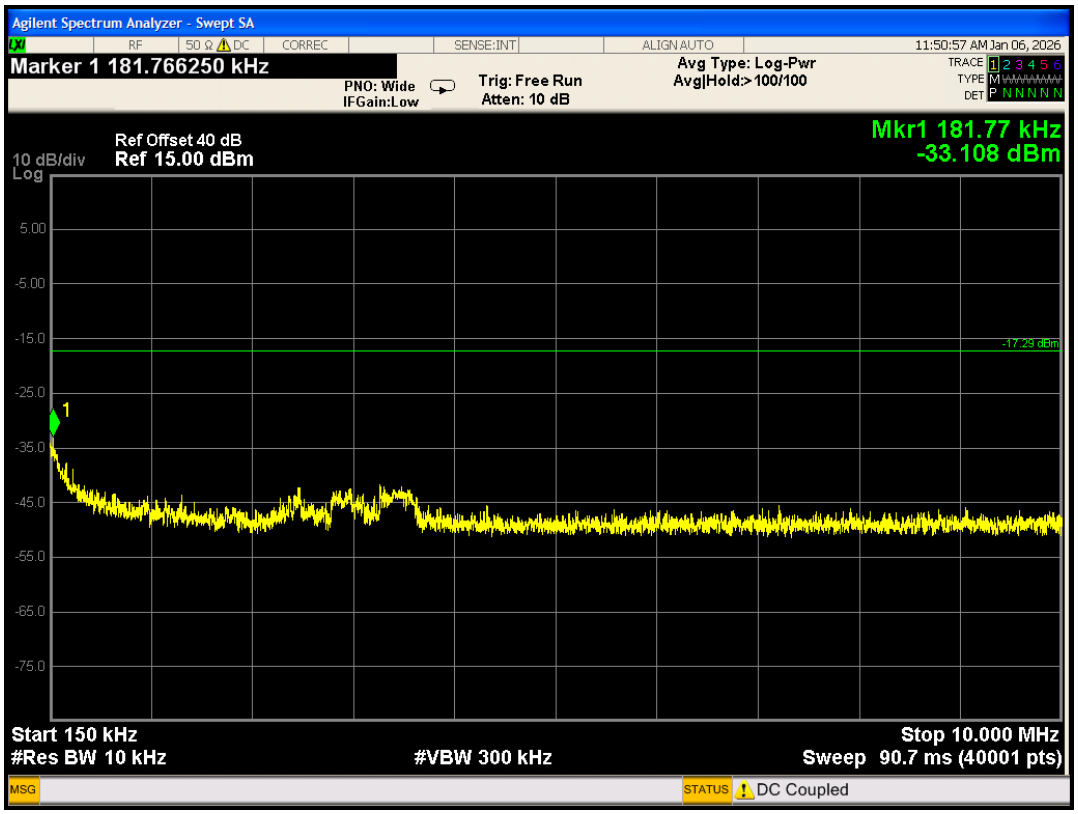


Figure 26: High Channel Conducted Spurious Plot 1



* for this plot: the RBW setting was reduced to 10kHz to ensure the measurement system remained linear at the lower edge of the investigation band. A reference level offset of +20dB was introduced into the spectrum analyzer as an amplitude correction from 20LOG(100/10). The limit remains the same, as defined by the transmitter, and the emission levels reported are final and corrected.

Figure 27: High Channel Conducted Spurious Plot 2



* for this plot: the RBW setting was reduced to 10kHz to ensure the measurement system remained linear at the lower edge of the investigation band. A reference level offset of +20dB was introduced into the spectrum analyzer as an amplitude correction from 20LOG(100/10). The limit remains the same, as defined by the transmitter, and the emission levels reported are final and corrected.

Figure 28: High Channel Conducted Spurious Plot 3

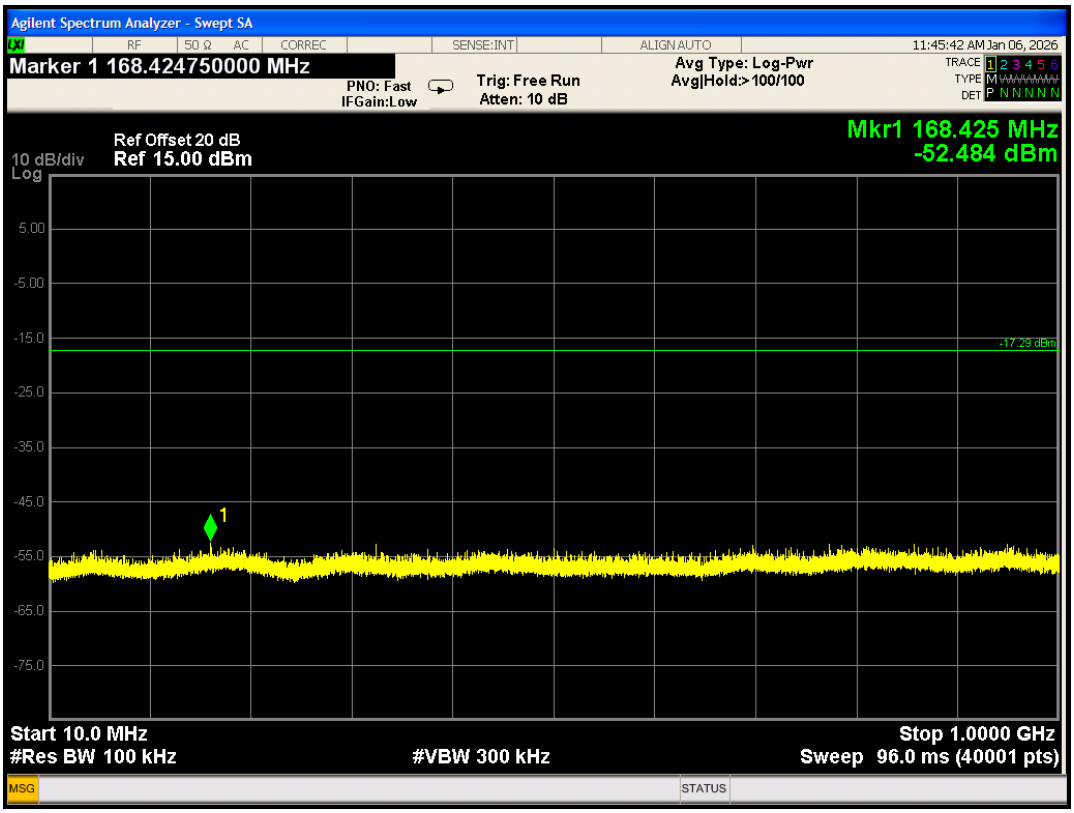


Figure 29: High Channel Conducted Spurious Plot 4

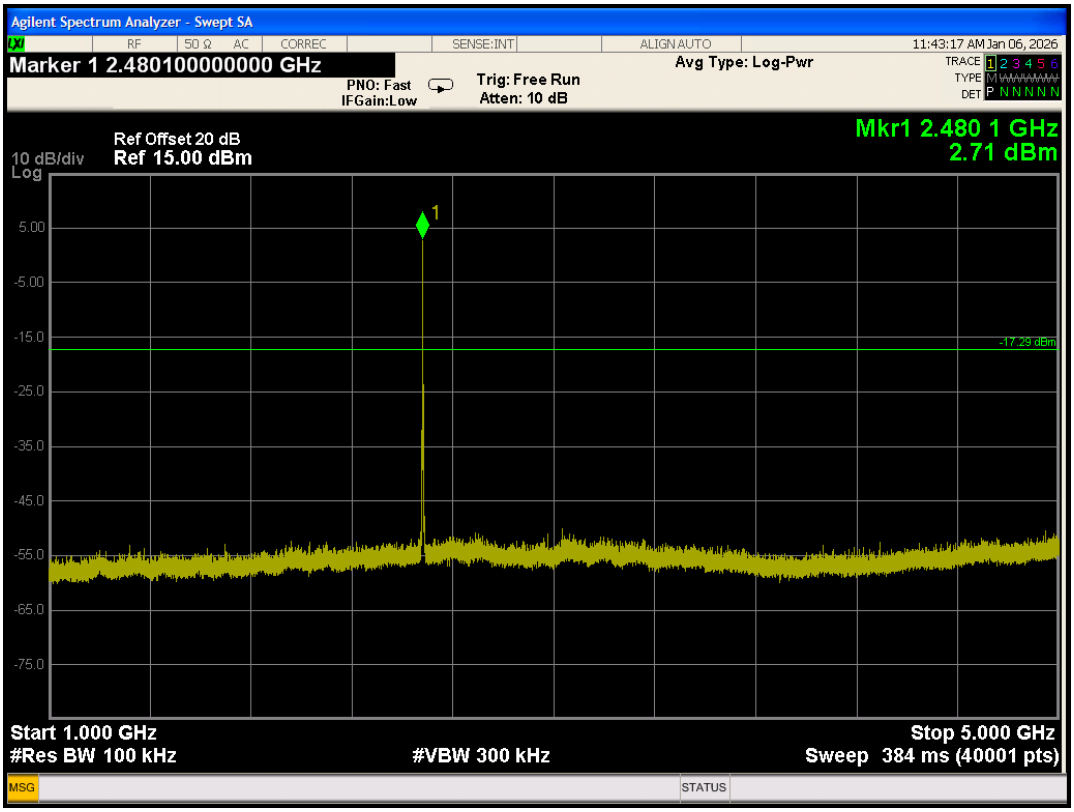


Figure 30: High Channel Conducted Spurious Plot 5

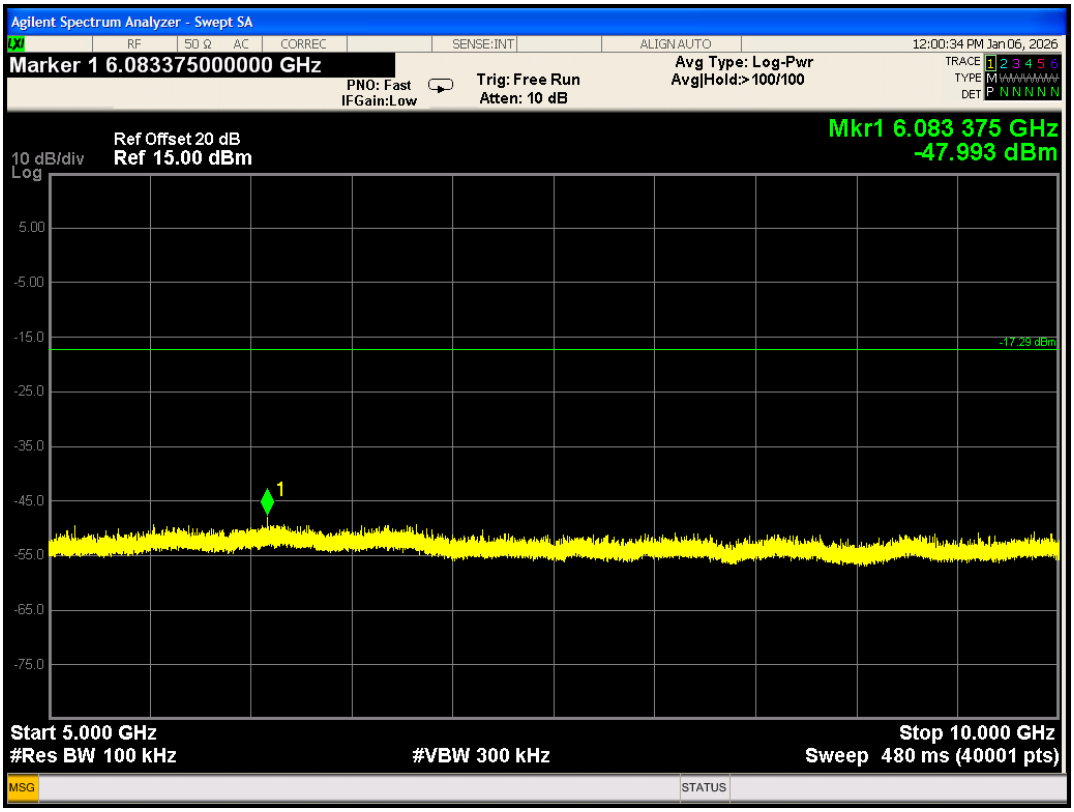


Figure 31: High Channel Conducted Spurious Plot 6

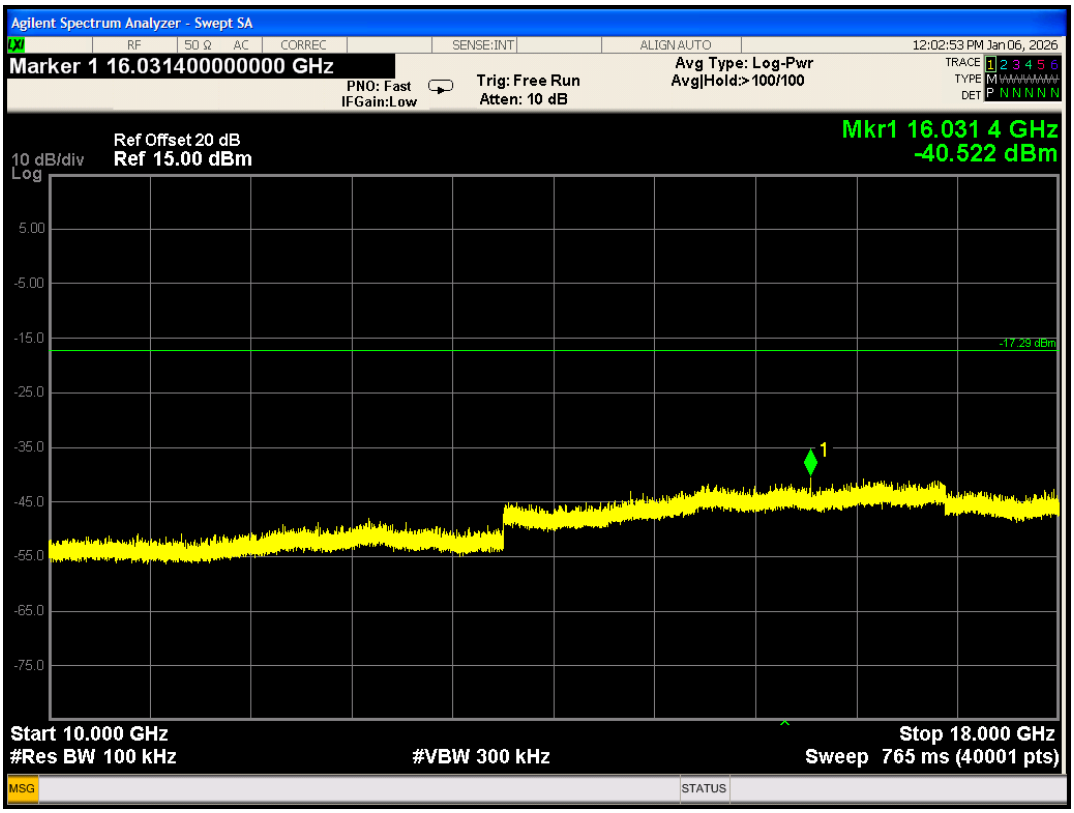
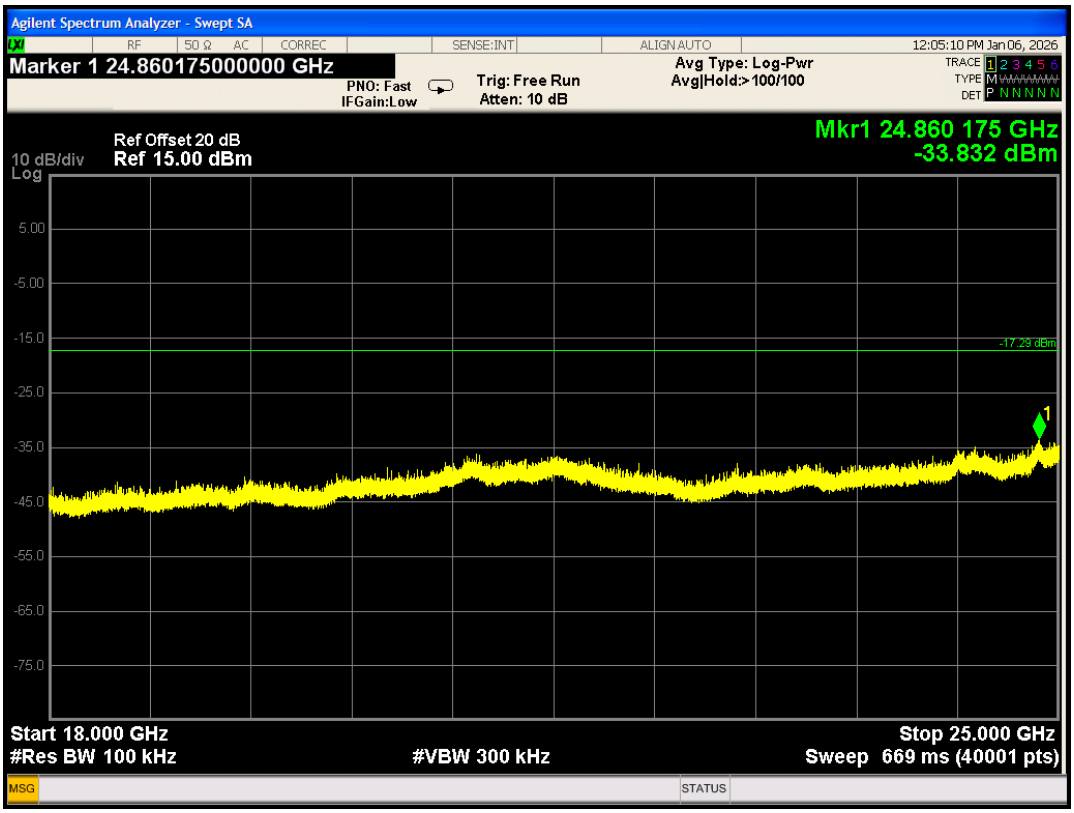


Figure 32: High Channel Conducted Spurious Plot 7



3.8 Radiated Emissions

3.8.1 Requirements

Compliance Standard: FCC Part 15.247, 15.209, 15.205

Radiated Emissions, Compliance Limits		
Frequency Range	3-meter test site	
30 to 88 MHz	100 µV/m (QP)	40.0 dBµV/m (QP)
88 to 216 MHz	150 µV/m (QP)	43.5 dBµV/m (QP)
216 to 960 MHz	200 µV/m (QP)	46.0 dBµV/m (QP)
> 960 MHz	500 µV/m (AVG)	54.0 dBµV/m (AVG)

3.8.2 Test Procedure

All testing in this section was performed at a distance of 3-meters. For radiated testing between 25kHz and 30MHz the EUT was placed on an 80 cm high non-conductive turn-table and scanned for emissions using an active loop receiver antenna, mounted at a fixed-height of 1-meter. The loop antenna was rotated about its vertical and horizontal axis in accordance with ANSI C63.10-2020, clause 6.4.6 and 6.11.2 and the EUT orthogonal plane was varied (x, y, z,). For radiated testing above 30MHz, but less than 1GHz, the EUT was placed on a 1m X 1.5m non-conductive motorized turntable at a height of 80cm. For frequencies above 1GHz, a test height of 1.5m is employed. An initial pre-scan of the EUT was performed to identify any emissions that exceed, or come within 6dB of, the applicable limit. This pre-scan was performed a with the employment of a spectrum analyzer peak detector function. The highest amplitude (worst-case) emissions noted during the pre-scan were selected for final compliance measurements. Above 30MHz, the emissions from the EUT were measured continuously at every azimuth by rotating the turntable. Broadband log periodic and double-ridged horn antennas were mounted on an antenna mast to determine the height of maximum emissions. The height of the antenna was varied between 1 and 4 meters. The output of the antenna was connected to the input of the spectrum analyzer and the emissions in the frequency range of 30MHz to 25GHz were evaluated. The EUT peripherals were placed on the table in accordance with ANSI C63.4. Cables were varied in position to produce maximum emissions. Both the horizontal and vertical field components were measured. The detector function was set to quasi-peak for final measurements below 1 GHz. The measurement bandwidth of the spectrum analyzer system was set to at least 120 kHz, with all post-detector filtering no less than 10 times the measurement bandwidth. For measurements above 1 GHz, both the peak and the average levels are recorded, using a measurement bandwidth of 1 MHz. For average measurements, a video bandwidth setting of 10 Hz was used, in the case of video averaging; otherwise, an EMI AVG detector shall be employed.

3.8.3 Radiated Data Reduction and Reporting

To convert the raw spectrum analyzer radiated data into a form that can be compared with the FCC limits, it is necessary to account for various calibration factors that are supplied with the antennas and other measurement accessories. These factors are included into the antenna factor (AF) column of the table and in the cable factor (CF) column of the table. The AF (in dB/m) and the CF (in dB) is algebraically added to the raw Spectrum Analyzer Voltage in dBµV to obtain the Radiated Electric Field in dBµV/m. This logarithm amplitude is converted to a linear amplitude, then compared to the FCC limit.

Example:

Spectrum Analyzer Voltage:	dBµV
Antenna Correction Factor:	AFdB/m
Cable Correction Factor:	CFdB
Pre-Amplifier Gain:	GdB
Electric Field:	dBµV/m = dBµV + AFdB/m + CFdB - GdB
Convert to linear Unit:	dBµV/m/20 Inv log

3.8.4 Test Data

The EUT was tested from 25kHz to 25GHz. This range covers the lowest frequency generated by the EUT. It also covers the tenth harmonic of the fundamental. A complete investigation of the radiated fundamental field strength was performed. The EUT was evaluated in three orthogonal axes (x, y, z).

The Z-axis produced the highest radiated power (see test setup photographs for reference).

The EUT was configured to transmit a modulated signal as follows:

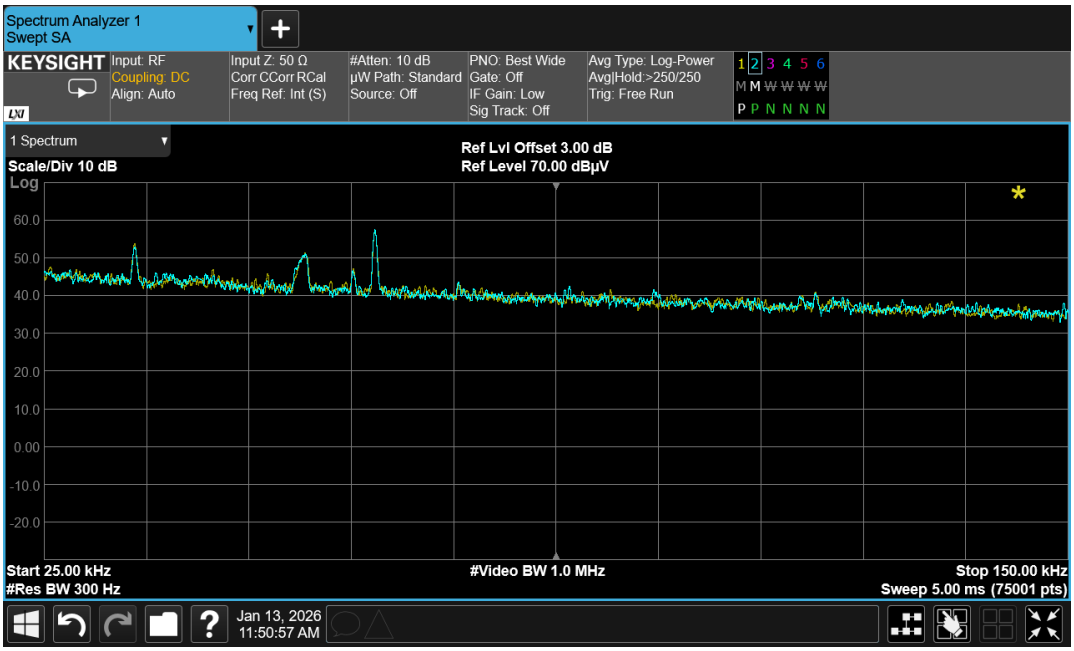
- for testing of 25kHz to 1GHz, the EUT was set to a transmit at the low channel.
- for testing of 1GHz to 25GHz, the EUT was set to transmit on the low, center, and high channels.

Please note the following:

- there are no EUT emissions detected in the range of 25kHz to 1GHz.
- there are no EUT emissions detected in the range of 5GHz to 25GHz.
- the only emissions detected from the EUT reside in the range of 1GHz to 5GHz.

The EUT complies with the Radiated Emissions requirements of 15.247(d), 15.209(a), and 15.205(a).

Figure 33: Radiated Emissions Test Data, 25kHz to 150kHz

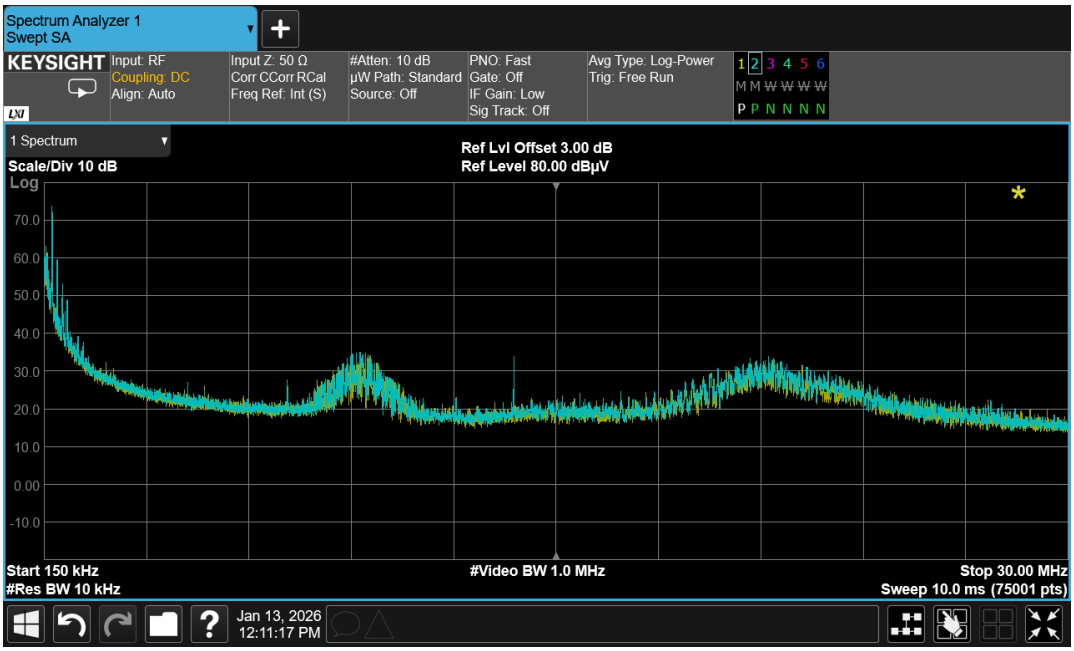


Trace 1 = EUT On

Trace 2 = Ambient

* no emissions detected from the EUT (near field investigation)

Figure 34: Radiated Emissions Test Data, 150kHz to 30MHz



Trace 1 = EUT On

Trace 2 = Ambient

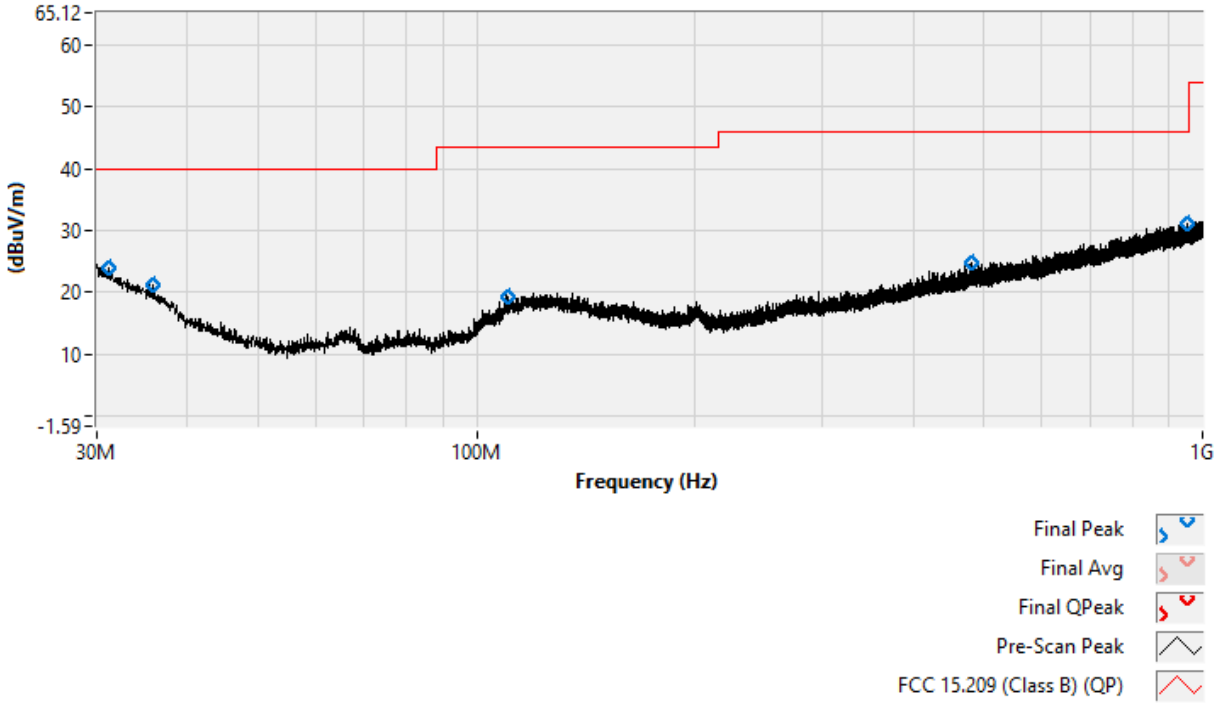
* no emissions detected from the EUT (near field investigation)

Table 9: Radiated Emissions Test Data, 30MHz to 1GHz, Worst-Case

Frequency (MHz)	Detector	Corr. Meas (dBuV/m)	QP Limit (dBuV/m)	Delta (dB)	Turn Table (deg)	Antenna (cm)
31.080 *	Peak	24.051	40	-15.949	335	Vert, 100
35.821 *	Peak	21.113	40	-18.887	335	Vert, 100
110.348 *	Peak	19.285	43.5	-24.215	335	Vert, 100
481.905 *	Peak	24.771	46	-21.229	335	Vert, 100
954.582 *	Peak	30.986	46	-15.014	335	Vert, 100

* Ambient

3-meter RE, Pre-scan and Final Data (Vertical)



3-meter RE, Pre-scan and Final Data (Horizontal)

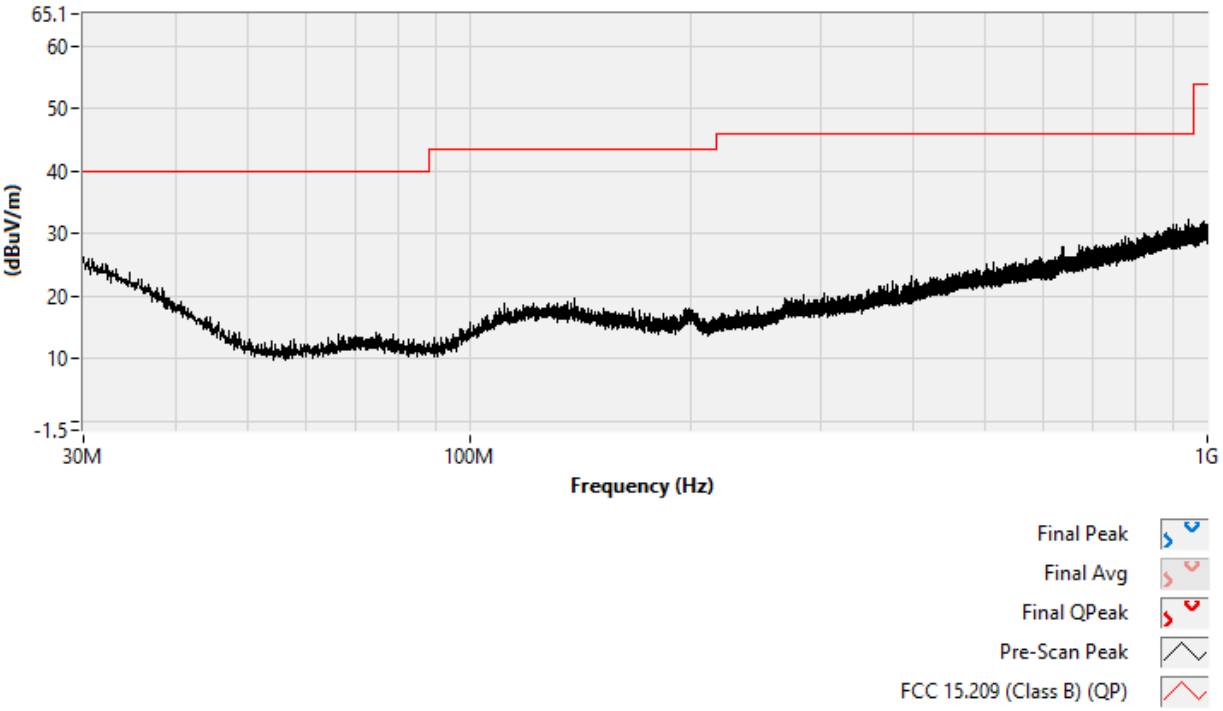
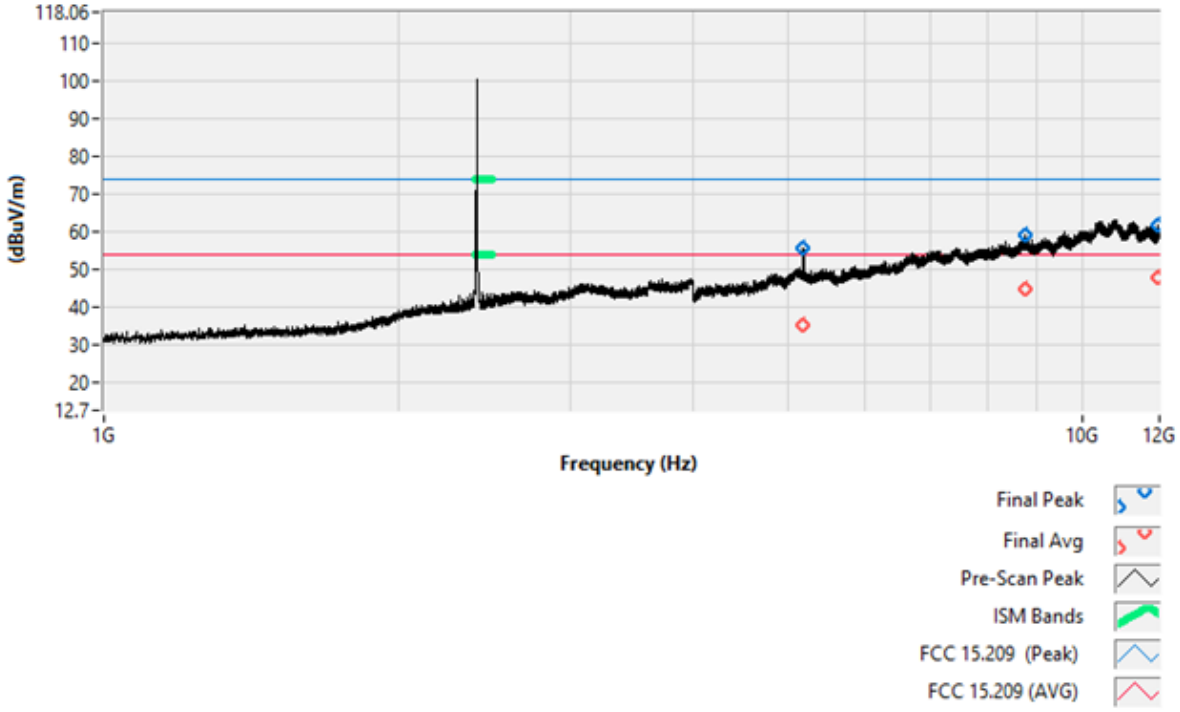


Table 10: Radiated Emissions Test Data, Low Channel TX, 1GHz to 25GHz, Worst-Case

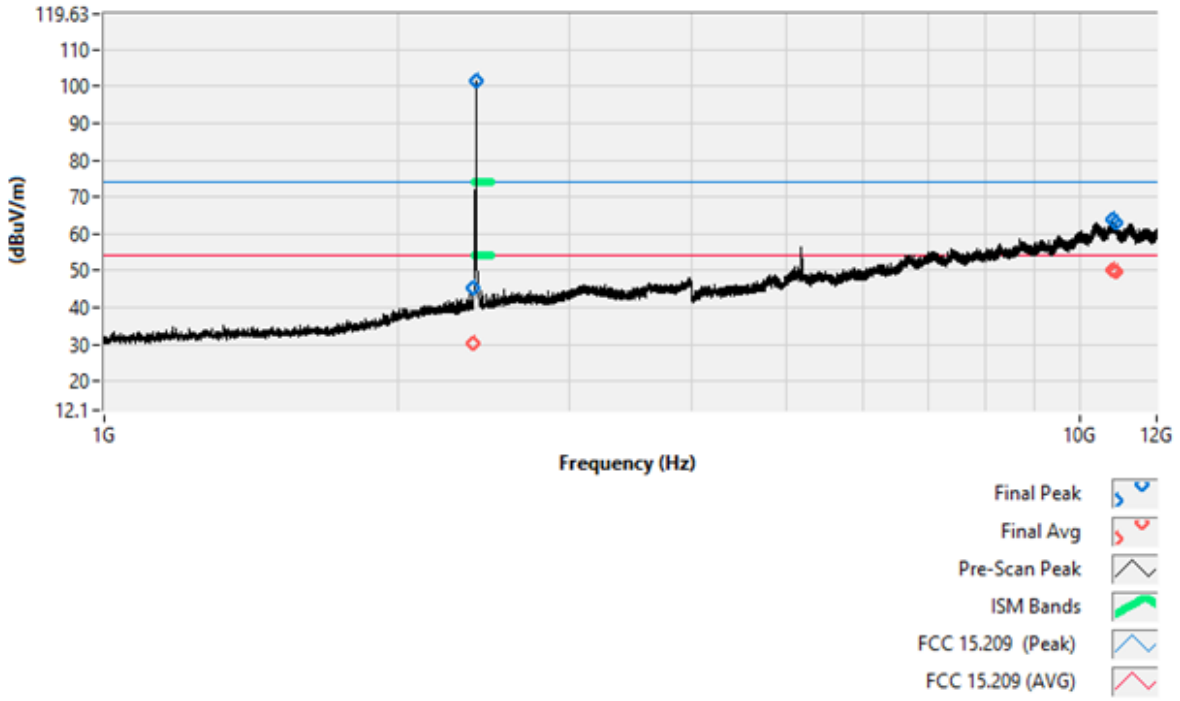
Frequency (GHz)	Detector	Corr. Meas (dBuV/m)	Limit (dBuV/m)	Delta (dB)	Turn Table (deg)	Antenna (cm)
2.390 BE	Peak	45.223	74	-28.777	340	Horiz, 175
	Avg	30.281	54	-23.719	340	Horiz, 175
2.405 TX	Peak	101.899	--	--	340	Horiz, 175
	Avg	--	--	--	340	Horiz, 175
5.173 *	Peak	55.686	74	-18.314	355	Vert, 105
	Avg	35.391	54	-18.609	355	Vert, 105
8.747 *	Peak	59.089	74	-14.911	355	Vert, 105
	Avg	44.663	54	-9.337	355	Vert, 105
11.960 *	Peak	61.800	74	-12.200	355	Vert, 155
	Avg	47.895	54	-6.105	355	Vert, 155
12.491 *	Peak	58.469	74	-15.531	340	Vert, 155
	Avg	42.794	54	-11.206	355	Vert, 155
15.673 *	Peak	62.121	74	-11.879	340	Horiz, 155
	Avg	46.296	54	-7.704	355	Horiz, 155

* Ambient

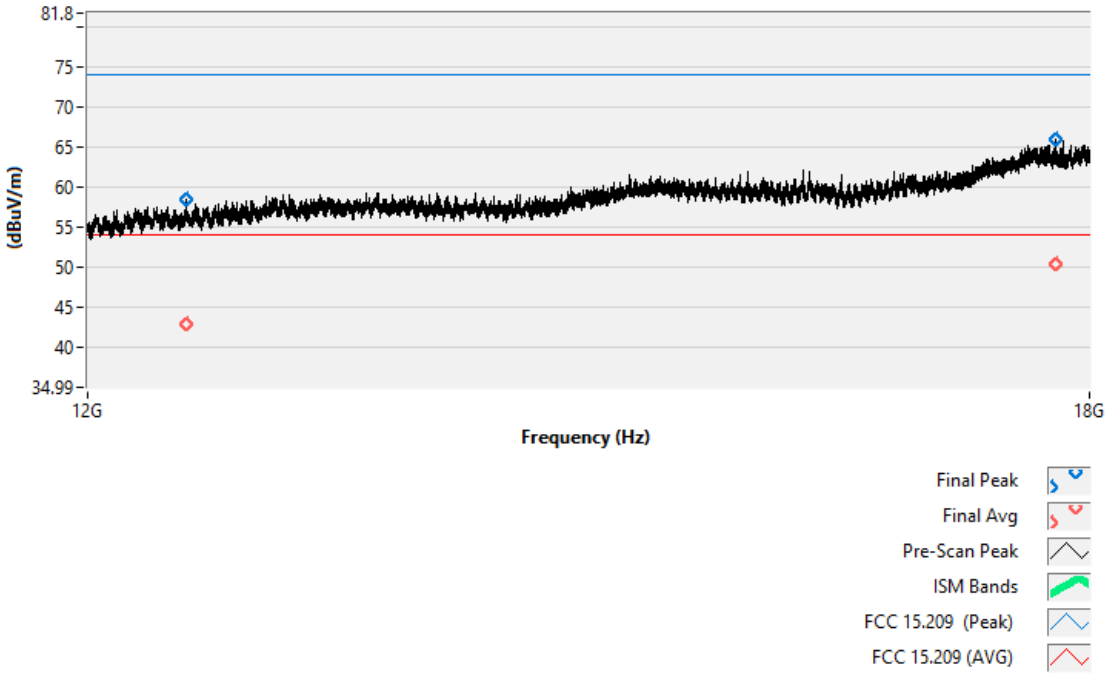
Low Channel TX, 3-meter RE, Pre-scan and Final Data (Vertical)



Low Channel TX, 3-meter RE, Pre-scan and Final Data (Horizontal)



Low Channel TX, 3-meter RE, Pre-scan and Final Data (Vertical)



Low Channel TX, 3-meter RE, Pre-scan and Final Data (Horizontal)

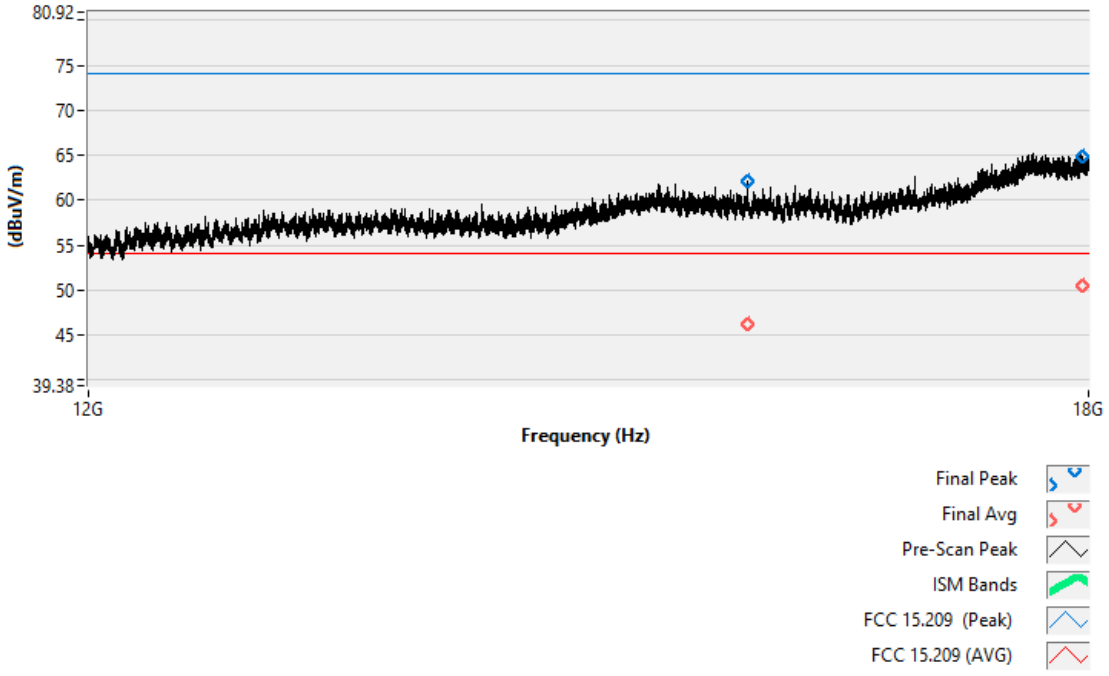
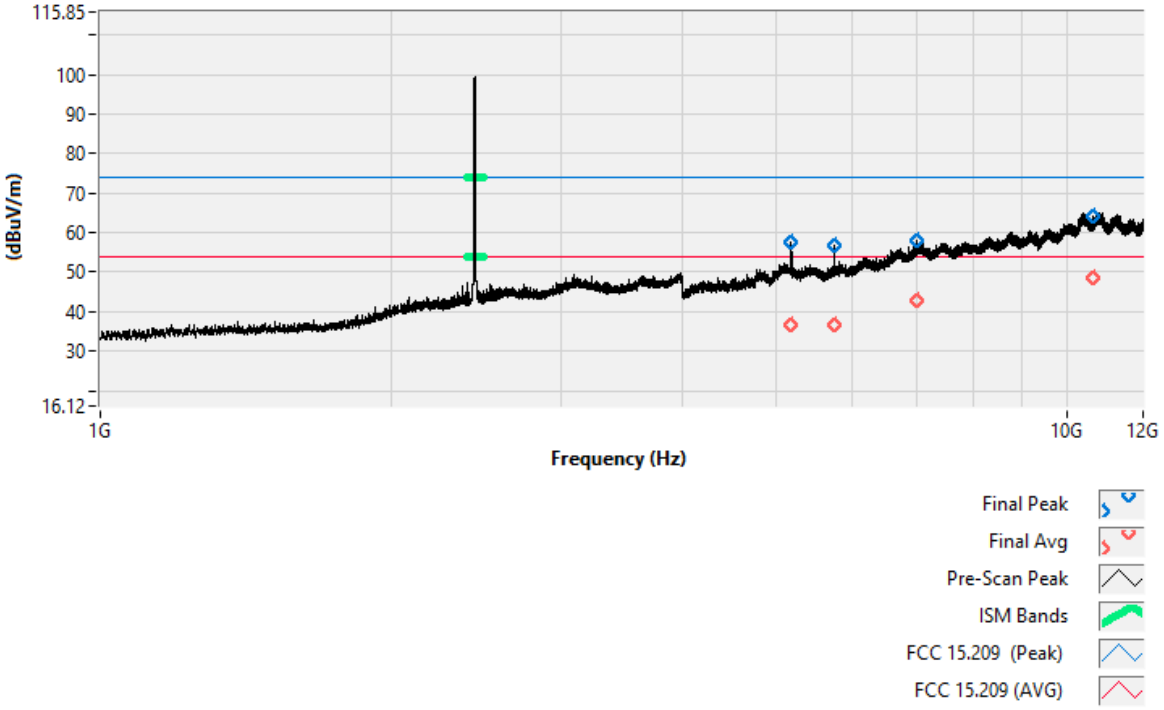


Table 11: Radiated Emissions Test Data, Center Channel TX, 1GHz to 25GHz, Worst-Case

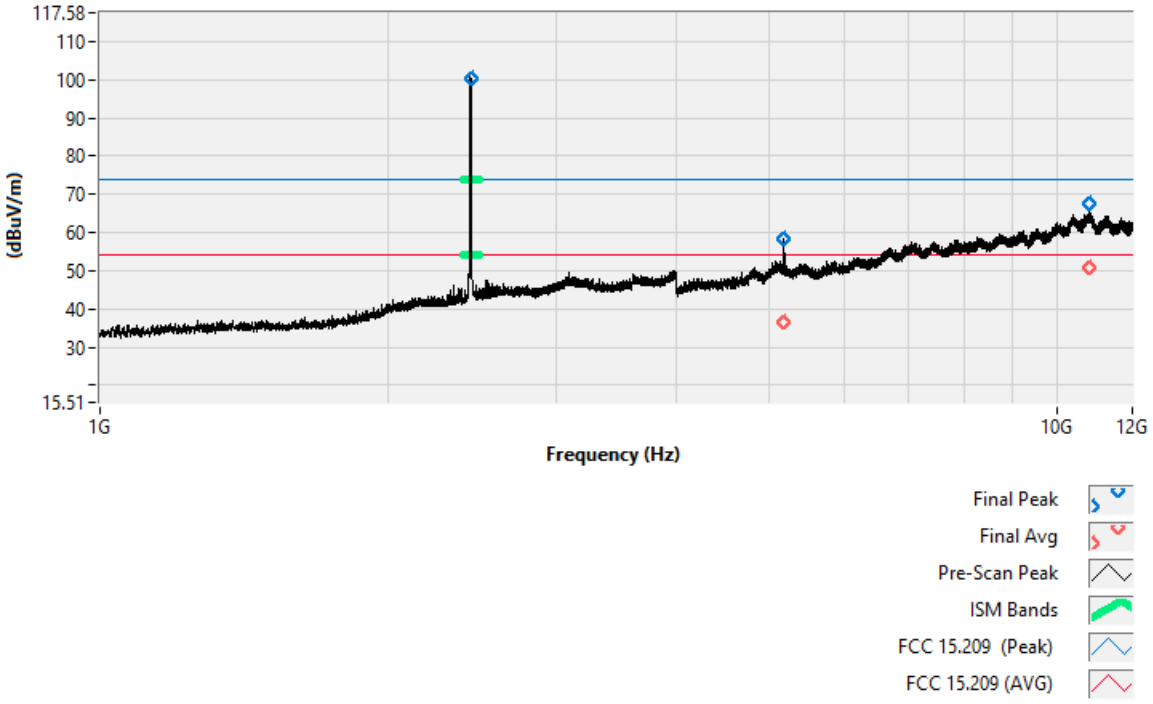
Frequency (GHz)	Detector	Corr. Meas (dBuV/m)	Limit (dBuV/m)	Delta (dB)	Turn Table (deg)	Antenna (cm)
2.440 TX	Peak	100.589	--	--	340	Horiz, 175
	Avg	--	--	--	340	Horiz, 175
5.182 *	Peak	58.388	74	-15.612	340	Horiz, 175
	Avg	36.599	54	-17.401	340	Horiz, 175
7.003 *	Peak	58.182	74	-15.818	355	Vert, 105
	Avg	42.710	54	-11.290	355	Vert, 105
10.659 *	Peak	64.333	74	-9.667	355	Vert, 105
	Avg	47.803	54	-6.197	355	Vert, 105
12.043 *	Peak	54.896	74	-19.104	340	Horiz, 155
	Avg	41.433	54	-12.567	355	Horiz, 155
13.740 *	Peak	57.433	74	-16.567	340	Horiz, 155
	Avg	43.540	54	-10.46	355	Horiz, 155
15.767 *	Peak	59.363	74	-14.637	340	Horiz, 155
	Avg	45.578	54	-8.422	355	Horiz, 155

* Ambient

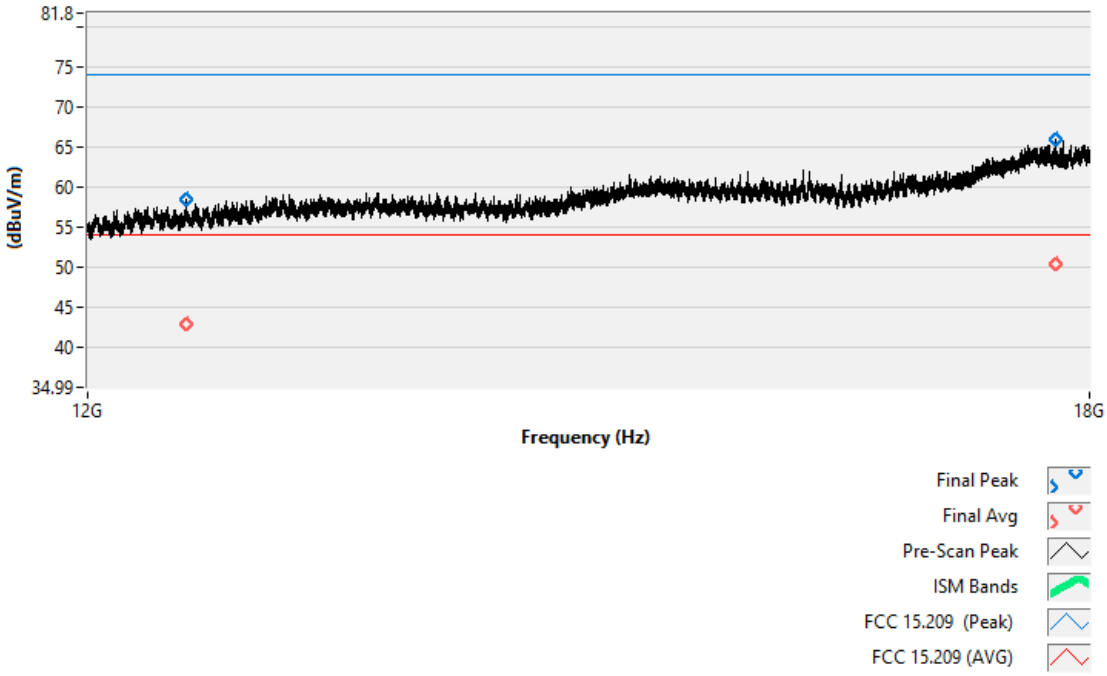
Center Channel TX, 3-meter RE, Pre-scan and Final Data (Vertical)



Center Channel TX, 3-meter RE, Pre-scan and Final Data (Horizontal)



Center Channel TX, 3-meter RE, Pre-scan and Final Data (Vertical)



Center Channel TX, 3-meter RE, Pre-scan and Final Data (Horizontal)

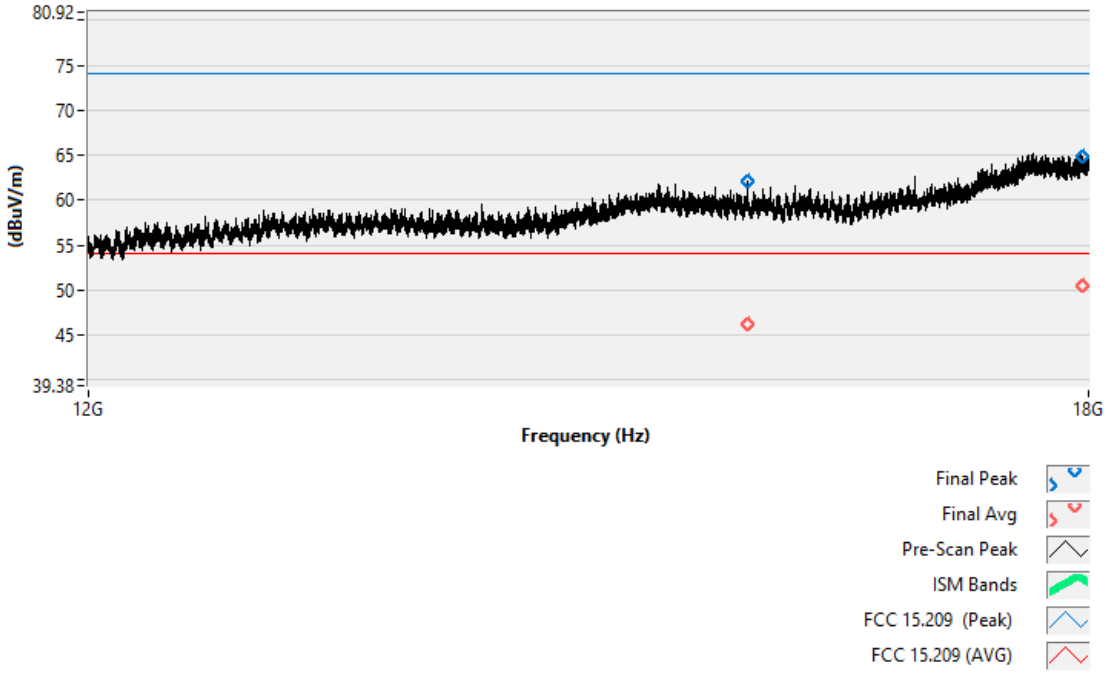
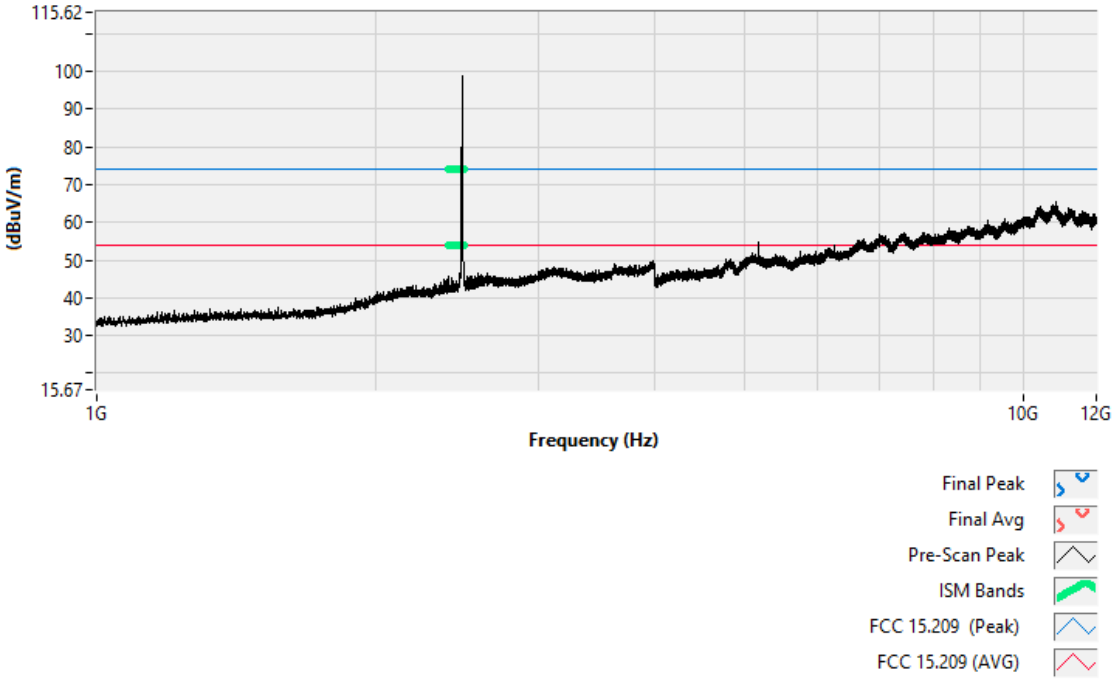


Table 12: Radiated Emissions Test Data, High Channel TX, 1GHz to 25GHz, Worst-Case

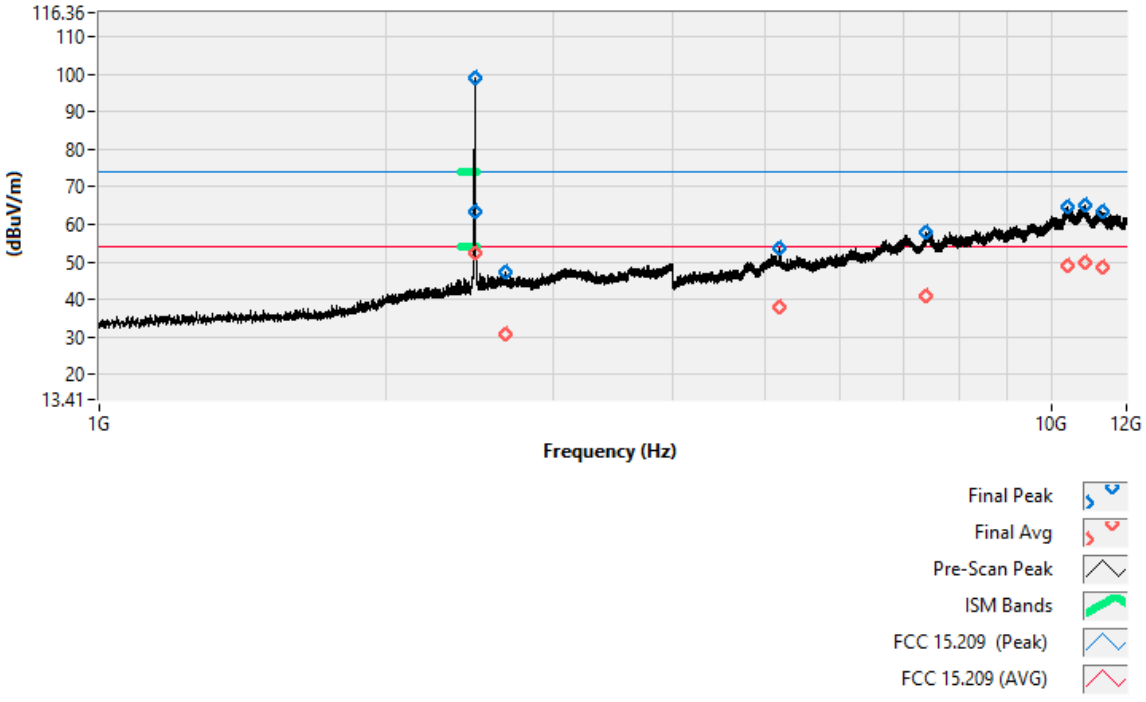
Frequency (GHz)	Detector	Corr. Meas (dBuV/m)	Limit (dBuV/m)	Delta (dB)	Turn Table (deg)	Antenna (cm)
2.480 TX	Peak	99.867	--	--	355	Horiz, 175
	Avg	--	--	--	--	--
2.4835 BE	Peak	63.338	74	-10.662	355	Horiz, 175
	Avg	52.354	54	-1.646	355	Horiz, 175
2.486 *	Peak	53.650	74	-20.350	355	Horiz, 175
	Avg	40.233	54	-13.767	355	Horiz, 175
5.173 *	Peak	53.788	74	-20.212	355	Horiz, 175
	Avg	38.081	54	-15.919	355	Horiz, 175
7.386 *	Peak	58.070	74	-15.930	355	Horiz, 175
	Avg	40.748	54	-13.252	355	Horiz, 175
13.050 *	Peak	57.352	74	-16.648	340	Vert, 155
	Avg	42.983	54	-11.017	270	Vert, 155
16.485 *	Peak	59.858	74	-14.142	340	Vert, 155
	Avg	45.888	54	-8.112	270	Vert, 155

* Ambient

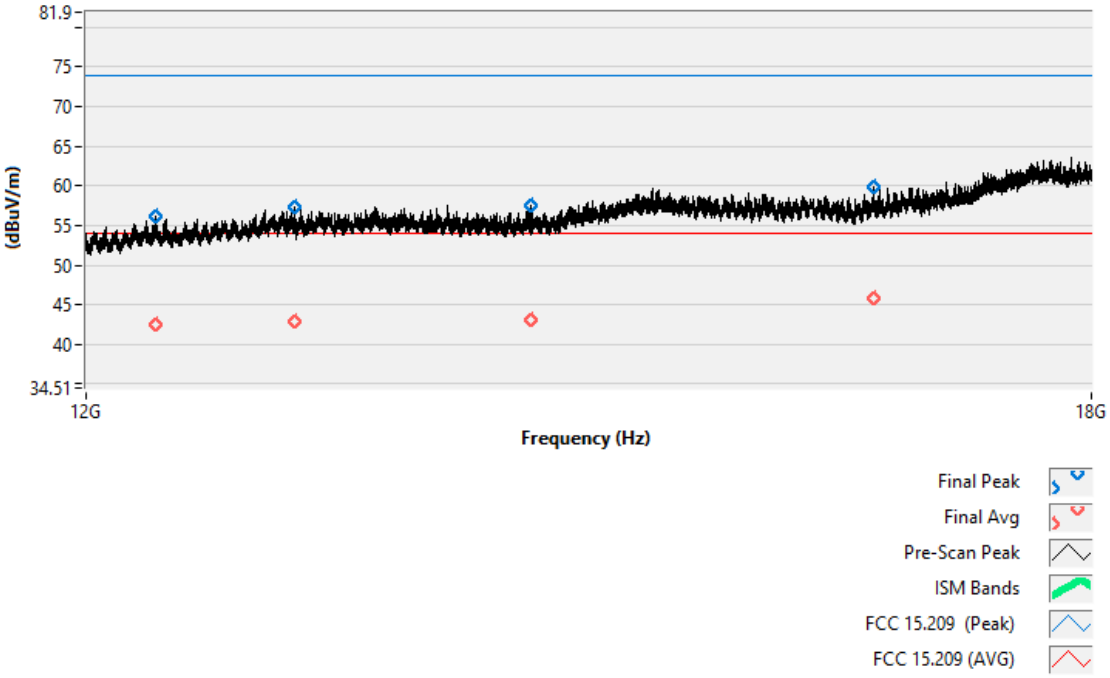
High Channel TX, 3-meter RE, Pre-scan and Final Data (Vertical)



High Channel TX, 3-meter RE, Pre-scan and Final Data (Horizontal)



High Channel TX, 3-meter RE, Pre-scan and Final Data (Vertical)



High Channel TX, 3-meter RE, Pre-scan and Final Data (Horizontal)

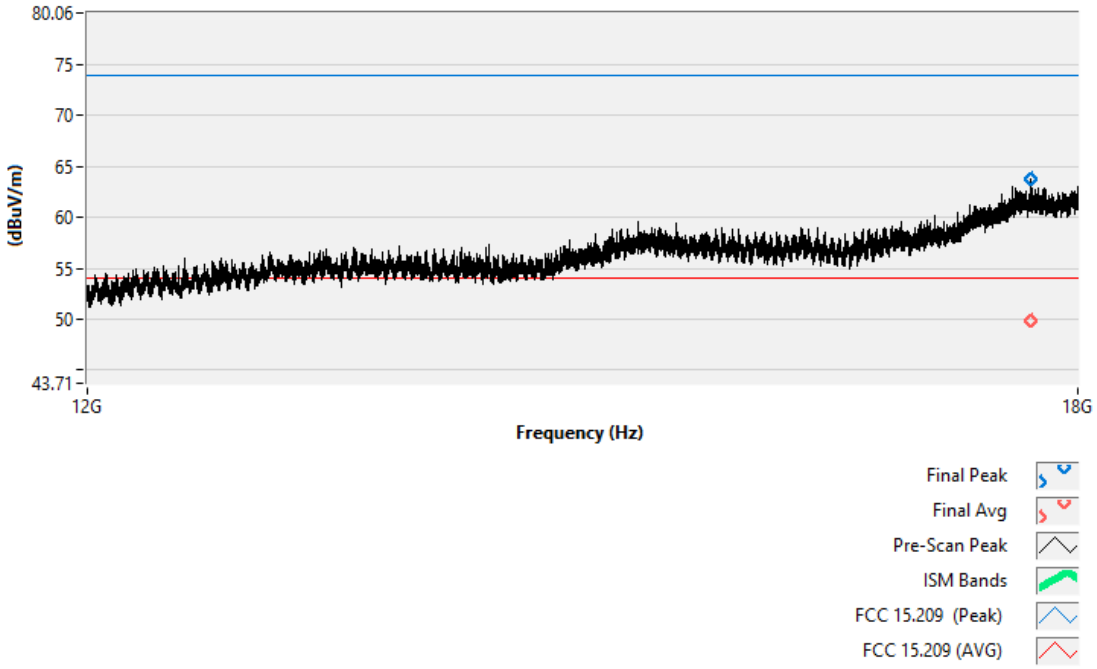
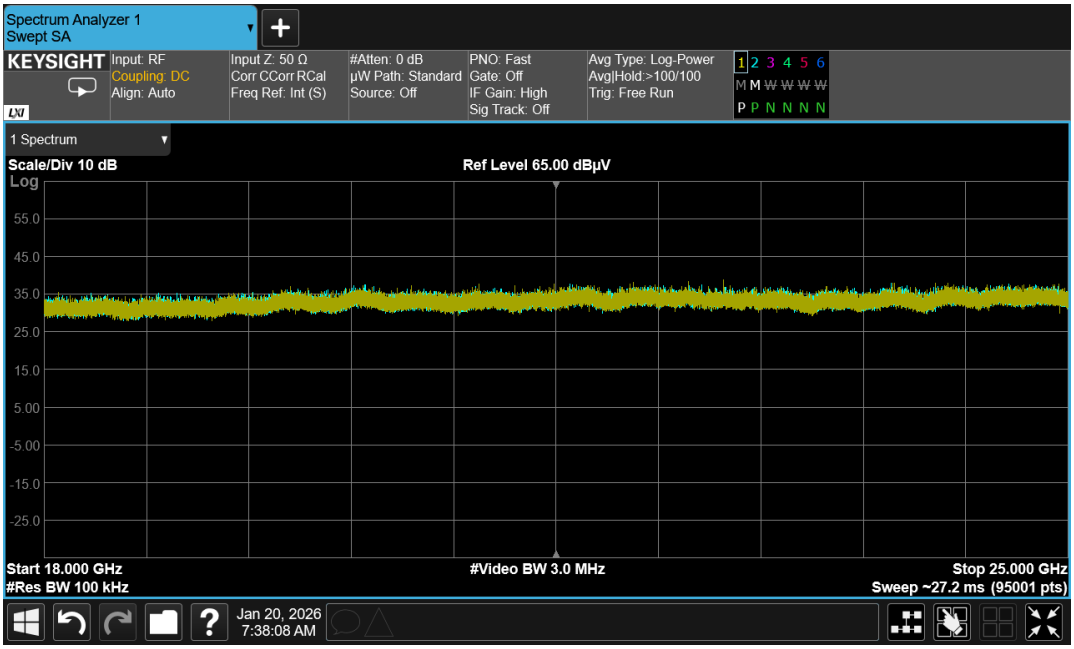


Figure 35: Radiated Emissions Test Data, 18GHz to 25GHz (All Channels)



Trace 1 = EUT On

Trace 2 = Ambient

* no emissions detected from the EUT (near field investigation)

4 Test Equipment

The tables below provides a list of the test equipment used for measurements along with the calibration information.

Table 13: Test Equipment List

Test Name:	**Radiated Emissions**	Test Dates: 1/7/2026 to 1/20/2026	
Asset #	**Manufacturer/Model**	**Description**	**Cal. Due**
00823	AGILENT , N9010A	EXA SPECTRUM ANALYZER	6/21/2026
00993	KEYSIGHT, N9020B	MXA SIGNAL ANALYZER	12/23/2027
00644	SUNOL SCIENCES CORP., JB1	BICONALOG ANTENNA	12/2/2026
00425	ARA, DRG-118/A	HORN ANTENNA	6/25/2028
00825	CABLE ASSOCIATES, MTC1010	SMA COAXIAL CABLE	6/17/2026
00865	STORM, 874-0101-036	LOW LOSS COAXIAL CABLE	6/6/2026
00885	UTIFLEX MICRO, UFA2108	SMA COAXIAL CABLE	6/6/2026
01042	THE EMC SHOP, PA2500M-B	30DB RF PRE-AMPLIFIER, 2.5GHZ	9/24/2026
00066	HP, BZ-01002650-401545-282525	HF PRE-AMPLIFIER, 26.5GHZ	8/25/2026
01029	RF-LAMDA, RW62HORN20B	HORN ANTENNA	8/8/2027
00031	EMCO, 6502	ANTENNA ACTIVE LOOP	6/17/2027
00731	NARDA, 4779-3	2W, 3DB ATTENUATOR	6/6/2026
--	WEINSCHEL, 20DB	10W, 20DB ATTENUATOR	Cal. Before Use.

Test Name:	**Conducted RF Emissions**	1/6/2026 to 1/7/2026	
Asset #	**Manufacturer/Model**	**Description**	**Cal. Due**
00823	AGILENT N9010A	EXA SPECTRUM ANALYZER	6/21/2026
00993	KEYSIGHT N9020B	MXA SIGNAL ANALYZER	12/23/2027
00885	UTIFLEX MICRO, UFA2108	SMA COAXIAL CABLE	6/6/2026
00731	NARDA, 4779-3	2W, 3DB ATTENUATOR	6/6/2026
--	WEINSCHEL, 20DB	10W, 20DB ATTENUATOR	Cal. Before Use.

5 Measurements

5.1.1 References

ANSI C63.2 (Jan-2016) Specifications for Electromagnetic Noise and Field Strength Instrumentation

ANSI C63.4 (Jan 2014) American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

ANSI C63.10-2020/Cor 1-2021: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

5.2 Measurement Uncertainty

All results reported herein relate only to the equipment tested. The basis for uncertainty calculation uses ANSI/NCSL Z540-2-1997 (R2002) with a type B evaluation of the standard uncertainty. Elements contributing to the standard uncertainty are combined using the method described in Equation 1. to arrive at the total standard uncertainty. The standard uncertainty is multiplied by the coverage factor to determine the expanded uncertainty which is generally accepted for use in commercial, industrial, and regulatory applications and when health and safety are concerned (see Equation 2). A coverage factor was selected to yield a 95% confidence in the uncertainty estimation.

Equation 1: Standard Uncertainty

$$u_c = \pm\sqrt{\frac{a^2}{div_a{}^2} + \frac{b^2}{div_b{}^2} + \frac{c^2}{div_c{}^2} + ...}$$

where,

uc	= standard uncertainty
a, b, c,..	= individual uncertainty elements
Diva, b, c	= the individual uncertainty element divisor based on the probability distribution
Divisor	= 1.732 for rectangular distribution
Divisor	= 2 for normal distribution
Divisor	= 1.414 for trapezoid distribution

Equation 2: Expanded Uncertainty

$$U = ku_c$$

where,

U = expanded uncertainty
k = coverage factor
k ≤ 2 for 95% coverage (ANSI/NCSL Z540-2 Annex G)
uc = standard uncertainty

The measurement uncertainty complies with the maximum allowed uncertainty from CISPR 16-4-2. Measurement uncertainty is not used to adjust the measurements to determine compliance. The expanded uncertainty values for the various scopes in the WLL accreditation are provided in the table below.

Table 14: Expanded Uncertainty List

Scope	Standard(s)	Expanded Uncertainty
Conducted Emissions	CISPR11, CISPR22, CISPR32, CISPR14, FCC Part 15	± 2.63 dB
Radiated Emissions	CISPR11, CISPR22, CISPR32, CISPR14, FCC Part 15	± 4.55 dB

5.3 Environmental Conditions During All Measurements

Ambient Temperature:	Between 18.8 and 23.9 °C
Relative Humidity:	Between 45 and 60 %

5.4 Software Employed by the Test Laboratory

The following test and measurement software were used by the Laboratory:
(1) Amplifier Research, EMCWare Software Suite v7.0.4
(2) Keysight 2019, Update Rev. A.25.08
(3) Keysight 2023, Update Rev. A.33.03