May 28, 2025

CalAmp
Imad Rizk
2200 Faraday Ave, Suite 220
Carlsbad, CA 92008

Dear Imad Rizk,

Enclosed is the Electromagnetic Compatibility for the CalAmp, ATU1650MB, tested to the requirements of:

- FCC Part 15.247 (per ANSI C63.10: 2020)
- Innovation, Science, and Economic Development (ISED) Canada RSS-247 Issue 3

Thank you for using the services of Eurofins E&E Testing NA, LLC. Please contact me if you have any questions regarding these results or if Eurofins E&E can be of further service to you.

Sincerely,

Rheine Nguyen

Documentation Department
Eurofins E&E Testing NA, LLC.

Reference: WIRS135823-FCC 15.247 Rev. 3

A2LA ACCREDITED TESTING CERT #0591.02

Report Status Sheet

Revision	Report Date	Reason for Revision
Ø	April 24, 2025	Initial Issue.
1	May 15, 2025	Added FCC ID and IC ID.
2	May 22, 2025	Changed Max Peak Output Power (MHz) to (dBm)
3	May 28, 2025	Transferred all photos to Photo File.

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1.0 Testing Summary

The CalAmp, ATU1650MB was found to be compliant to the following specification(s).

- FCC Part 15.247 (per ANSI C63.10: 2020)
- RSS-247 Issue 3

Chin Ming Lui
EMC Laboratory Engineer

Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated. 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 measurements made, the equipment tested is capable of operation in accordance with the requirements.

Ollie Moyrong
EMC Laboratory Manager, California

2.0 Overview

Eurofins E&E Testing NA, LLC. was contracted by CalAmp to perform testing on the ATU1650MB, under purchase order number 412315.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of CalAmp, ATU1650MB.

The results obtained relate only to the item(s) tested.

Model(s) Tested:	ATU1650MB

2.1 Test Site

All testing was performed at Eurofins E&E Testing NA, LLC., 3162 Belick St. Santa Clara, CA 95054. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology. Eurofins E&E Testing NA, LLC. has been accredited by the American Association for Laboratory Accreditation (A2LA) (Certificate #: 0591.02) in accordance with ISO/IEC 17025:2017.

2.2 FCC ID

FCC ID: ATU-1650MB
IC: 5843C-1650MB

2.3 Equipment Overview and Test Configuration

The PTCRB request serves as the EUT configuration form for the equipment overview and test configuration section.

Antenna Gain	

Antenna information was provided by the client. Eurofins E&E Testing NA, LLC did not test or verify the accuracy of the antenna information.

2.4 Modifications to the EUT

No modifications were made to the EUT.

2.5 Modifications to the Standard

No modifications were made to the Test Standard.

2.6 Disposition of EUT

The test sample including all support equipment (if any), submitted to the Electromagnetic Compatibility Lab for testing was returned to CalAmp upon completion of testing.

3.0 Electromagnetic Compatibility Criteria for Intentional Radiators

3.1 Conducted Emissions

Test Method: ANSI C63.4:2014

Test Requirements: The following standards are covered under this test:

- FCC Part 15 Subpart C §15.207
- ISED RSS-247 Issue 3 §5.2

The EUT shall meet the Class B limits as outlined in §15.207 and RSS-Gen Table 2, which apply across the 0.15-30 MHz frequency range.

Frequency Range (MHz)	Limit (dBµV) Quasi-Peak	Limit (dBµV) Average
0.15-0.5	66-56 (decreasing with log f)	56-46 (decreasing with log f)
0.5-5	56	46
5-30	60	50

Test Procedure: The EUT was placed on a non-metallic table, 80 cm above the ground plane and 40 cm from the vertical reference ground plane. Testing was conducted using a 50Ω/50µH LISN per ANSI C63.4: 2014 procedures. The frequency range from 150 kHz to 30 MHz was scanned, and measurements were made using both quasi-peak and average detectors. Any emissions within 6 dB of the limit were remeasured using the appropriate detector. Measurements were corrected using LISN and cable loss data.

Test Software Used: Nexio BAT-EMC was used to perform this test.

Test Results:

Test Standard:	FCC Part 15 Subpart C §15.207 (per ANSI C63.4: 2014), ISED RSS-247 Issue 3 §5.2 Class B
Test Name	Conducted Emissions
Test Dates:	04/09/2025 – 04/11/2025
Laboratory	Eurofins E&E Testing NA, LLC.
Test Engineer:	Chin Ming Lui
Test Results:	Compliant
Ambient Temperature (°C):	23.1
Relative Humidity (%):	42
Atmospheric Pressure (kPa):	101.3

Test Data

Frequency (MHz)	Channel	EUT Power Setting (dBm)	Duty Cycle	Duty Cycle Correction Factor
2402	Low	+5	63.2%	-3.9857

Table 1. Conducted Emissions, Duty Cycle Test Results

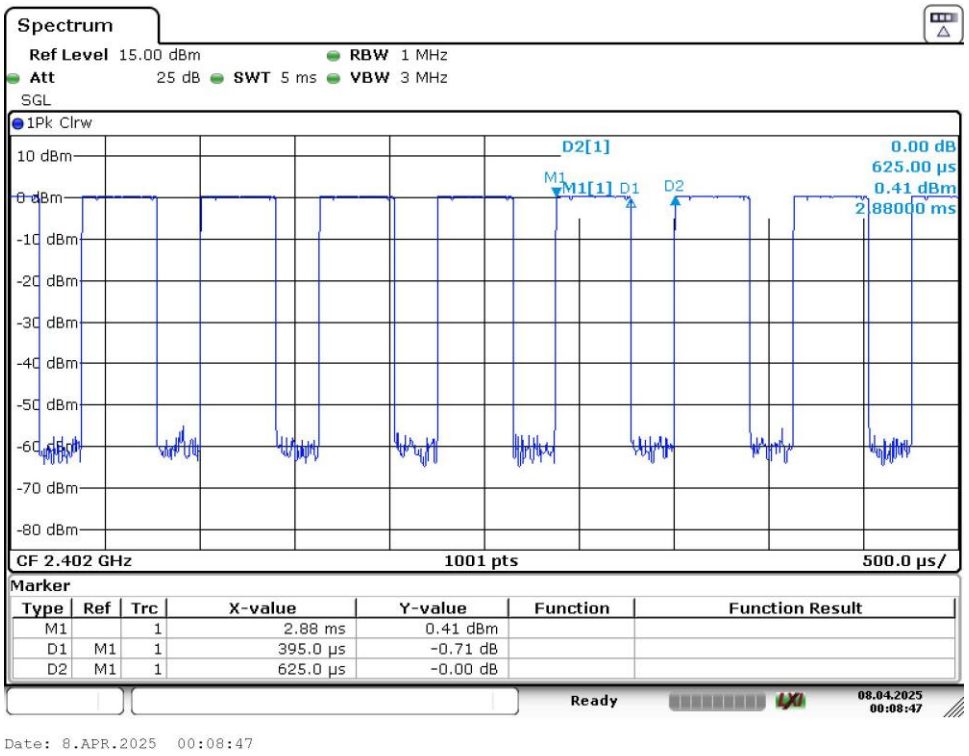

Figure 1. Conducted Emissions, Duty Cycle: Low Channel, 2402 MHz Plot

Frequency (MHz)	Channel	EUT Power Setting (dBm)	6dB BW (kHz)
2402	Low	+5	681.73
2440	Mid	+5	686.53
2480	High	+5	671.13

Table 2. Conducted Emissions, 6dB DTS Bandwidth Test Results

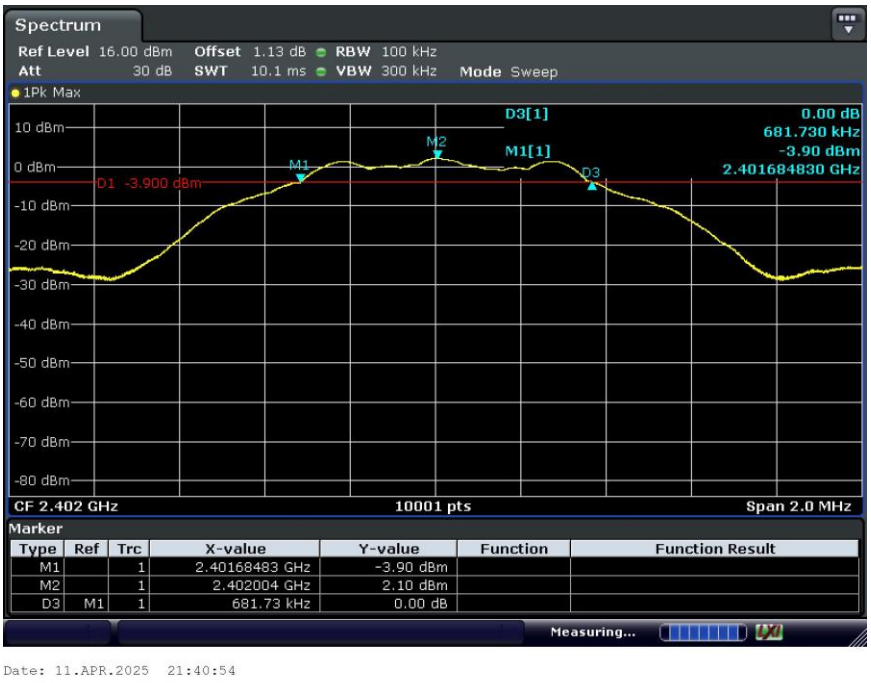

Figure 2. Conducted Emissions, 6dB DTS Bandwidth: Low Channel, 2402 MHz Plot

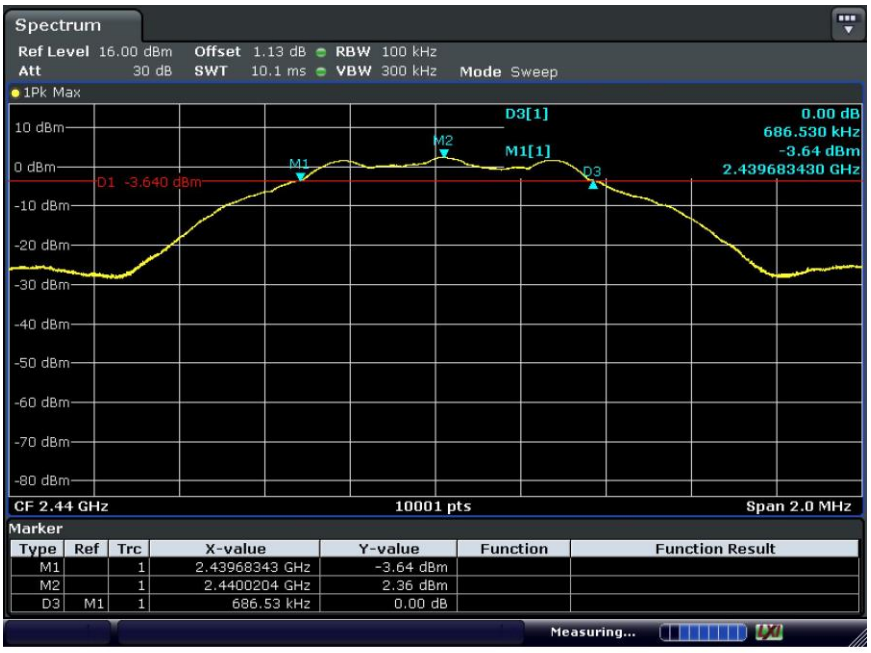

Figure 3. Conducted Emissions, 6dB DTS Bandwidth: Mid Channel, 2440 MHz Plot

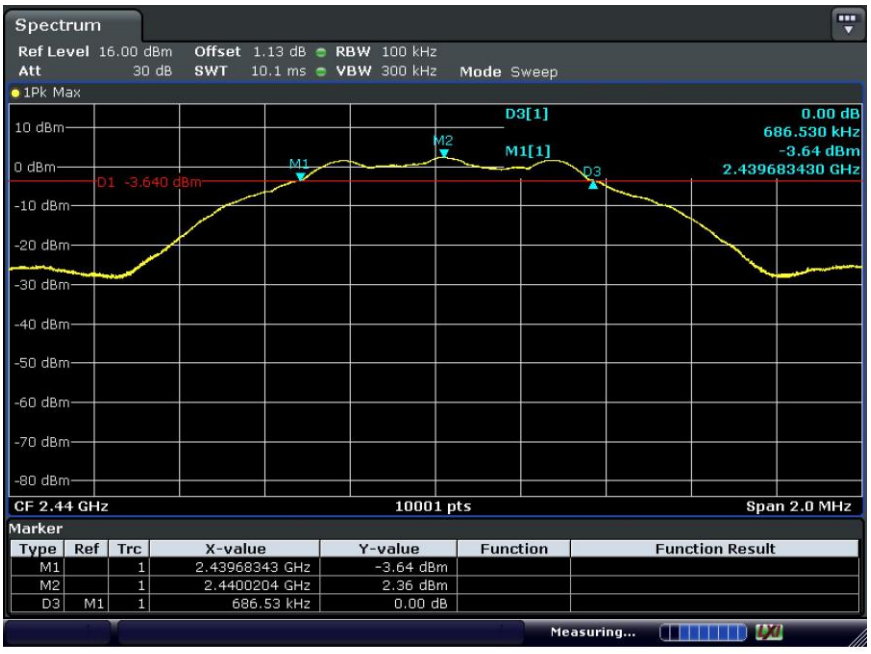

Figure 4. Conducted Emissions, 6dB DTS Bandwidth: High Channel, 2480 MHz Plot

Frequency (MHz)	Channel	EUT Power Setting (dBm)	99% OBW (MHz)
2402	Low	+5	1.0609
2440	Mid	+5	1.0593
2480	High	+5	1.0591

Table 3. Conducted Emissions, 99% OBW Test Results

Figure 5. Conducted Emissions, 99% OBW: Low Channel, 2402 MHz Plot

Figure 6. Conducted Emissions, 99% OBW: Mid Channel, 2440 MHz Plot

Figure 7. Conducted Emissions, 99% OBW: High Channel, 2480 MHz Plot

Frequency (MHz)	Channel	EUT Power Setting (dBm)	Max Peak Output Power (dBm)
2402	Low	+5	2.26
2440	Mid	+5	2.47
2480	High	+5	2.36

Table 4. Conducted Emissions, Maximum Peak Conducted Output Power Test Results

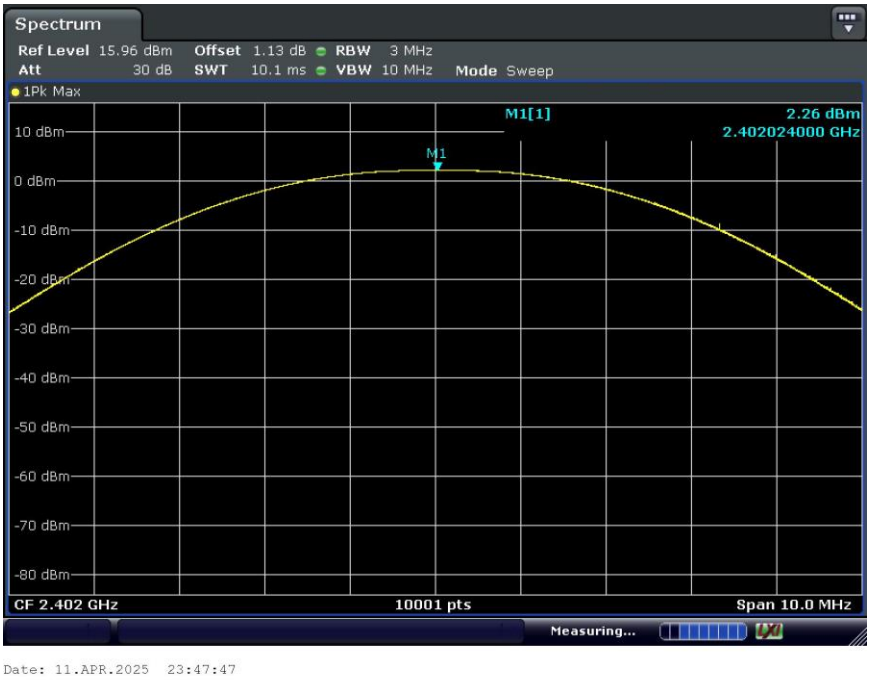

Figure 8. Conducted Emissions, Maximum Peak Conducted Output Power: Low Channel, 2402 MHz Plot

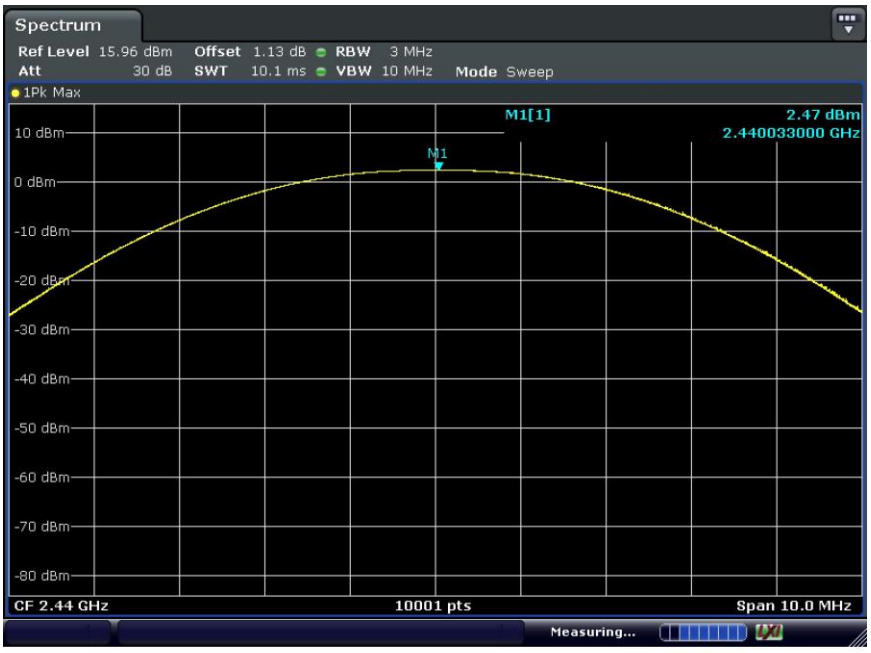

Figure 9. Conducted Emissions, Maximum Peak Conducted Output Power: Mid Channel, 2440 MHz Plot

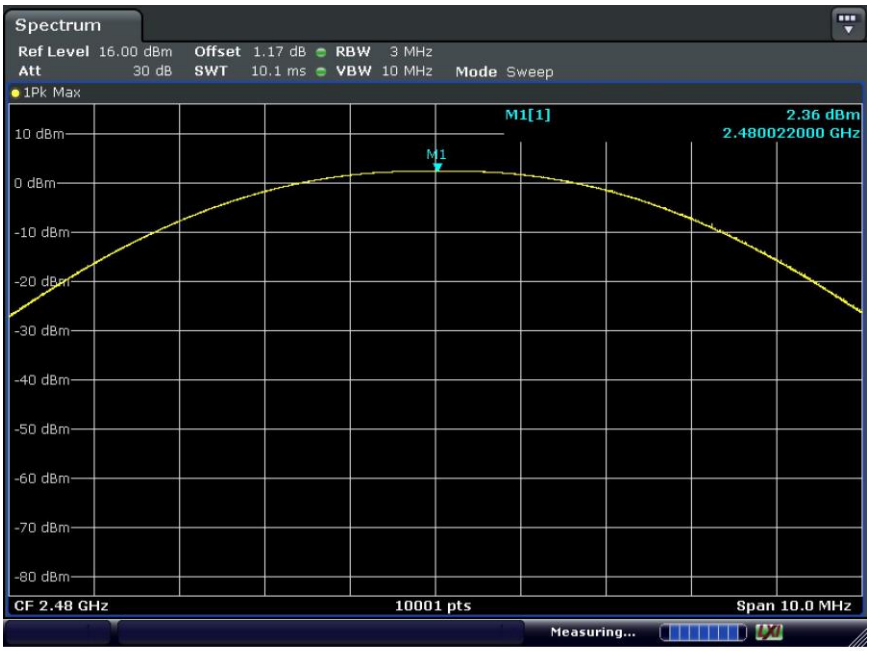

Figure 10. Conducted Emissions, Maximum Peak Conducted Output Power: High Channel, 2480 MHz Plot

Frequency (MHz)	Channel	EUT Power Setting (dBm)	Max Peak Power Spectral Density (dBm)
2402	Low	+5	0.09
2440	Mid	+5	0.37
2480	High	+5	0.25

Table 5. Conducted Emissions, Maximum Peak Power Spectral Density Test Results

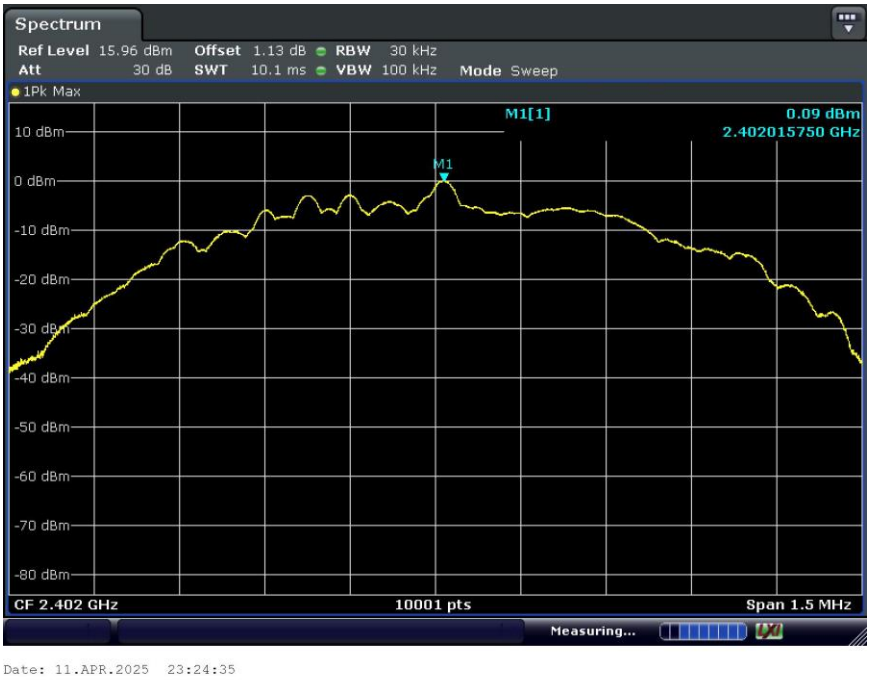

Figure 11. Conducted Emissions, Maximum Peak Power Spectral Density: Low Channel, 2402 MHz Plot

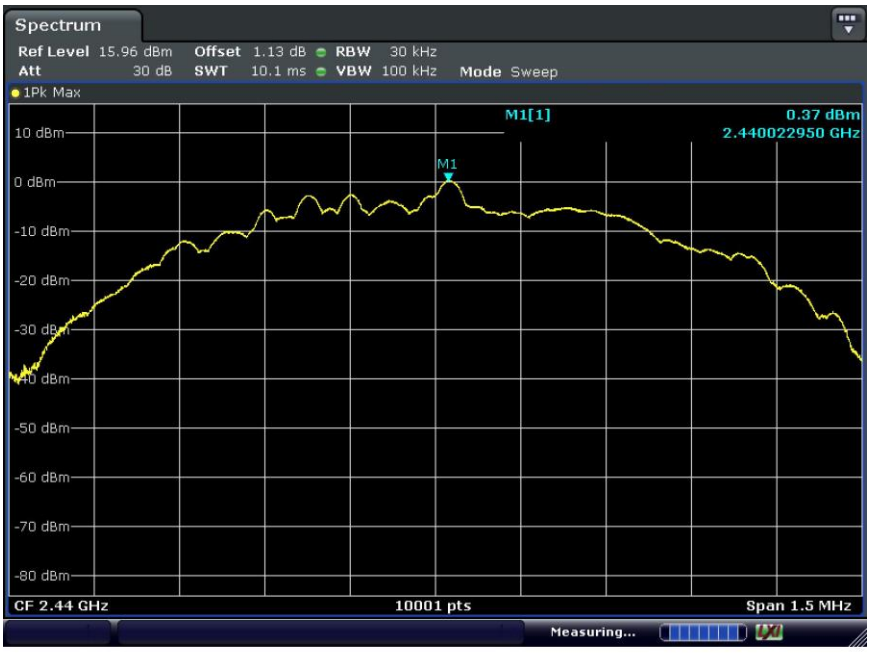

Figure 12. Conducted Emissions, Maximum Peak Power Spectral Density: Mid Channel, 2440 MHz Plot

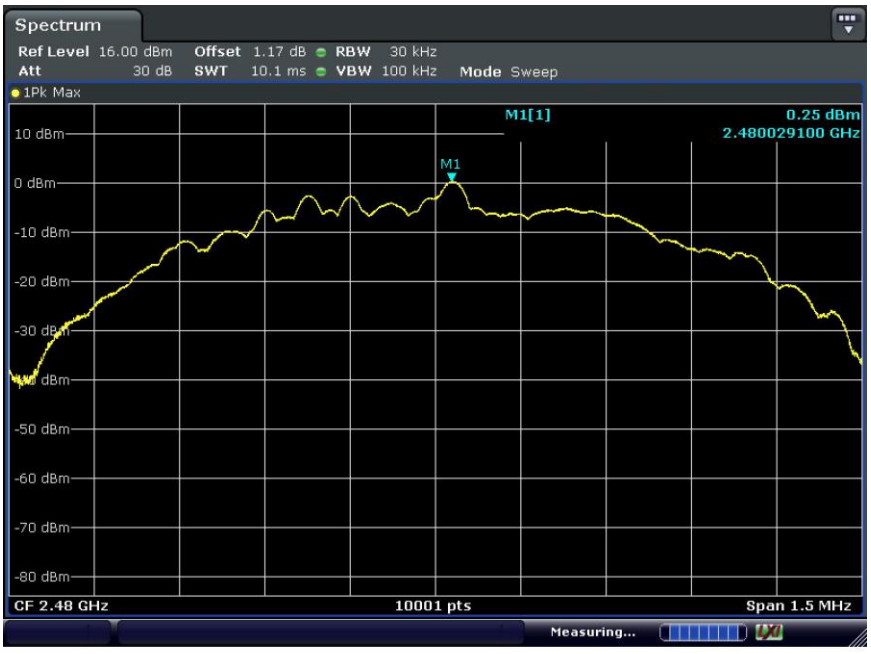

Figure 13. Conducted Emissions, Maximum Peak Power Spectral Density: High Channel, 2480 MHz Plot

Frequency (MHz)	Channel	EUT Power Setting (dBm)	Fundamental Peak (dBm)	Max Spurious Emission Freq (MHz)	Max Spurious Emission Level (dBm)	Emissions Limit (dBm)
2402	Low	+5	1.95	5213.74	-56.84	-18.05
2440	Mid	+5	2.13	5202.49	-58.72	-17.87
2480	High	+5	2.03	5215.24	-50.85	-17.97

Table 6. Conducted Emissions, Conducted Spurious Emissions Test Results

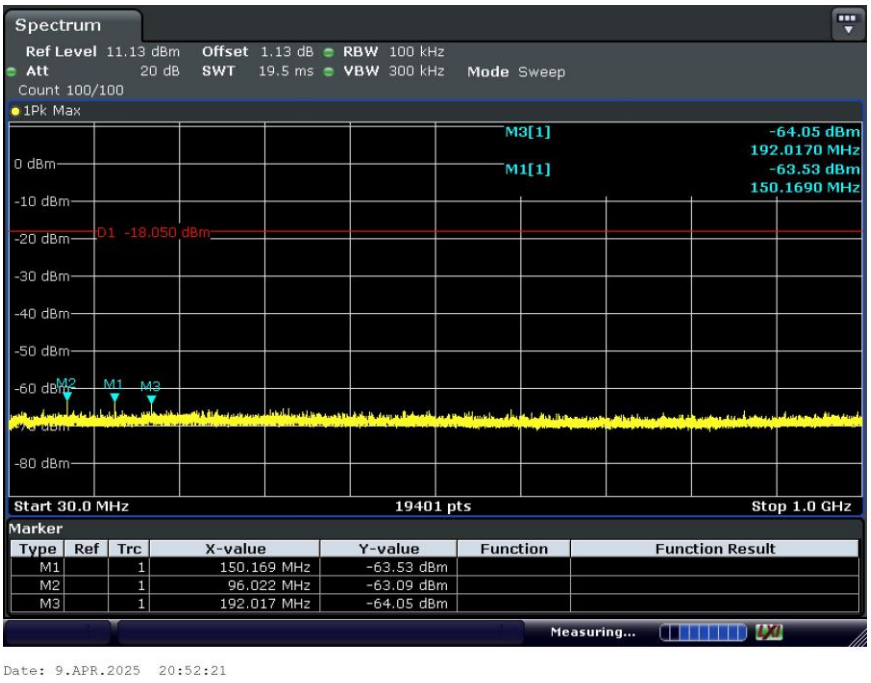

Figure 14. Conducted Emissions, Conducted Spurious Emissions: Low Channel, 2402 MHz Plot

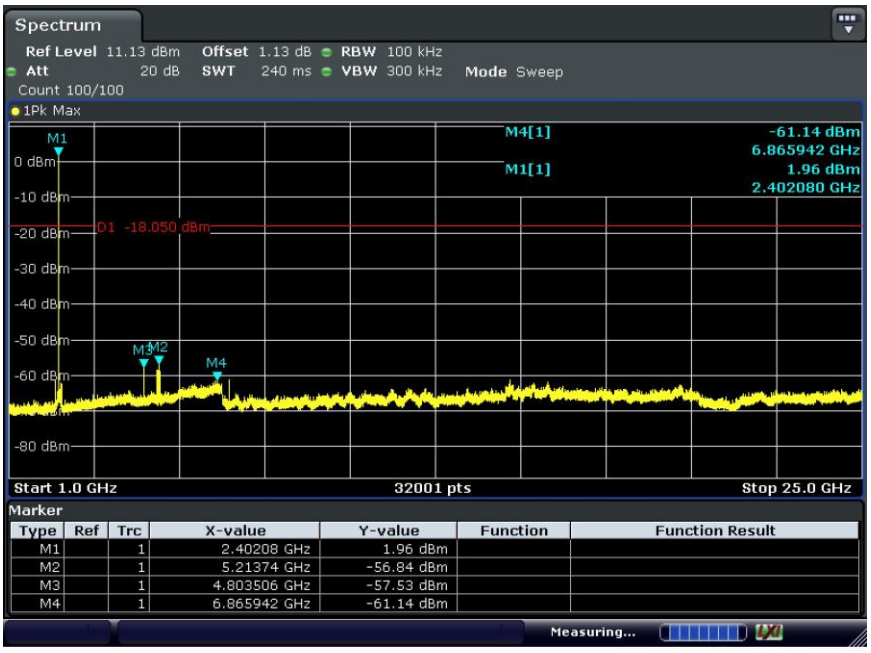

Figure 15. Conducted Emissions, Conducted Spurious Emissions: Low Channel, 2402 MHz Plot

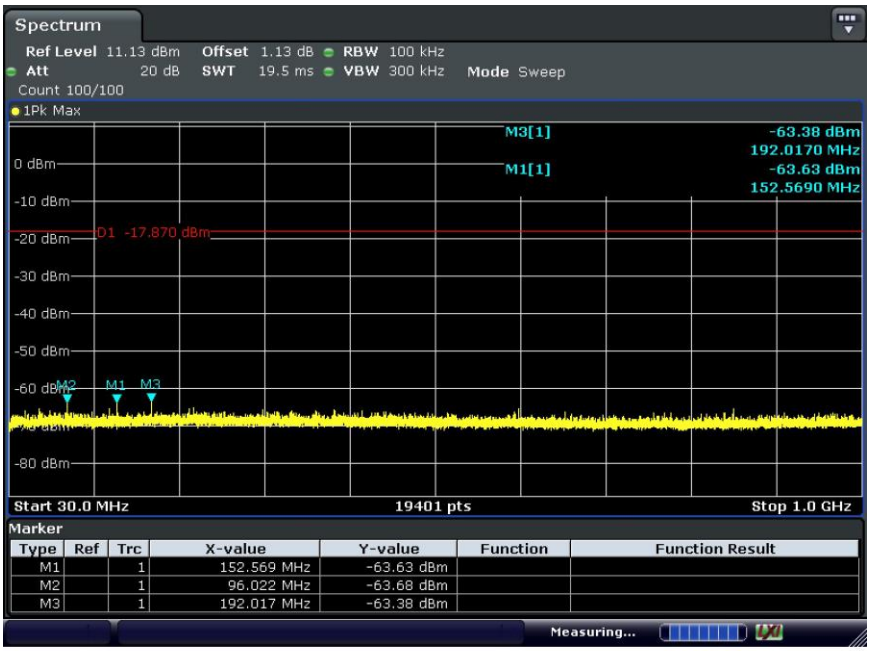

Figure 16. Conducted Emissions, Conducted Spurious Emissions: Mid Channel, 2440 MHz Plot

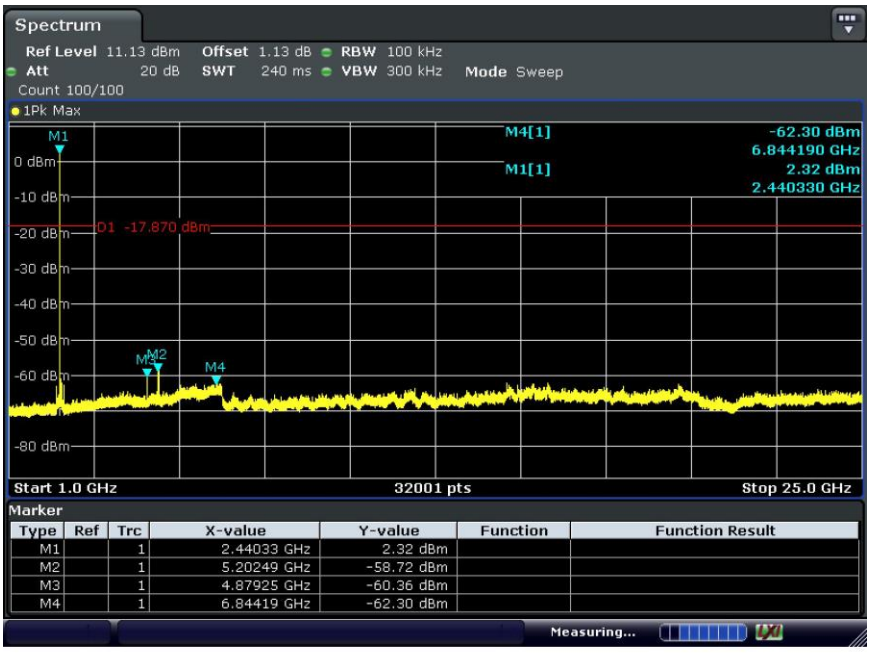

Figure 17. Conducted Emissions, Conducted Spurious Emissions: Mid Channel, 2440 MHz Plot

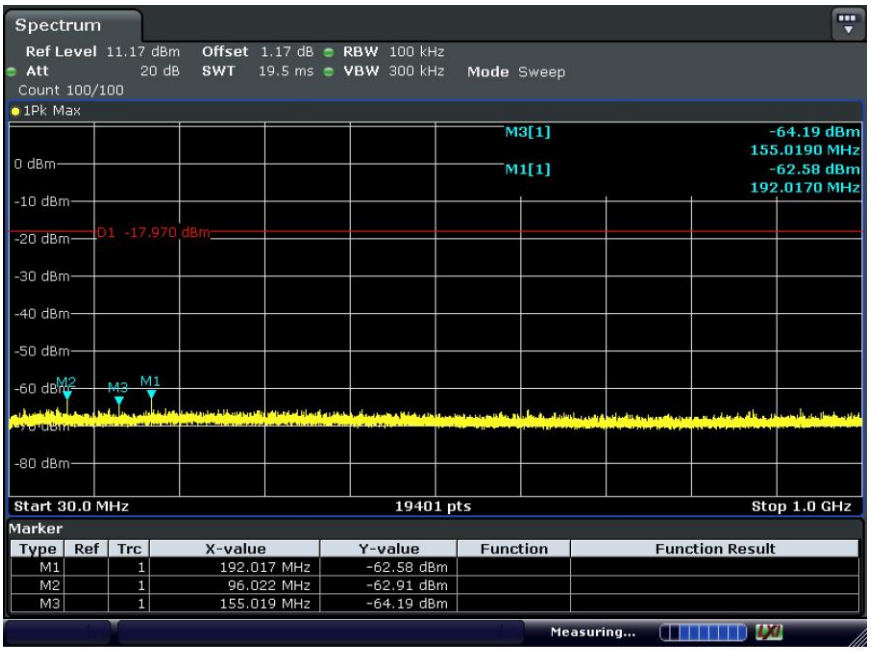

Figure 18. Conducted Emissions, Conducted Spurious Emissions: High Channel, 2480 MHz Plot

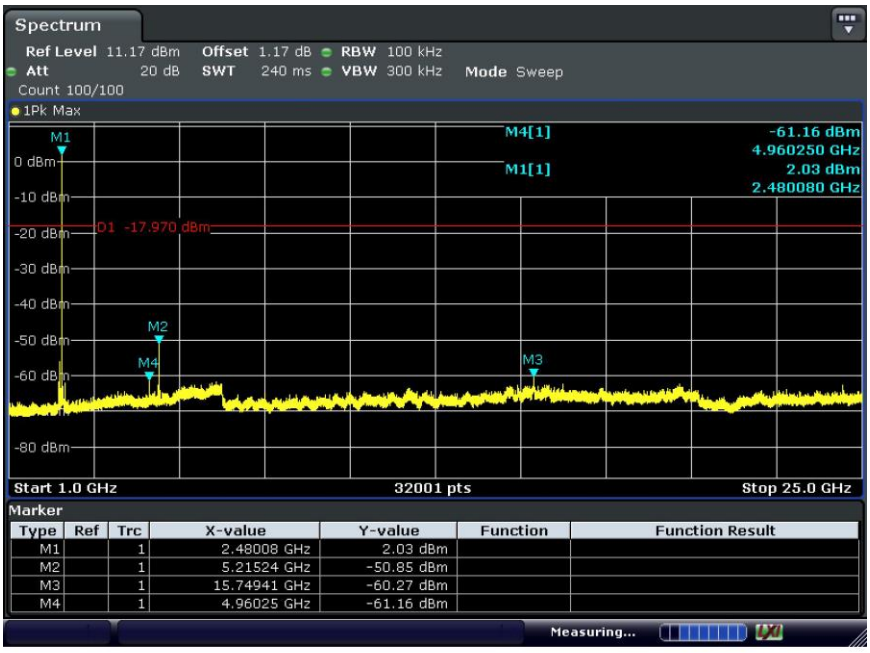

Figure 19. Conducted Emissions, Conducted Spurious Emissions: High Channel, 2480 MHz Plot

Frequency (MHz)	Channel	EUT Power Setting (dBm)	Fundamental Peak (dBm)	Unwanted Emission Level (dBm)	Peak-to-Unwanted Emission Delta (Δ) (dBc)	Limit (dBc)
2402	Low	+5	1.74	-44.69	46.43	≥ 20
2480	High	+5	1.85	-56.05	57.90	≥ 20

Table 7. Conducted Emissions, Band Edge Test Results

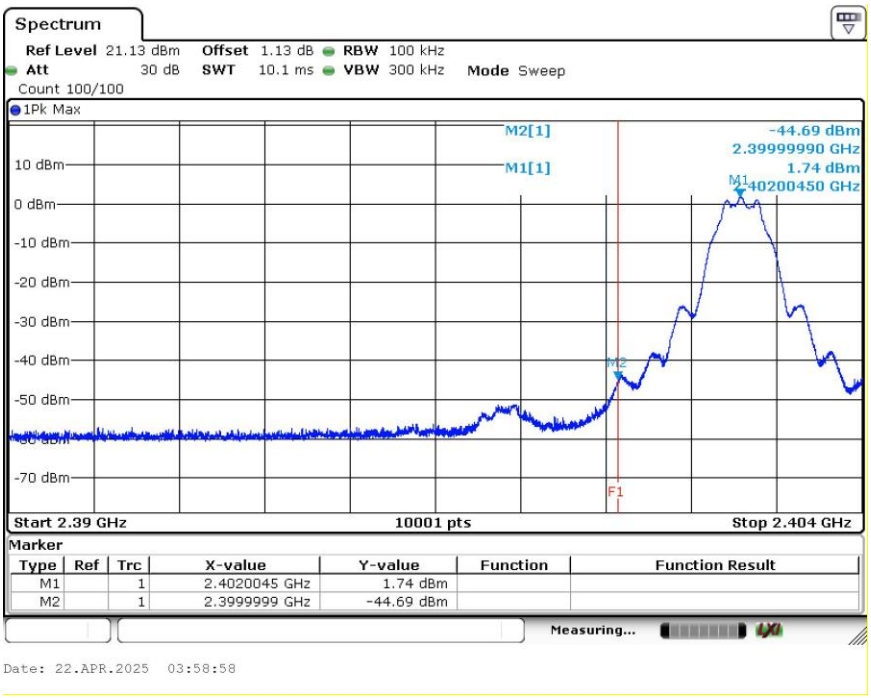

Figure 20. Conducted Emissions, Lower Band Edge: Low Channel, 2402 MHz Plot

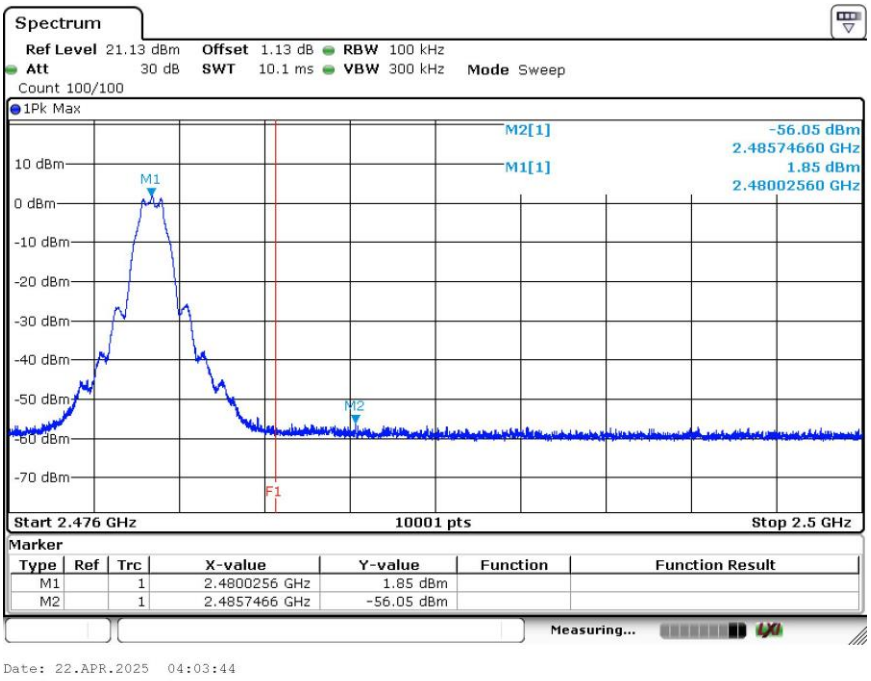

Figure 21. Conducted Emissions, Upper Band Edge: High Channel, 2480 MHz Plot

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ISO/IEC 17025:2017.

Test Name: FCC 15.247 & RSS-247			**Test Date(s):** 04/09/2025 – 04/11/2025		
Asset #	**Equipment**	**Manufacturer**	**Model**	**Last Cal Date**	**Cal Due Date**
1S3812	Signal Analyzer	Rohde & Schwarz	FSV	01/10/2025	01/10/2027
Note 1: Functionally tested equipment is verified using calibrated instrumentation at the time of testing. **Note 2:** Latest NSA and VSWR data available upon request.					

Table 8. Conducted Emissions, Test Equipment List

3.2 Radiated Spurious Emissions

Test Method: ANSI C63.10: 2020; FCC KDB 558074 D01 15.247 Meas Guidance v05r02

Test Requirement(s): The following standards specified below are covered in the scope of this section of the test report:

- FCC Part 15 Subpart C (FCC 15.247)
- RSS-247 Issue 3

§15.209 (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (dBµV/m)	Measurement Distance (m)
30 - 88	40	3
88 - 216	43.5	3
216 - 960	46	3
Above 960	54	3

RSS-Gen: Refer to Section 8.9 Transmitter emission limits Table 5 – General field strength limits at frequencies above 30 MHz

Sample Calculation for Distance Correction factor (DCF) measurement:

$$F_d = 20*LOG_{10}(D_m/D_s)$$

where:

F_d = Distance Factor in dB
D_m = Measurement Distance in meters
D_s = Specification Distance in meters

Sample formula for calculating the Corrected Data for the Radiated Emissions Measurements:

Frequency (MHz)	Antenna Polarity	EUT Azimuth (Degrees)	Antenna Height (cm)	Uncorrected Amplitude (dBµV)	ACF (dB/m) (+)	Pre Amp Gain (dB)(-)	CBL (dB) (+)	DCF (dB) (+)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
249.99	V	359.9	240.7	55.46	11.4	28.335	0	0	***38.505***	47	-8.495

Corrected Amplitude (dBµV/m) = Uncorrected Amplitude (dBµV) +ACF (dB/m) - Preamp Gain (dB) + CBL (dB) +DCF (dB) = 55.46 + 11.4 - 28.335 + 0 + 0 = ***38.505***

Test Procedure:

The method of testing, test conditions, and test procedures of ANSI C63.10: 2020 were used in addition to FCC KDB 558074 D01 15.247 Meas Guidance v05r02. Any measured frequency that exhibits a margin of compliance that is less than 3 dB below the specification limit is marked. Eurofins E&E recommends that every emission measured, has at least a 3 dB margin to allow for deviations in the emission characteristics that may occur during the production process.

For emissions between 30 MHz and 1000 MHz, the EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber a biconilog antenna was located 3m from the EUT on an adjustable mast. A pre-scan was first performed in order to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1 m and 4 m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. Unless otherwise specified, measurements were made using a quasi-peak detector with a 120 kHz resolution bandwidth.

For emissions between 1 GHz and 18 GHz, a double ridged guide horn was located 3 m from the EUT on an adjustable mast. The EUT as placed on a non-metallic table 150 cm above the ground plane inside a semi-anechoic chamber. A pre-scan was performed and used to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied depending on the geometry of the EUT. In order to ensure maximized emissions, the horn antenna was positioned both vertically and horizontally. Unless otherwise specified, measurements were made using a peak and average detector with a 1 MHz resolution bandwidth.

For emission between 18 GHz and 26 GHz, a high frequency standard gain horn antenna was located 3 m from the EUT on an adjustable mast. The EUT as placed on a non-metallic table 150 cm above the ground plane inside a semi-anechoic chamber. A pre-scan was performed and used to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT was rotated, and the antenna height was varied depending on the geometry of the EUT. In order to ensure maximized emissions, the horn antenna was positioned both vertically and horizontally. Unless otherwise specified, measurements were made using a peak and average detector with a 1 MHz resolution bandwidth.

Due to the size of the EUT, pre-liminary measurements were performed with the EUT rotated on different axis (X, Y, Z). The worst-case data is presented in this report.

Test Software Used: Nexio BAT-EMC was used to perform this test.

Test Results:

Test Standard:	FCC Part 15.247 (Per FCC KDB 558074 D01 15.247 Meas Guidance v05r02; ANSI C63.10-2020) RSS-247 Issue 3
Test Name	Radiated Spurious Emissions
Test Dates:	04/09/2025 – 04/10/2025
Laboratory	Eurofins E&E Testing NA, LLC.
Test Engineer:	Chin Ming Lui
Test Results:	Compliant

Test Data

BLE Low Channel 2402 MHz

Frequency (MHz)	Source	Level (dBµV/m)	Limit (dBuV/m)	Margin (dB)	Height (m)	Azimuth (°)	Pol.	RBW (Hz)	Meas. Time (s)	Correction (dB)
43.026	QuasiPeak (PASS)	15.652	40	-24.348	3.83	190	Vertical	120000	0.1	-13.906
54.953	QuasiPeak (PASS)	33.691	40	-6.309	2.032	124	Vertical	120000	0.1	-16.766
136.955	QuasiPeak (PASS)	13.392	43.522	-30.13	3.431	172	Vertical	120000	0.1	-9.598
210.605	QuasiPeak (PASS)	34.613	43.522	-8.909	3.966	118	Horizontal	120000	0.1	-11.46
649.982	QuasiPeak (PASS)	34.823	46.021	-11.198	3.07	306	Vertical	120000	0.1	-1.875
749.995	QuasiPeak (PASS)	32.697	46.021	-13.324	1.565	206	Horizontal	120000	0.1	-0.505
849.996	QuasiPeak (PASS)	32.467	46.021	-13.554	1.355	215	Horizontal	120000	0.1	0.63

Table 9. Radiated Spurious Emissions, BLE Low Channel 2402 MHz (30 MHz – 1 GHz) Test Results

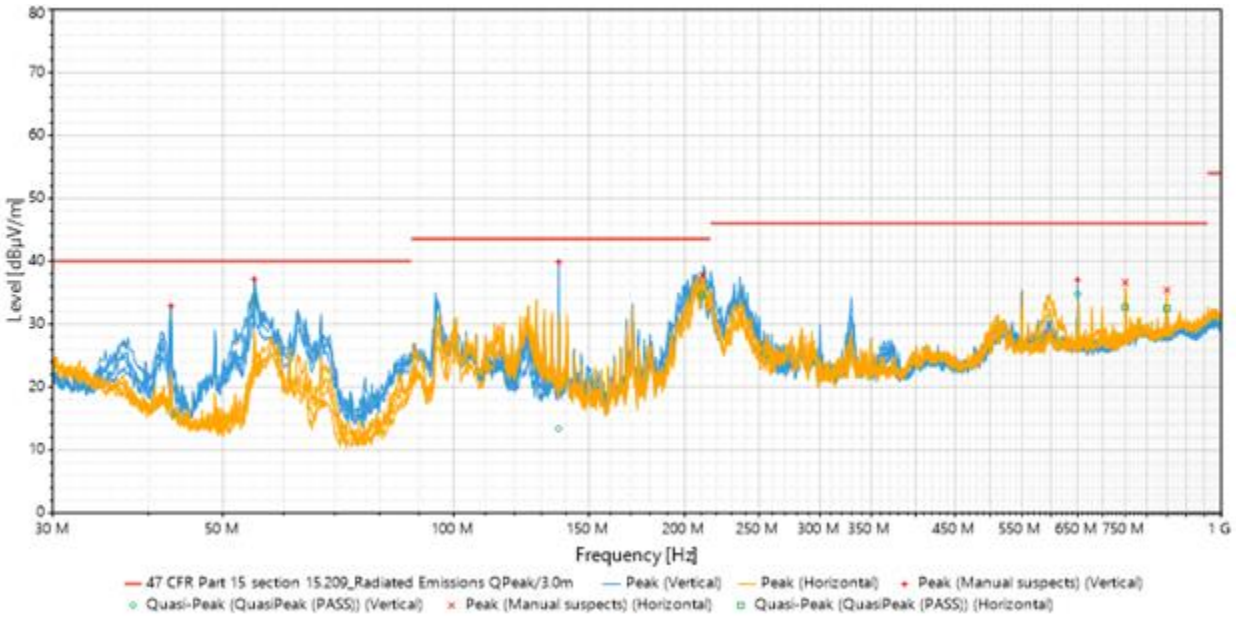

Figure 22. Radiated Spurious Emissions, BLE Low Channel 2402 MHz (30 MHz – 1 GHz) Plot

Frequency (MHz)	Source	Level (dBµV/m)	Limit (dBuV/m)	Margin (dB)	Height (m)	Azimuth (°)	Pol.	RBW (Hz)	Meas. Time (s)	Correction (dB)
2599.9	Peak (PASS)	46.152	74	-27.848	1.695	216	Horizontal	1000000	0.1	-0.451
2599.9	Average (PASS)	37.405	54	-16.595	1.695	216	Horizontal	1000000	0.1	-0.451
2796.5	Peak (PASS)	42.227	74	-31.773	2.251	241	Vertical	1000000	0.1	-0.807
2796.5	Average (PASS)	28.182	54	-25.818	2.251	241	Vertical	1000000	0.1	-0.807
17220.3	Peak (PASS)	53.278	74	-20.722	3.624	91	Vertical	1000000	0.1	4.935
17220.3	Average (PASS)	39.433	54	-14.567	3.624	91	Vertical	1000000	0.1	4.935
17841.4	Peak (PASS)	53.905	74	-20.095	1.916	2	Horizontal	1000000	0.1	3.643
17841.4	Average (PASS)	39.728	54	-14.272	1.916	2	Horizontal	1000000	0.1	3.643

Table 10. Radiated Spurious Emissions, BLE Low Channel 2402 MHz (1 – 18 GHz) Test Results

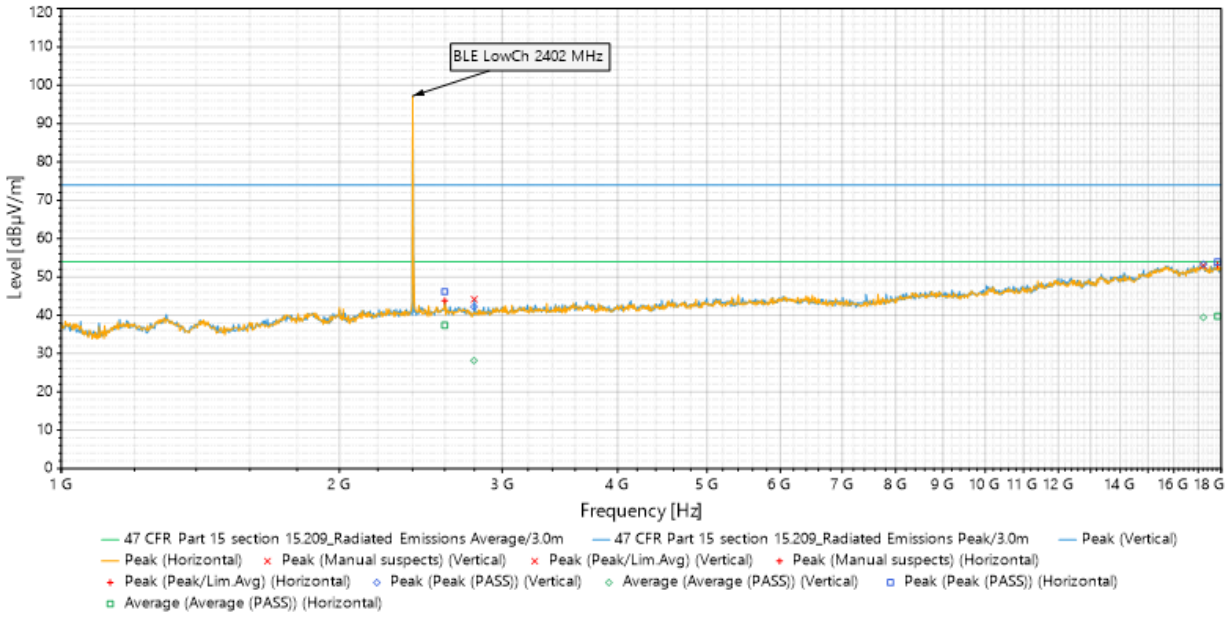

Figure 23. Radiated Spurious Emissions, BLE Low Channel 2402 MHz (1 – 18 GHz) Plot

Frequency (MHz)	Source	Level (dBµV/m)	Limit (dBuV/m)	Margin (dB)	Height (m)	Azimuth (°)	Pol.	RBW (Hz)	Meas. Time (s)	Correction (dB)
2338.012	Peak (PASS)	42.567	74	-31.433	3.372	281	Vertical	1000000	0.1	-0.831
2338.012	Average (PASS)	28.044	54	-25.956	3.372	281	Vertical	1000000	0.1	-0.831
2338.438	Peak (PASS)	42.135	74	-31.865	1.246	123	Horizontal	1000000	0.1	-0.827
2338.438	Average (PASS)	28.01	54	-25.99	1.246	123	Horizontal	1000000	0.1	-0.827

Table 11. Radiated Spurious Emissions, BLE Low Channel 2402 MHz Lower Band Edge Test Results

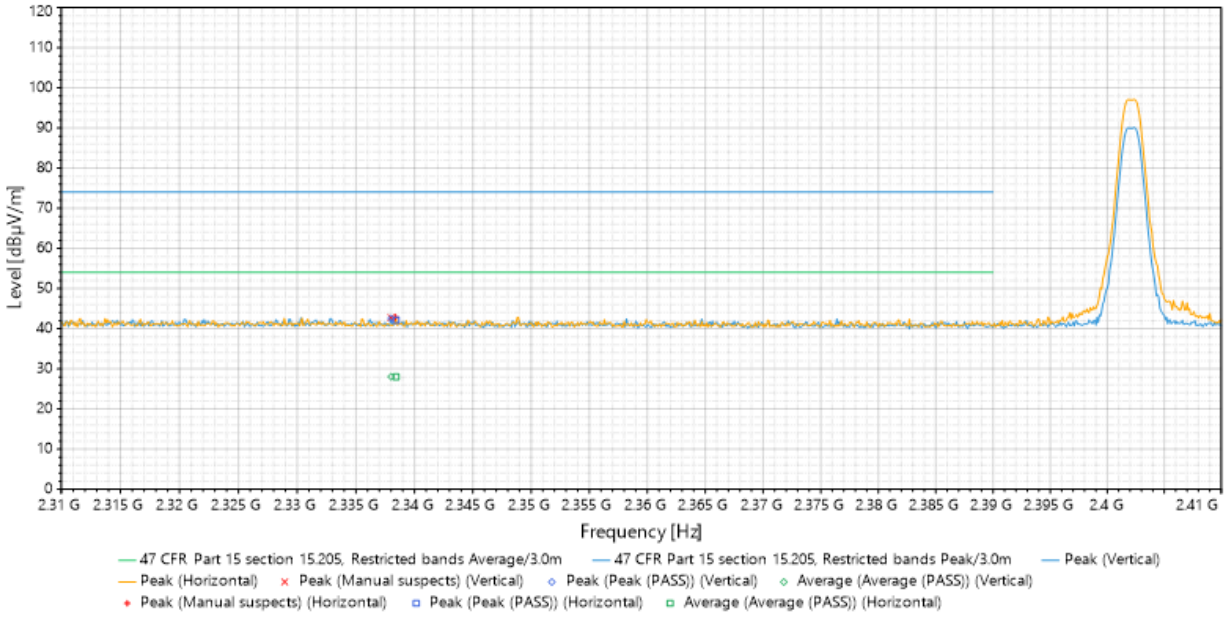

Figure 24. Radiated Spurious Emissions, BLE Low Channel 2402 MHz Lower Band Edge Plot

Frequency (MHz)	Source	Level (dBµV/m)	Limit (dBuV/m)	Margin (dB)	Height (m)	Azimuth (°)	Pol.	RBW (Hz)	Meas. Time (s)	Correction (dB)
18055.1	Peak (PASS)	49.734	74	-24.266	3.166	8	Horizontal	1000000	0.1	-0.885
18055.1	Average (PASS)	35.327	54	-18.673	3.166	8	Horizontal	1000000	0.1	-0.885
18232.2	Peak (PASS)	48.737	74	-25.263	3.489	238	Vertical	1000000	0.1	-1.401
18232.2	Average (PASS)	34.496	54	-19.504	3.489	238	Vertical	1000000	0.1	-1.401

Table 12. Radiated Spurious Emissions, BLE Low Channel 2402 MHz (18 – 26 GHz) Test Results

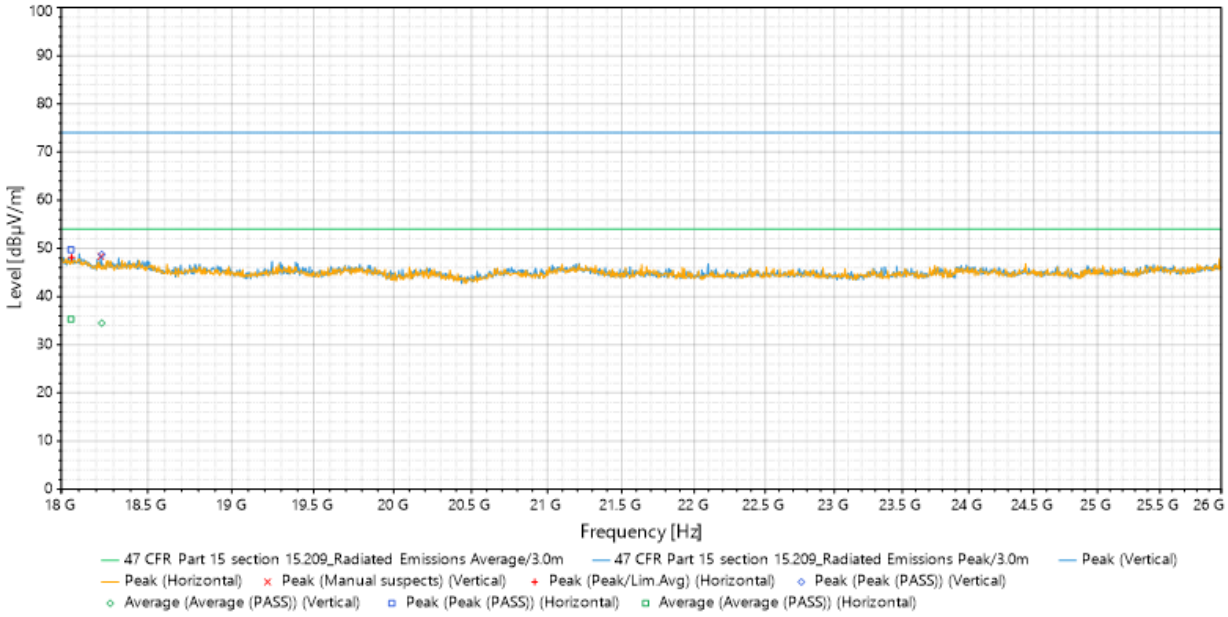

Figure 25. Radiated Spurious Emissions, BLE Low Channel 2402 MHz (18 – 26 GHz) Plot

BLE Mid Channel 2440 MHz

Frequency (MHz)	Source	Level (dBµV/m)	Limit (dBuV/m)	Margin (dB)	Height (m)	Azimuth (°)	Pol.	RBW (Hz)	Meas. Time (s)	Correction (dB)
34.69	QuasiPeak (PASS)	17.334	40	-22.666	1.798	261	Horizontal	120000	0.1	-7.626
54.929	QuasiPeak (PASS)	36.971	40	-3.029	1.474	359	Vertical	120000	0.1	-16.768
204.381	QuasiPeak (PASS)	35.151	43.522	-8.371	3.035	279	Vertical	120000	0.1	-11.083
208.095	QuasiPeak (PASS)	34.42	43.522	-9.102	4	130	Horizontal	120000	0.1	-11.161
649.994	QuasiPeak (PASS)	35.495	46.021	-10.526	1.244	290	Vertical	120000	0.1	-1.875
749.995	QuasiPeak (PASS)	34.167	46.021	-11.854	2.262	157	Horizontal	120000	0.1	-0.505

Table 13. Radiated Spurious Emissions, BLE Mid Channel 2440 MHz (30 MHz – 1 GHz) Test Results

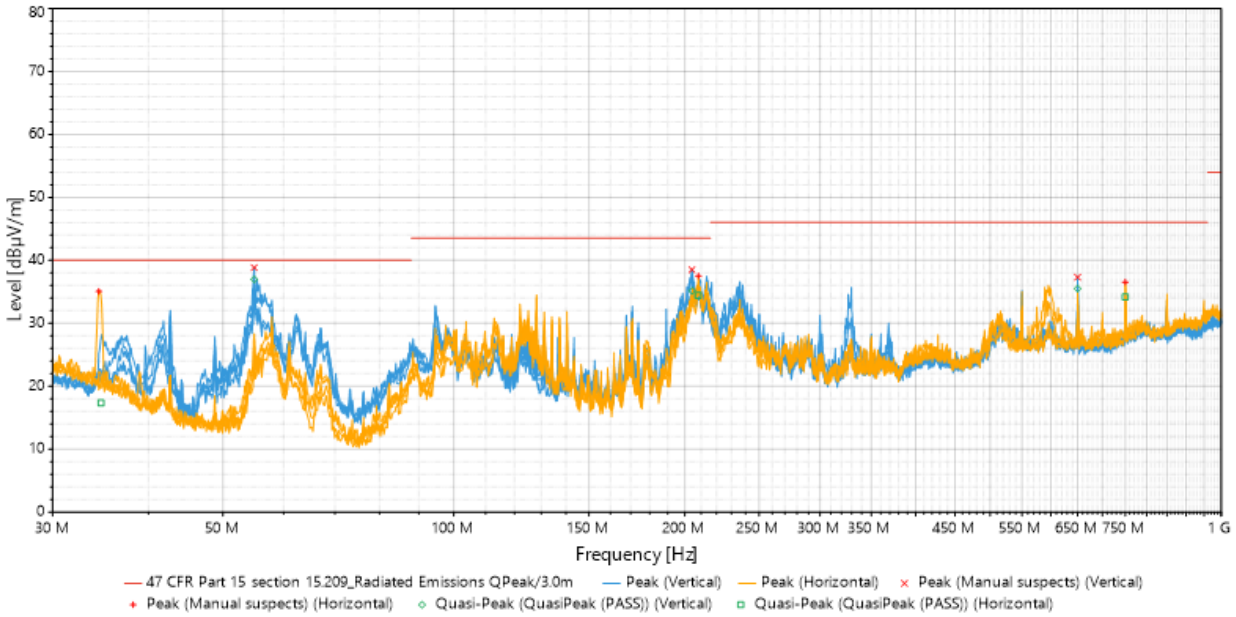

Figure 26. Radiated Spurious Emissions, BLE Mid Channel 2440 MHz (30 MHz – 1 GHz) Plot

Frequency (MHz)	Source	Level (dBµV/m)	Limit (dBuV/m)	Margin (dB)	Height (m)	Azimuth (°)	Pol.	RBW (Hz)	Meas. Time (s)	Correction (dB)
2599.8	Peak (PASS)	48.071	74	-25.929	1.471	232	Vertical	1000000	0.1	-0.311
2599.8	Average (PASS)	41.166	54	-12.834	1.471	232	Vertical	1000000	0.1	-0.311
2600.1	Peak (PASS)	50.166	74	-23.834	1.575	199	Horizontal	1000000	0.1	-0.451
2600.1	Average (PASS)	38.072	54	-15.928	1.575	199	Horizontal	1000000	0.1	-0.451
17249.4	Peak (PASS)	53.397	74	-20.603	1.131	18	Horizontal	1000000	0.1	4.718
17249.4	Average (PASS)	39.731	54	-14.269	1.131	18	Horizontal	1000000	0.1	4.718
17258	Peak (PASS)	53.631	74	-20.369	1.911	295	Vertical	1000000	0.1	4.79
17258	Average (PASS)	40.075	54	-13.925	1.911	295	Vertical	1000000	0.1	4.79

Table 14. Radiated Spurious Emissions, BLE Mid Channel 2440 MHz (1 – 18 GHz) Test Results

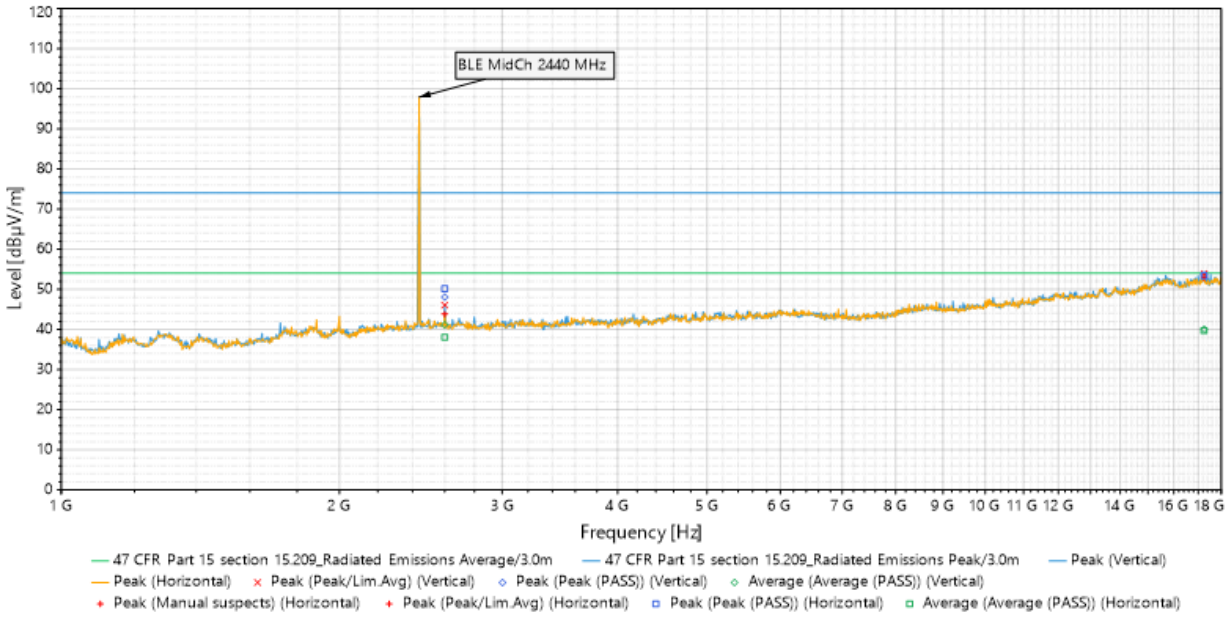

Figure 27. Radiated Spurious Emissions, BLE Mid Channel 2440 MHz (1 – 18 GHz) Plot

Frequency (MHz)	Source	Level (dBµV/m)	Limit (dBuV/m)	Margin (dB)	Height (m)	Azimuth (°)	Pol.	RBW (Hz)	Meas. Time (s)	Correction (dB)
18092.7	Peak (PASS)	48.827	74	-25.173	4	270	Vertical	1000000	0.1	-0.882
18092.7	Average (PASS)	35.292	54	-18.708	4	270	Vertical	1000000	0.1	-0.882
18522.3	Peak (PASS)	47.541	74	-26.459	1.355	22	Horizontal	1000000	0.1	-2.47
18522.3	Average (PASS)	33.801	54	-20.199	1.355	22	Horizontal	1000000	0.1	-2.47

Table 15. Radiated Spurious Emissions, BLE Mid Channel 2440 MHz (18 – 26 GHz) Test Results

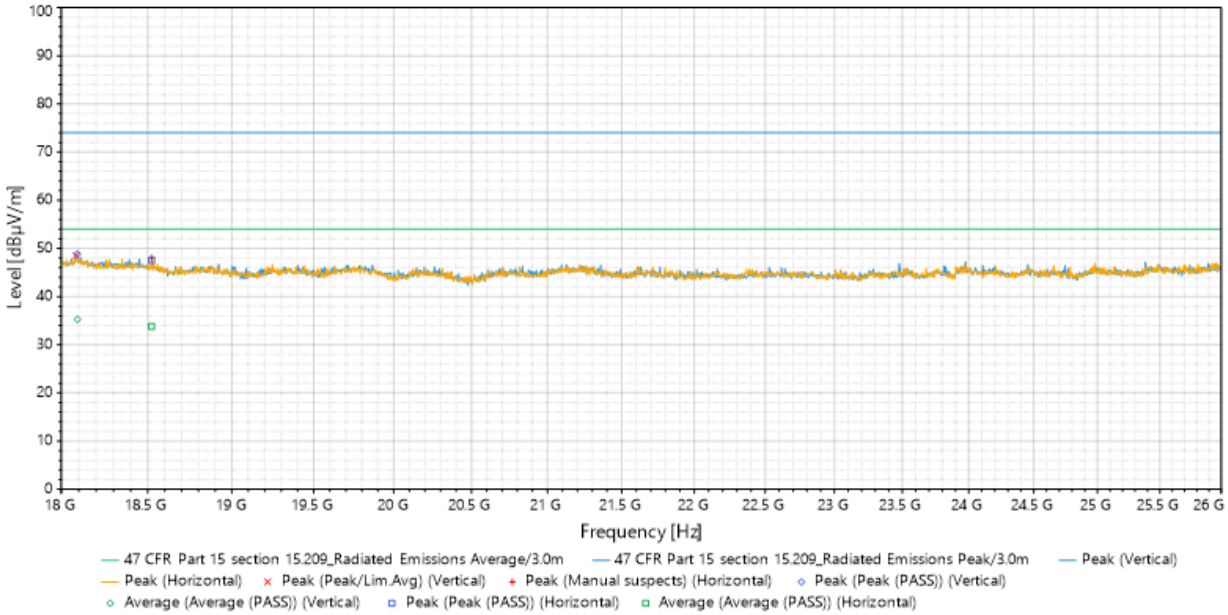

Figure 28. Radiated Spurious Emissions, BLE Mid Channel 2440 MHz (18 – 26 GHz) Plot

BLE High Channel 2480 MHz

Frequency (MHz)	Source	Level (dBµV/m)	Limit (dBuV/m)	Margin (dB)	Height (m)	Azimuth (°)	Pol.	RBW (Hz)	Meas. Time (s)	Correction (dB)
54.838	QuasiPeak (PASS)	29.455	40	-10.545	3.654	361	Vertical	120000	0.1	-16.776
204.416	QuasiPeak (PASS)	34.016	43.522	-9.506	2.494	296	Vertical	120000	0.1	-11.083
207.622	QuasiPeak (PASS)	34.04	43.522	-9.482	3.526	139	Horizontal	120000	0.1	-11.143
379.212	QuasiPeak (PASS)	14.59	46.021	-31.431	3.707	304	Horizontal	120000	0.1	-6.255
650	QuasiPeak (PASS)	36.563	46.021	-9.458	1	286	Vertical	120000	0.1	-1.875
749.989	QuasiPeak (PASS)	34.854	46.021	-11.167	2.774	155	Horizontal	120000	0.1	-0.505

Table 16. Radiated Spurious Emissions, BLE High Channel 2480 MHz (30 MHz – 1 GHz) Test Results

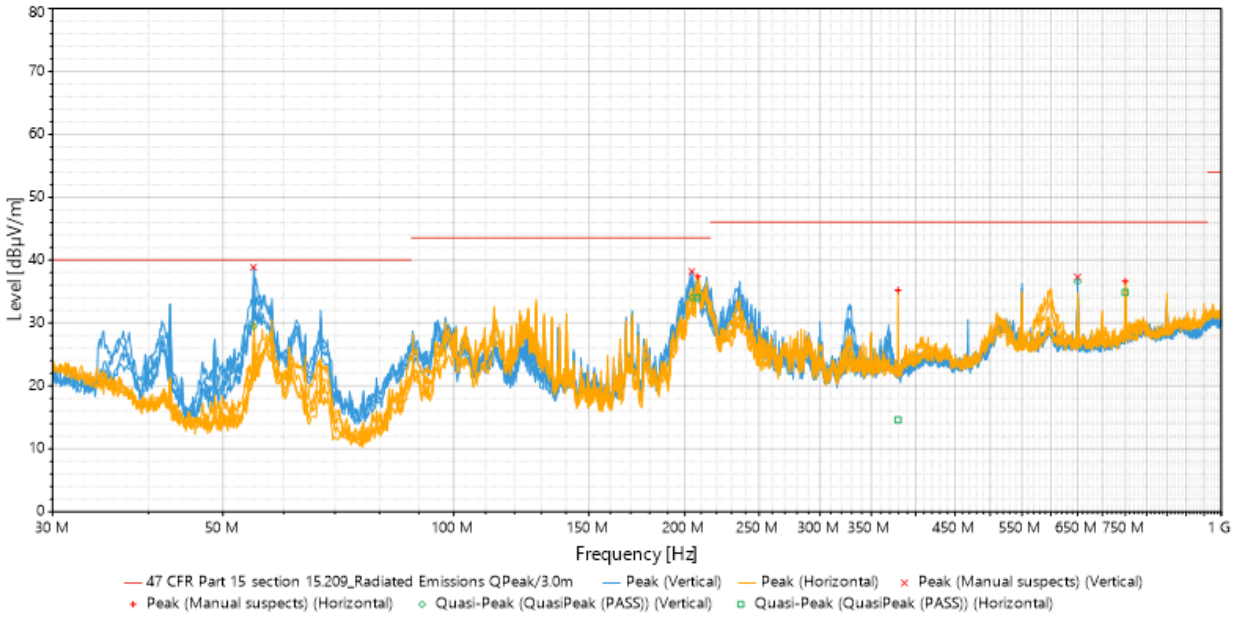

Figure 29. Radiated Spurious Emissions, BLE High Channel 2480 MHz (30 MHz – 1 GHz) Plot

Frequency (MHz)	Source	Level (dBµV/m)	Limit (dBuV/m)	Margin (dB)	Height (m)	Azimuth (°)	Pol.	RBW (Hz)	Meas. Time (s)	Correction (dB)
2600	Peak (PASS)	48.183	74	-25.817	1.249	232	Vertical	1000000	0.1	-0.311
2600	Average (PASS)	42.361	54	-11.639	1.249	232	Vertical	1000000	0.1	-0.311
3139.1	Peak (PASS)	43.22	74	-30.78	2.948	321	Horizontal	1000000	0.1	0.293
3139.1	Average (PASS)	28.918	54	-25.082	2.948	321	Horizontal	1000000	0.1	0.293
15722.2	Peak (PASS)	53.292	74	-20.708	3.892	360	Vertical	1000000	0.1	7.087
15722.2	Average (PASS)	39.982	54	-14.018	3.892	360	Vertical	1000000	0.1	7.087
17269.2	Peak (PASS)	53.835	74	-20.165	3.299	163	Horizontal	1000000	0.1	4.658
17269.2	Average (PASS)	39.907	54	-14.093	3.299	163	Horizontal	1000000	0.1	4.658

Table 17. Radiated Spurious Emissions, BLE High Channel 2480 MHz (1 – 18 GHz) Test Results

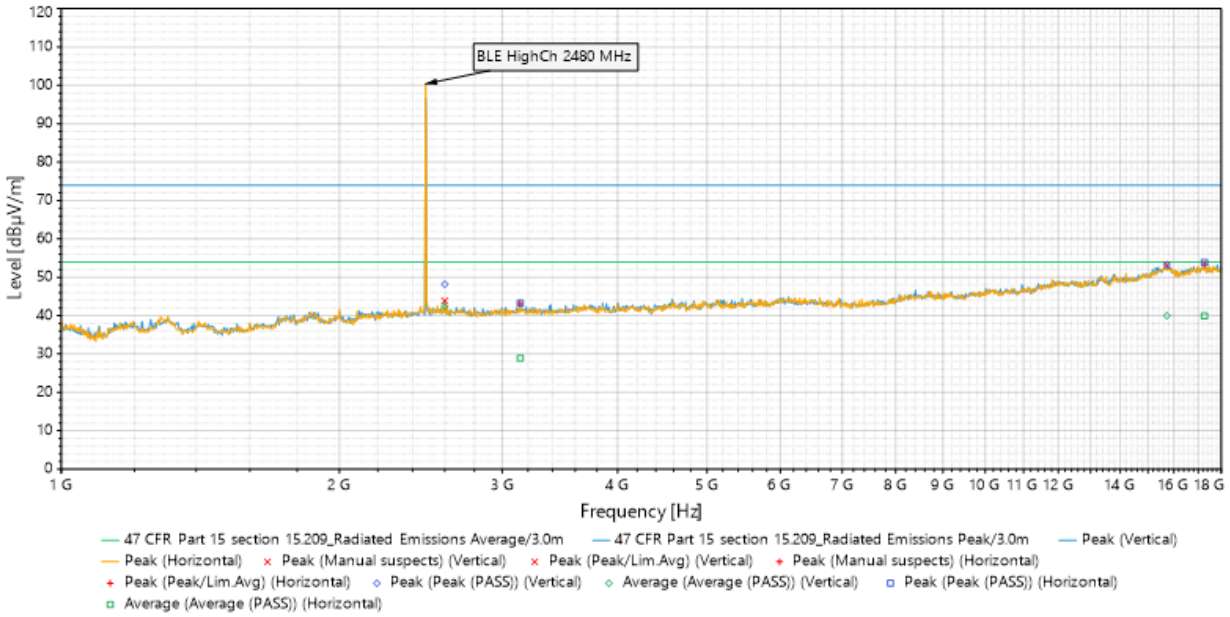

Figure 30. Radiated Spurious Emissions, BLE High Channel 2480 MHz (1 – 18 GHz) Plot

Frequency (MHz)	Source	Level (dBµV/m)	Limit (dBuV/m)	Margin (dB)	Height (m)	Azimuth (°)	Pol.	RBW (Hz)	Meas. Time (s)	Correction (dB)
2483.5405	Peak (PASS)	51.399	74	-22.601	1.483	253	Horizontal	1000000	0.1	-0.561
2483.5405	Average (PASS)	35.377	54	-18.623	1.483	253	Horizontal	1000000	0.1	-0.561
2483.592	Peak (PASS)	47.242	74	-26.758	1	196	Vertical	1000000	0.1	-0.367
2483.592	Average (PASS)	31.89	54	-22.11	1	196	Vertical	1000000	0.1	-0.367
2484.079	Peak (PASS)	45.371	74	-28.629	1.695	196	Vertical	1000000	0.1	-0.365
2484.079	Average (PASS)	29.796	54	-24.204	1.695	196	Vertical	1000000	0.1	-0.365
2485.641	Peak (PASS)	45.765	74	-28.235	1.918	259	Horizontal	1000000	0.1	-0.552
2485.641	Average (PASS)	30.126	54	-23.874	1.918	259	Horizontal	1000000	0.1	-0.552
2499.589	Peak (PASS)	44.724	74	-29.276	1.691	205	Horizontal	1000000	0.1	-0.519
2499.589	Average (PASS)	31.184	54	-22.816	1.691	205	Horizontal	1000000	0.1	-0.519
2499.838	Peak (PASS)	45.084	74	-28.916	2.257	257	Vertical	1000000	0.1	-0.299
2499.838	Average (PASS)	28.833	54	-25.167	2.257	257	Vertical	1000000	0.1	-0.299

Table 18. Radiated Spurious Emissions, BLE High Channel 2480 MHz Upper Band Edge Test Results

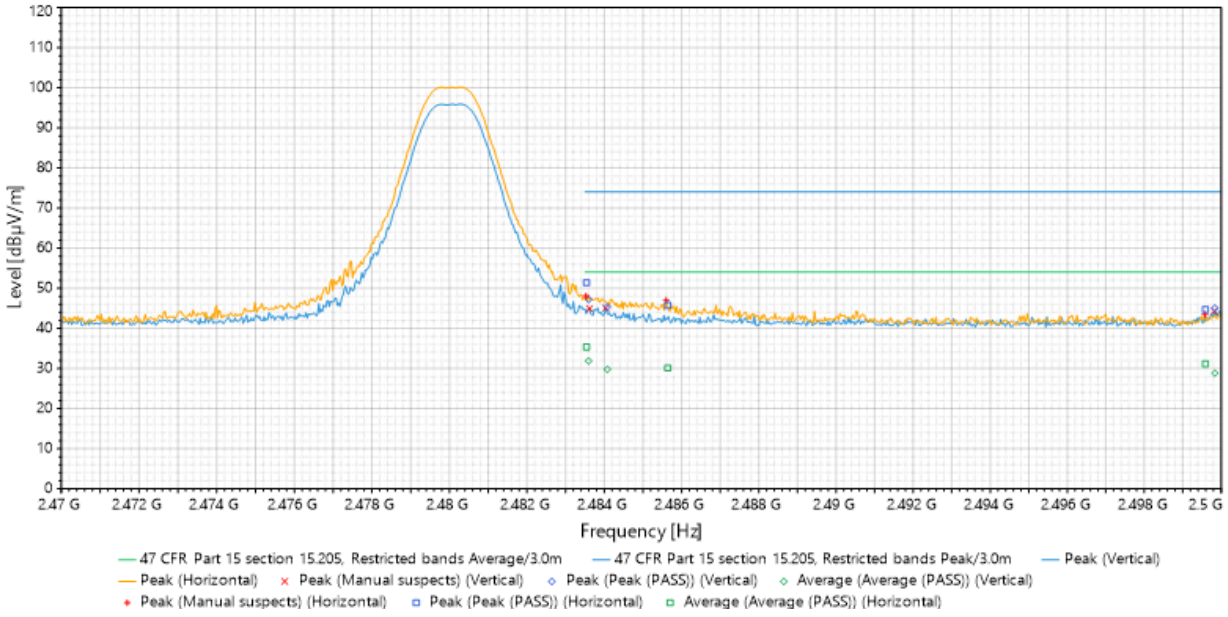

Figure 31. Radiated Spurious Emissions, BLE High Channel 2480 MHz Upper Band Edge Plot

Frequency (MHz)	Source	Level (dBµV/m)	Limit (dBuV/m)	Margin (dB)	Height (m)	Azimuth (°)	Pol.	RBW (Hz)	Meas. Time (s)	Correction (dB)
18127.7	Peak (PASS)	49.39	74	-24.61	1.356	219	Vertical	1000000	0.1	-1.013
18127.7	Average (PASS)	35.031	54	-18.969	1.356	219	Vertical	1000000	0.1	-1.013
18372.6	Peak (PASS)	48.388	74	-25.612	4	268	Horizontal	1000000	0.1	-2.089
18372.6	Average (PASS)	34.535	54	-19.465	4	268	Horizontal	1000000	0.1	-2.089

Table 19. Radiated Spurious Emissions, BLE High Channel 2480 MHz (18 – 26 GHz) Test Results

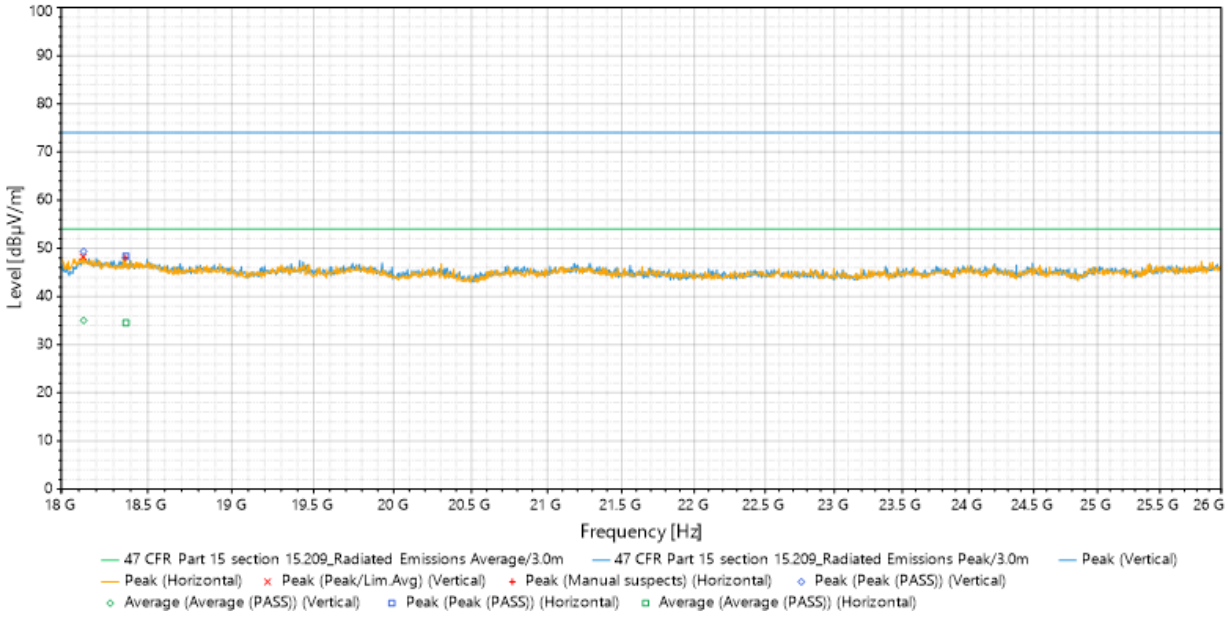

Figure 32. Radiated Spurious Emissions, BLE High Channel 2480 MHz (18 – 26 GHz) Plot

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ISO/IEC 17025:2017.

Test Name: FCC 15.247 / RSS-247			**Test Date(s):** 04/09/2025 – 04/10/2025		
Asset #	**Equipment**	**Manufacturer**	**Model**	**Last Cal Date**	**Cal Due Date**
1S2399	Turntable Controller	Sunol Sciences	SC99V	See Note 1	
1S4856	Antenna Positioning Tower	ETS-Lindgren	2171B	See Note 1	
1S2482	5 Meter Chamber	Panashield - ETS	5 Meter Semi-Anechoic Chamber	See Note 2	
1S4804	EMI Test Receiver	Rohde & Schwarz	ESW44	08/07/2024	08/07/2025
1S2600	Bilog Antenna	Teseq	CBL6112D	04/19/2023	04/19/2025
1S2435	Horn Antenna	ETS-Lindgren	3117	03/17/2025	03/17/2027
1S3818	DRG Horn Antenna	A.H. Systems, Inc.	SAS-574	05/24/2023	05/24/2025
1S2668	Pre-Amplifier	Sonoma Instruments	310 N	03/18/2025	03/18/2027
1S4802	Pre-Amplifier	EMC Instruments Corporation	EMC118A45SE	See Note 1	
1S3865	Table Top Amplifier	MITEQ	TTA1840-35-HG	See Note 1	
Note 1: Functionally tested equipment is verified using calibrated instrumentation at the time of testing. **Note 2:** Latest NSA and VSWR data available upon request.					

Table 20. Radiated Spurious Emissions, Test Equipment

END OF REPORT