

TEST REPORT

Report Number: R15560239-E2

Applicant : Garmin International Inc.
1200 East 151st Street
Olathe, KS 66062-3426, USA

Model : A04870

FCC ID : IPH-04870

IC : 1792A-04870

EUT Description : Digital Transceiver

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
ISED RSS-247 ISSUE 3
ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:

2025-04-01

Prepared by:

UL LLC

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2025-04-01	Initial Issue	Chandler Stanley

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Garmin International Inc.
1200 East 151st Street
Olathe, KS 66062-3426, USA

EUT DESCRIPTION: Digital Transceiver

MODEL: A04870

SERIAL NUMBER: Nonserialized

SAMPLE RECEIPT DATE: 2025-01-02, 2025-01-14, 2025-01-28, 2025-02-11, 2025-03-19

DATE TESTED: 2025-03-04 TO 2025-03-21

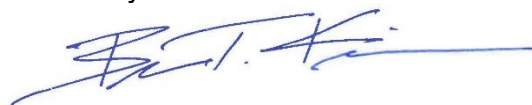
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	See Section 2
ISED RSS-247 Issue 3	See Section 2
ISED RSS-GEN Issue 5 + A1 + A2	See Section 2

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document.

Approved & Released For
UL LLC By:



Brian Kiewra
Project Engineer
Consumer, Medical, and IT Segment
UL LLC

Prepared By:



Chandler Stanley
Engineer
Consumer, Medical, and IT Segment
UL LLC

2. TEST RESULTS SUMMARY

This report contains info provided by the customer which can impact the validity of results. UL LLC is only responsible for the validity of results after the integration of the data provided by the customer.

Below is a list of the data/info provided by the customer:

- 1) Antenna gain and type (see section 6.3)
- 2) Worst-case data rates (see section 6.5)

FCC Clause	ISED Clause	Requirement	Result	Comment
See Comment		Duty Cycle	Reporting purposes only	ANSI C63.10 Section 11.6.
-	RSS-GEN 6.7	99% OBW	Reporting purposes only	ANSI C63.10 Section 6.9.3.
15.247 (a) (2)	RSS-247 5.2 (a)	6dB BW	Compliant	None
15.247 (b) (3)	RSS-247 5.4 (d)	Output Power		
See Comment		Average power	Reporting purposes only	Per ANSI C63.10, Section 11.9.2.3.2.
15.247 (e)	RSS-247 5.2 (b)	PSD	Compliant	None
15.247 (d)	RSS-247 5.5	Conducted Spurious Emissions		
15.209, 15.205	RSS-GEN 8.9, 8.10	Radiated Emissions		
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions	Not Applicable	The EUT is battery powered.

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024, KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, RSS-GEN Issue 5 + A1 + A2, and RSS-247 Issue 3.

4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, certification # 0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building: 12 Laboratory Dr RTP, NC 27709, U.S.A	US0067	2180C	825374
☒	Building: 2800 Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A		27265	

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Radio Frequency (Spectrum Analyzer)	141.2 Hz
Occupied Channel Bandwidth	1.22%
RF output power, conducted	1.3 dB (PK) 0.45 dB (AV)
Power Spectral Density, conducted	2.47 dB
Unwanted Emissions, conducted	1.94 dB
All emissions, radiated	6.01 dB
Conducted Emissions (0.150-30MHz) - LISN	3.40 dB
Temperature	0.57°C
Humidity	3.39%
DC Supply voltages	1.70%
Time	3.39%

Uncertainty figures are valid to a confidence level of 95%.

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
 $36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a digital transceiver that contains a BLE radio. This report covers full testing of the BLE radio.

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2402 - 2480	BLE 125 kbps	7.48	5.60
2402 - 2480	BLE 1 Mbps	7.37	5.46

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna(s) gain and type, as provided by the manufacturer' are as follows:
The radio utilizes an antenna with the following type and maximum gain:

Antenna #	Type	Frequency Range (MHz)	Maximum Gain (dBi)
Antenna 1	Inverted F	2402-2480	1.33
Antenna 2	Inverted F	2402-2480	2.2

6.4. SOFTWARE AND FIRMWARE

Software Version. 1.64

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz and above 18GHz were performed on the highest gain internal antenna and channel with the highest PSD as worst-case scenario.

Radiated emissions between 1GHz and 18GHz were performed on the data-rate with the highest power and PSD on low, middle and high channels. Band edge was performed on both data-rates: 125 kbps and 1 Mbps.

Each EUT antenna was investigated in three orthogonal axes, X, Y, and Z. The worst-case orientation was determined to be the X-orientation for antenna 1, and Y-orientation for antenna 2. Therefore, all testing was performed with the EUT in the X-orientation for antenna 1 and Y-orientation for antenna 2.

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Lenovo	Thinkpad T14 Gen 3	PF4FKVY8	NA
NMEA 2000 T-Connector	Garmin	330-00563-20	NA	NA
Load	NA	NA	NA	NA

I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Mini-USB	1	USB	Shielded	<3m	Laptop to adapter
2	N2K	2	N2K	Shielded	<3m	T-Connector to Hub
3	N2K	2	N2K	Shielded	<3m	T-Connector to Power Supply
4	N2K	2	N2k	Shielded	<3m	4x cable extension for USB to T-Connector under chamber
5	N2K	1	N2K	Shielded	<3m	Hub to Load

TEST SETUP

The EUT is connected to a test laptop during the tests. Test software exercised the radio card, and the laptop was left outside the chamber during tests.

SETUP DIAGRAMS

Please refer to R15560239-EP2 for setup diagrams

7. MEASUREMENT METHOD

On Time and Duty Cycle: ANSI C63.10-2020 Section 11.6

6 dB BW: ANSI C63.10-2020 Subclause -11.8.2

Occupied BW (99%): ANSI C63.10-2020 Section 6.9.3

Output Power: ANSI C63.10-2020 Subclause -11.9.1.2 Method PKPM1 Peak-reading power meter
ANSI C63.10-2020 Subclause -11.9.2.3.2 Method AVGPM-G (Measurement using a gated RF average-reading power meter)

PSD: ANSI C63.10-2020 Subclause -11.10.2 Method PKPSD (peak PSD)

Conducted emissions non-restricted frequency bands: ANSI C63.10-2020 Subclause -11.11 and 6.10.4

Radiated emissions restricted frequency bands: ANSI C63.10-2020 Subclause -11.12.1 and 6.10.5

General radiated emissions: ANSI C63.10 Subclause - 6.3-6.6

8. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
Common Equipment					
Conducted Room 2					
90410	Spectrum Analyzer	Keysight Technologies	N9030A	2024-06-14	2025-06-14
Power Software	Boonton Power Analyzer	Boonton	Version 3.0.13.0	NA	NA
SOFTEMI	Antenna Port Software	UL	Version 2024.2.23	NA	NA
CBL093	Micro-Coax UTiFLEX Cable Assembly, Low Loss, 40GHz	Carlisle Interconnect Technologies	UFA147A-2-0360-200200	2024-03-01	2025-03-31
211057	Real-Time Peak Power Sensor 50MHz to 8GHz	Boonton	RTP5000	2024-08-01	2025-08-01
245765	Environmental Meter	Control Company	06-662-4	2025-01-24	2026-01-24
-	Power Supply	Elektro-Automatik	D-41747	NA	NA
91219	True RMS Multimeter	Agilent	U1232A	2024-08-01	2025-08-01

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 4)

Equip. ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
0.009-30MHz					
135144	Active Loop Antenna	ETS-Lindgren	6502	2024-10-02	2025-10-02
30-1000 MHz					
90628	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2024-01-02	2026-01-02
1-18 GHz					
89509	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2023-05-23	2025-05-23
18-26.5 GHz					
204704	Horn Antenna, 18-26.5GHz	Com-Power	AH-826	2023-07-20	2025-07-20
Gain-Loss Chains					
207638	Gain-loss string: 0.009-30MHz	Various	Various	2024-05-22	2025-05-22
207639	Gain-loss string: 25-1000MHz	Various	Various	2024-05-22	2025-05-22
207640	Gain-loss string: 1-18GHz	Various	Various	2024-05-22	2025-05-22
225795	Gain-loss string: 18-40GHz	Various	Various	2024-05-22	2025-05-22
Receiver & Software					
197955	Spectrum Analyzer	Rohde & Schwarz	ESW44	2024-04-16	2025-04-16
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
Additional Equipment used					
241204	Environmental Meter	Fisher Scientific	15-077-963	2023-09-05	2025-09-05

9. ANTENNA PORT TEST RESULTS

9.1. 99% BANDWIDTH

LIMITS

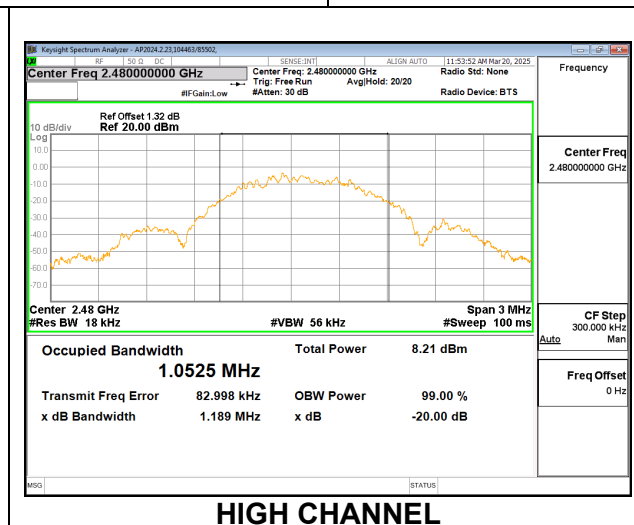
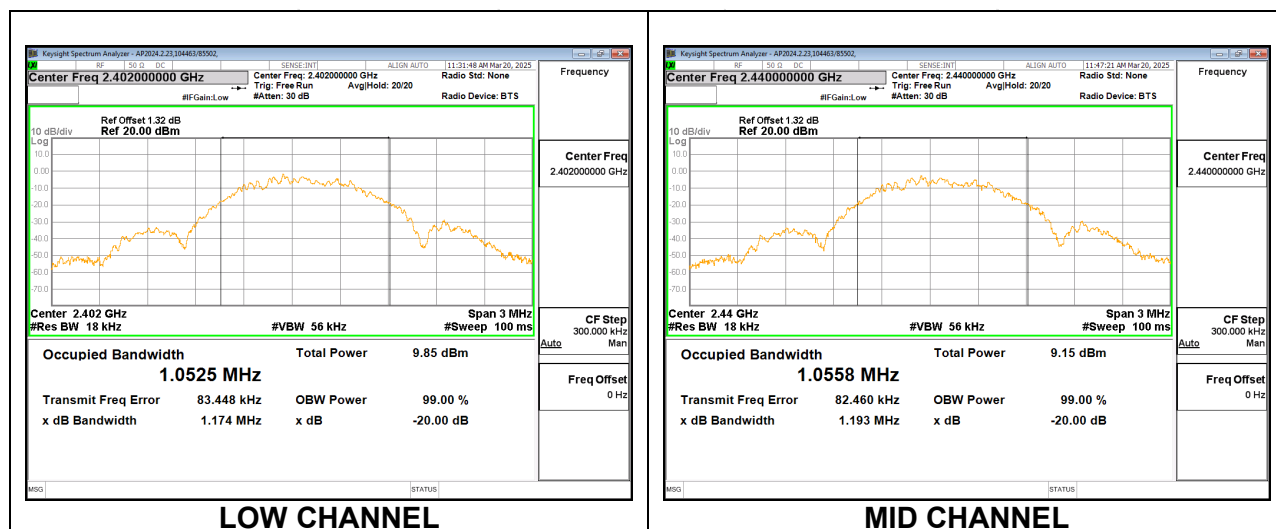
None; for reporting purposes only.

RESULTS

9.1.1. BLE (1Mbps)

Antenna 1

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0525
Middle	2440	1.0558
High	2480	1.0525



Antenna 2

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0548
Middle	2440	1.0559
High	2480	1.0547



9.1.2. BLE (125Kbps)

Antenna 1

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0504
Middle	2440	1.0610
High	2480	1.0599



Antenna 2

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0558
Middle	2440	1.0595
High	2480	1.0652



9.2. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

RSS-247 5.2 (a)

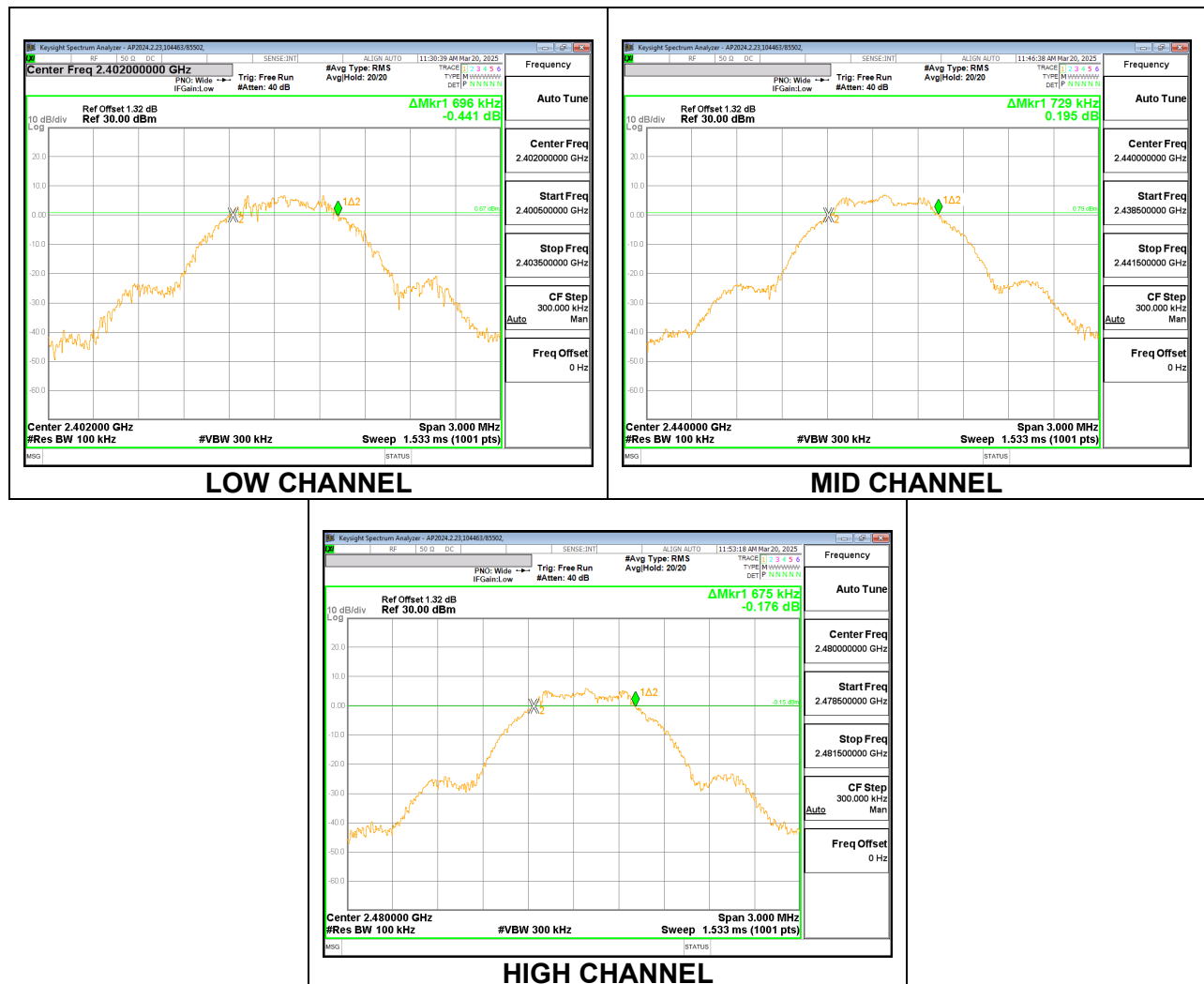
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

9.2.1.BLE (1Mbps)

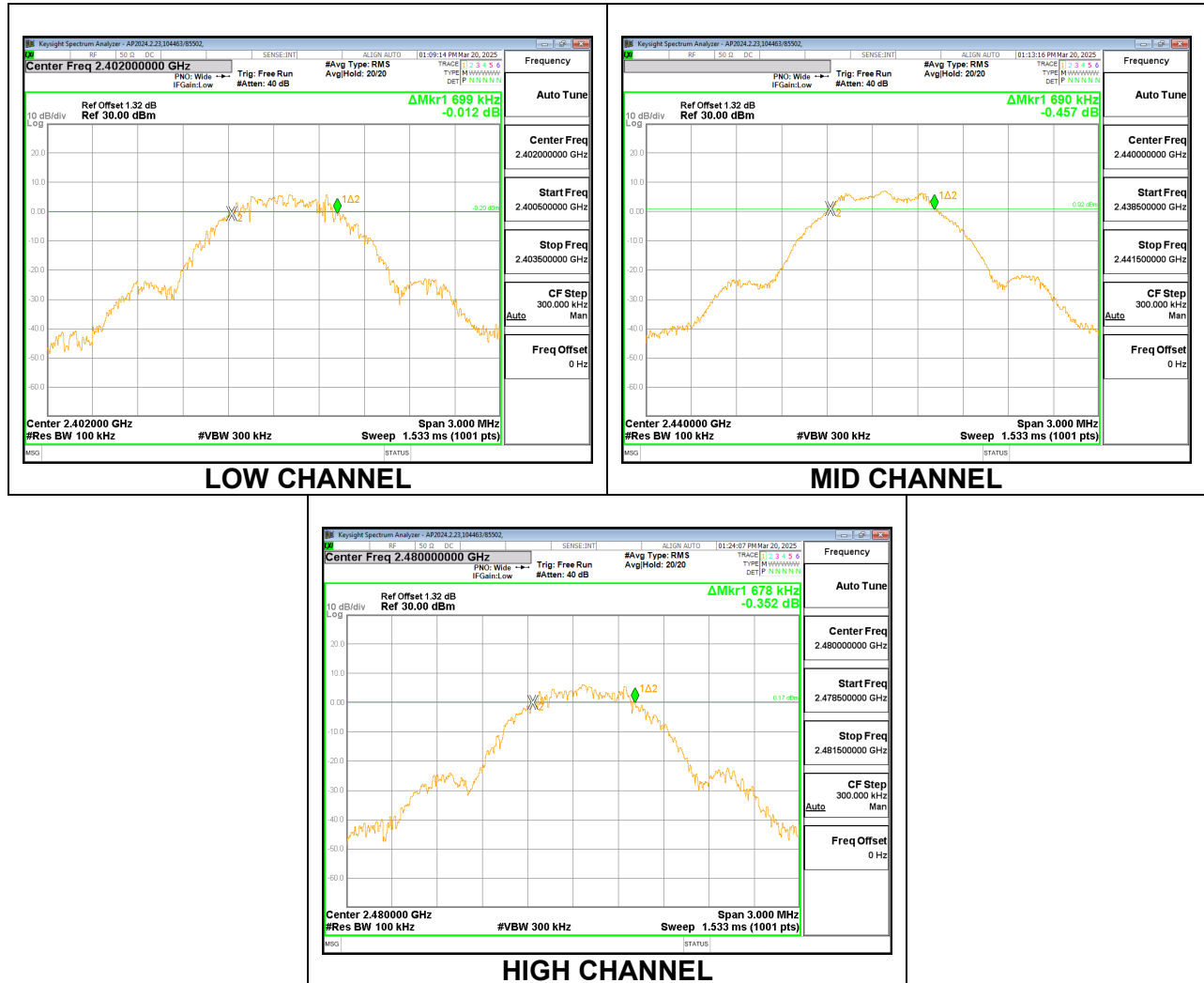
Antenna 1

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.6960	0.5
Middle	2440	0.7290	0.5
High	2480	0.6750	0.5



Antenna 2

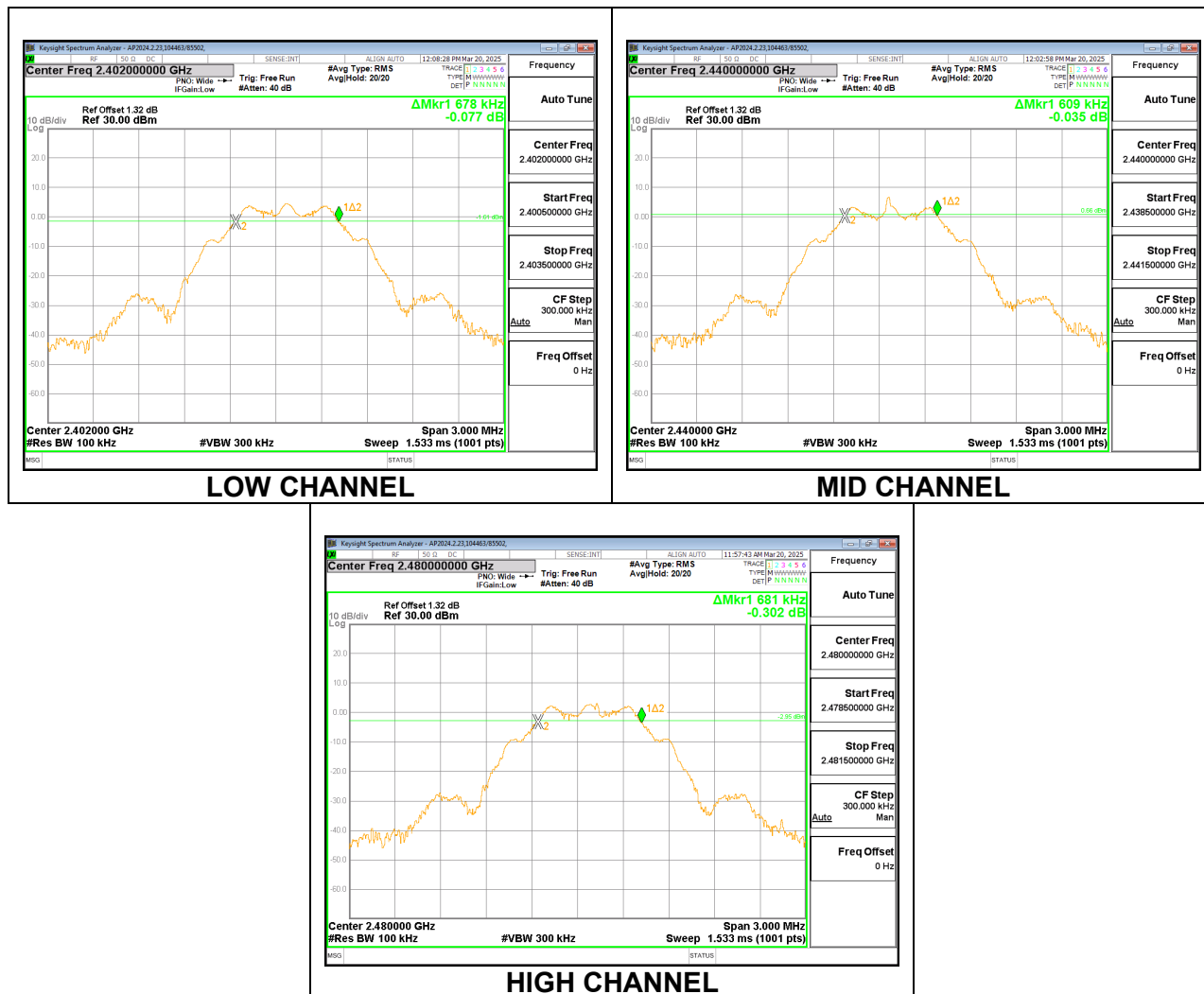
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.6990	0.5
Middle	2440	0.6900	0.5
High	2480	0.6780	0.5



9.2.2. BLE (125Kbps)

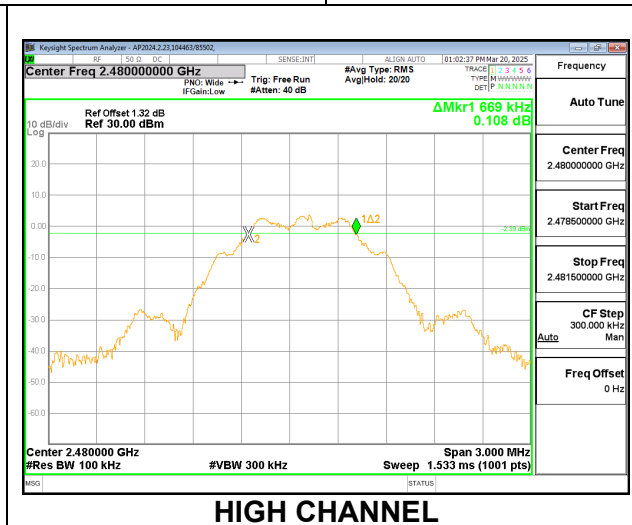
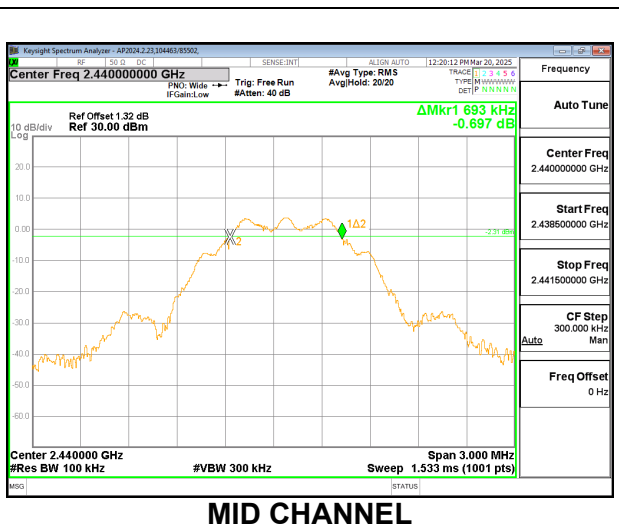
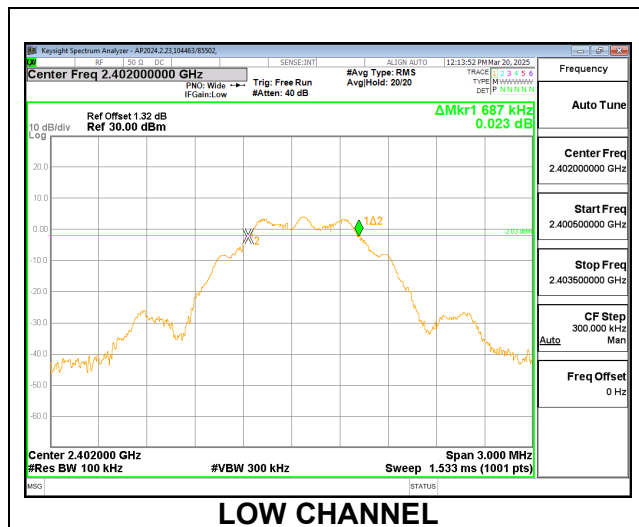
Antenna 1

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.6780	0.5
Middle	2440	0.6090	0.5
High	2480	0.6810	0.5



Antenna 2

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.6870	0.5
Middle	2440	0.6930	0.5
High	2480	0.6690	0.5



9.3. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

RSS-247 5.4 (d)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 0.7 dB (EUT cable) was entered as an offset in the power meter.

The power output was measured on the EUT antenna port using an SMA cable connected to a power meter via wideband power sensor. Peak output power was read directly from the power meter.

RESULTS

9.3.1. BLE (1Mbps)

Antenna 1

Tested By:	104463/85502
Date:	2025-03-20

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	7.370	30	-22.630
Middle	2440	6.690	30	-23.310
High	2480	5.700	30	-24.300

Antenna 2

Tested By:	104463/85502
Date:	2025-03-20

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	7.330	30	-22.670
Middle	2440	7.140	30	-22.860
High	2480	6.530	30	-23.470

9.3.2. BLE (125Kbps)

Antenna 1

Tested By:	104463/85502
Date:	2025-03-20

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	7.480	30	-22.520
Middle	2440	6.610	30	-23.390
High	2480	5.710	30	-24.290

Antenna 2

Tested By:	104463/85502
Date:	2025-03-20

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	7.340	30	-22.660
Middle	2440	7.180	30	-22.820
High	2480	6.570	30	-23.430

9.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 0.7 dB (EUT cable) was entered as an offset in the power meter.

The power output was measured on the EUT antenna port using an SMA cable connected to a power meter via wideband average power sensor. Gated average output power was read directly from the power meter.

RESULTS

9.4.1. BLE (1Mbps)

Antenna 1

Tested By:	104463/85502
Date:	2025-03-20

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	7.209
Middle	2440	6.467
High	2480	5.487

Antenna 2

Tested By:	104463/85502
Date:	2025-03-20

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	7.122
Middle	2440	6.987
High	2480	6.353

9.4.2. BLE (125Kbps)

Antenna 1

Tested By:	104463/85502
Date:	2025-03-20

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	7.281
Middle	2440	6.41
High	2480	5.45

Antenna 2

Tested By:	104463/85502
Date:	2025-03-20

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	7.111
Middle	2440	6.975
High	2480	6.366

9.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

RSS-247 (5.2) (b)

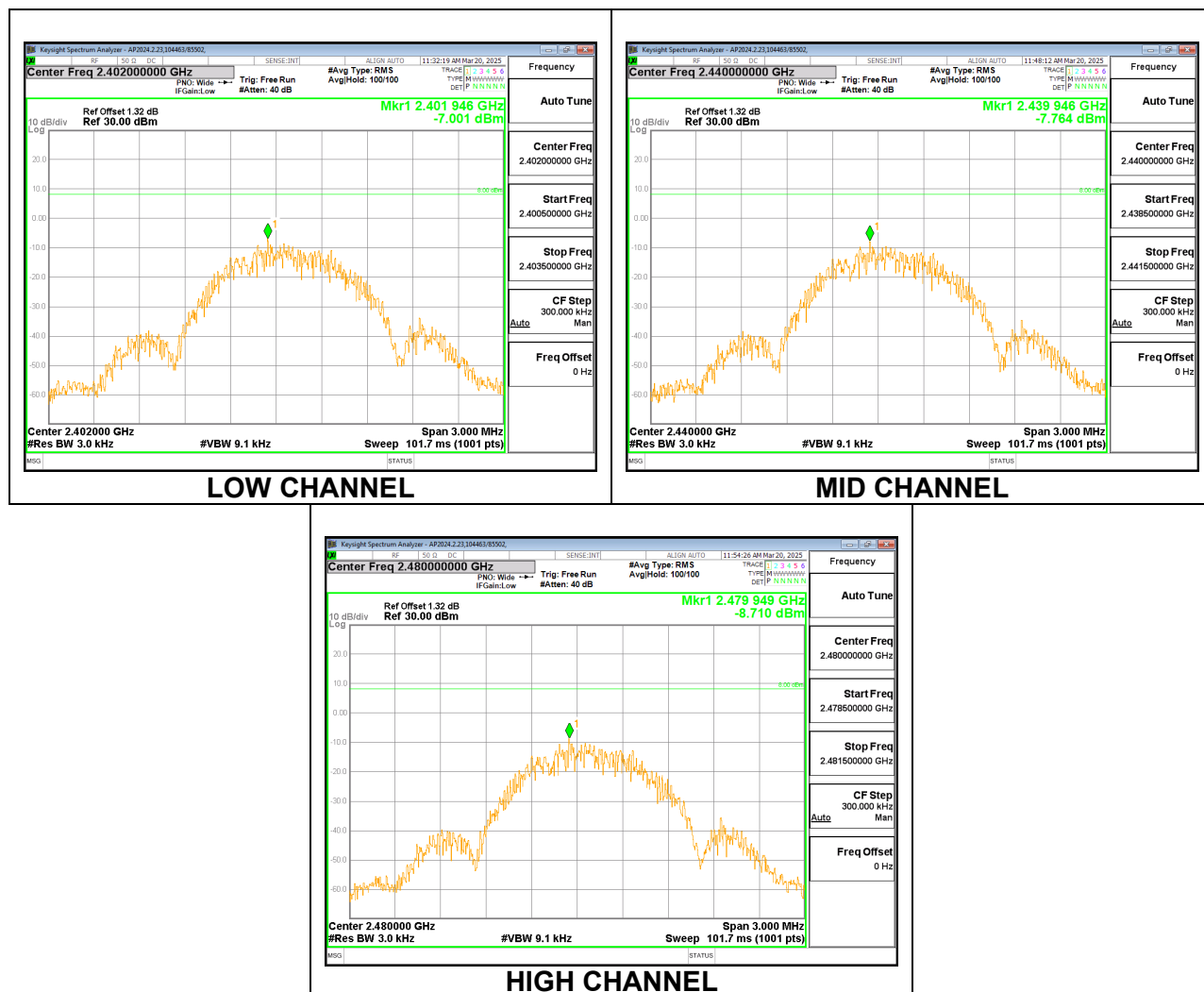
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

9.5.1. BLE (1Mbps)

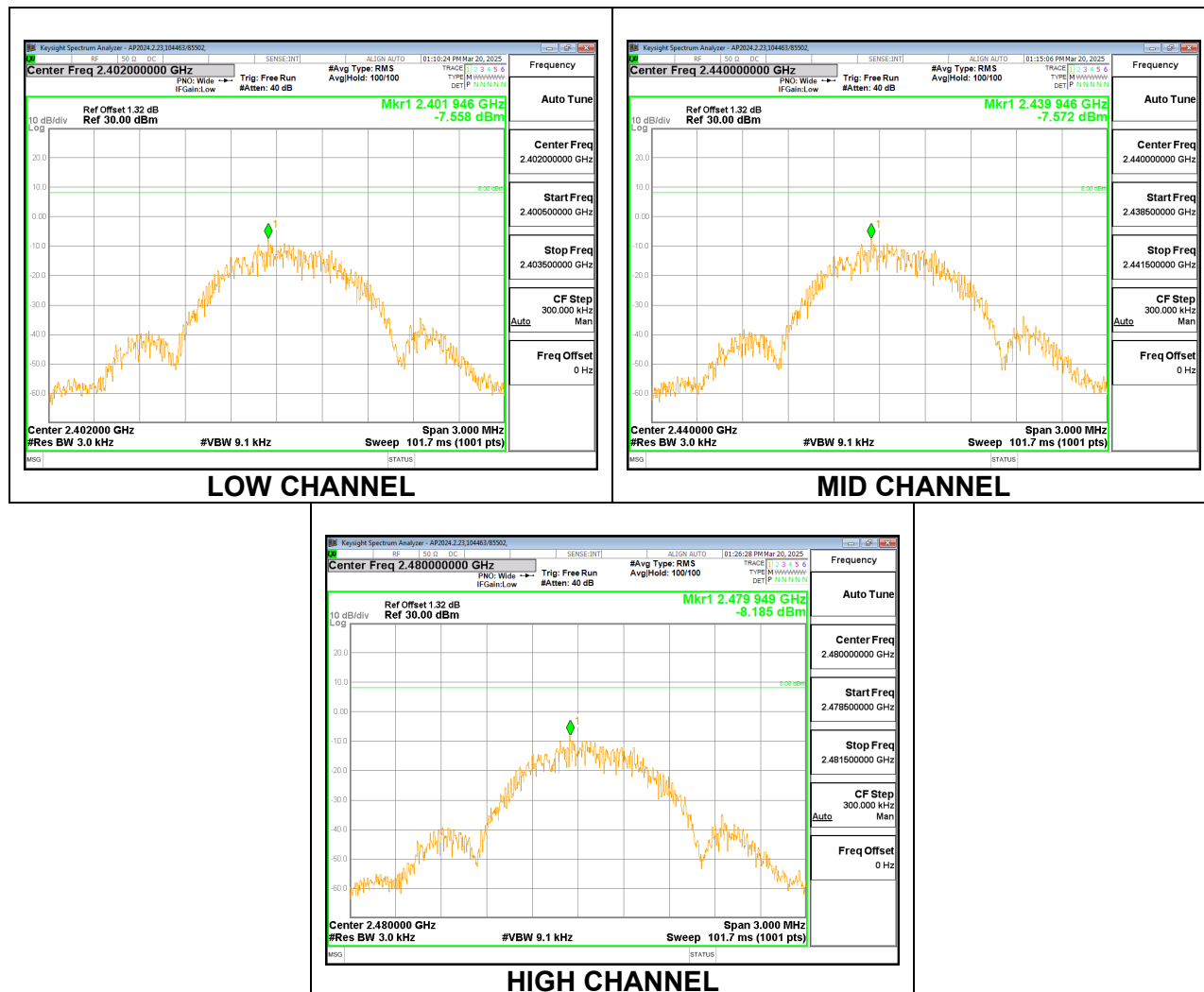
Antenna 1

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-7.001	8	-15.00
Middle	2440	-7.764	8	-15.76
High	2480	-8.710	8	-16.71



Antenna 2

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-7.558	8	-15.56
Middle	2440	-7.572	8	-15.57
High	2480	-8.185	8	-16.19



9.5.2. BLE (125Kbps)

Antenna 1

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	1.282	8	-6.72
Middle	2440	0.916	8	-7.08
High	2480	-0.145	8	-8.15



Antenna 2

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	0.927	8	-7.07
Middle	2440	1.101	8	-6.90
High	2480	0.361	8	-7.64



9.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

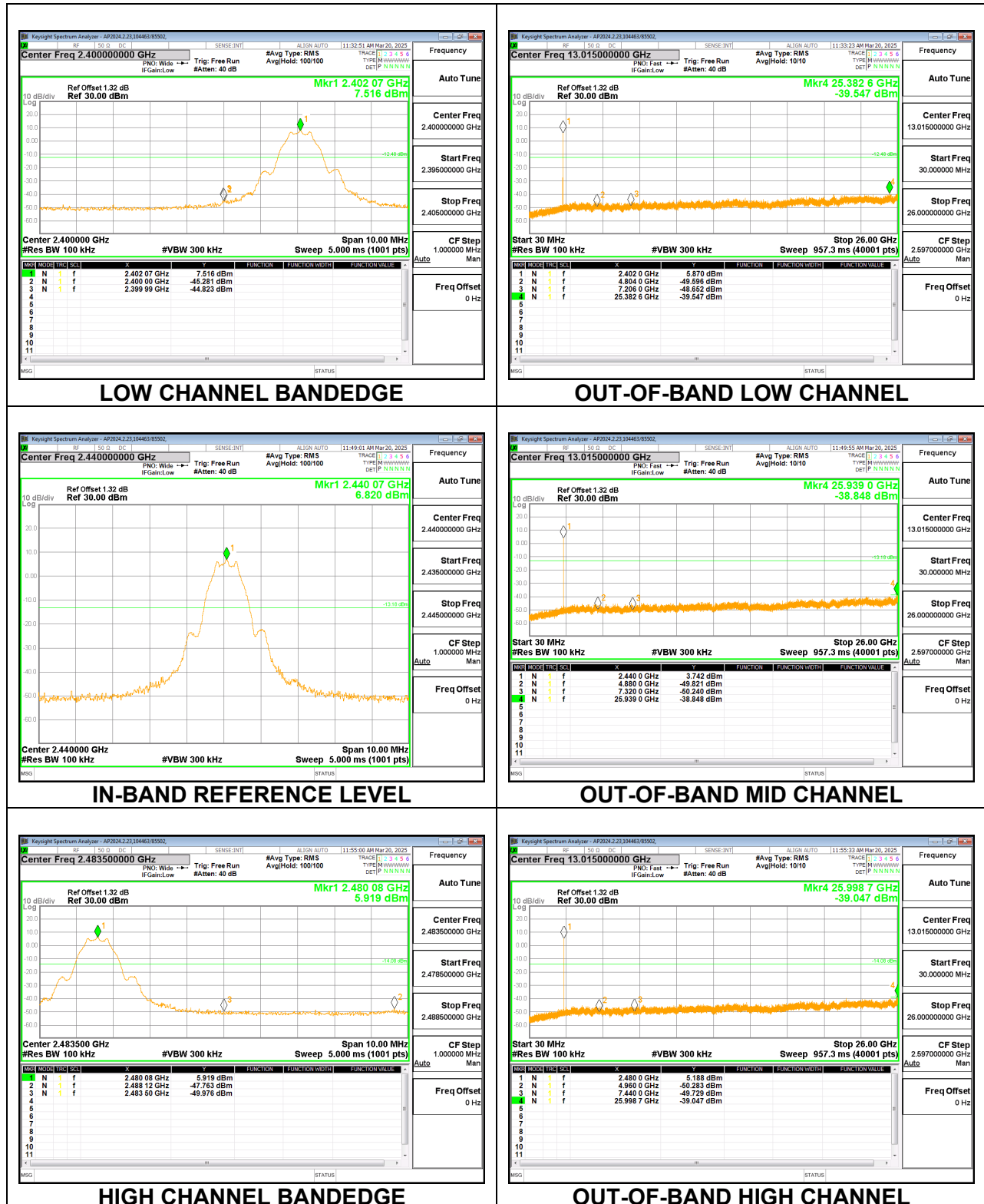
FCC §15.247 (d)
RSS-247 5.5

Output power was measured based on the use of a peak measurement, therefore the required attenuation is -20 dBc.

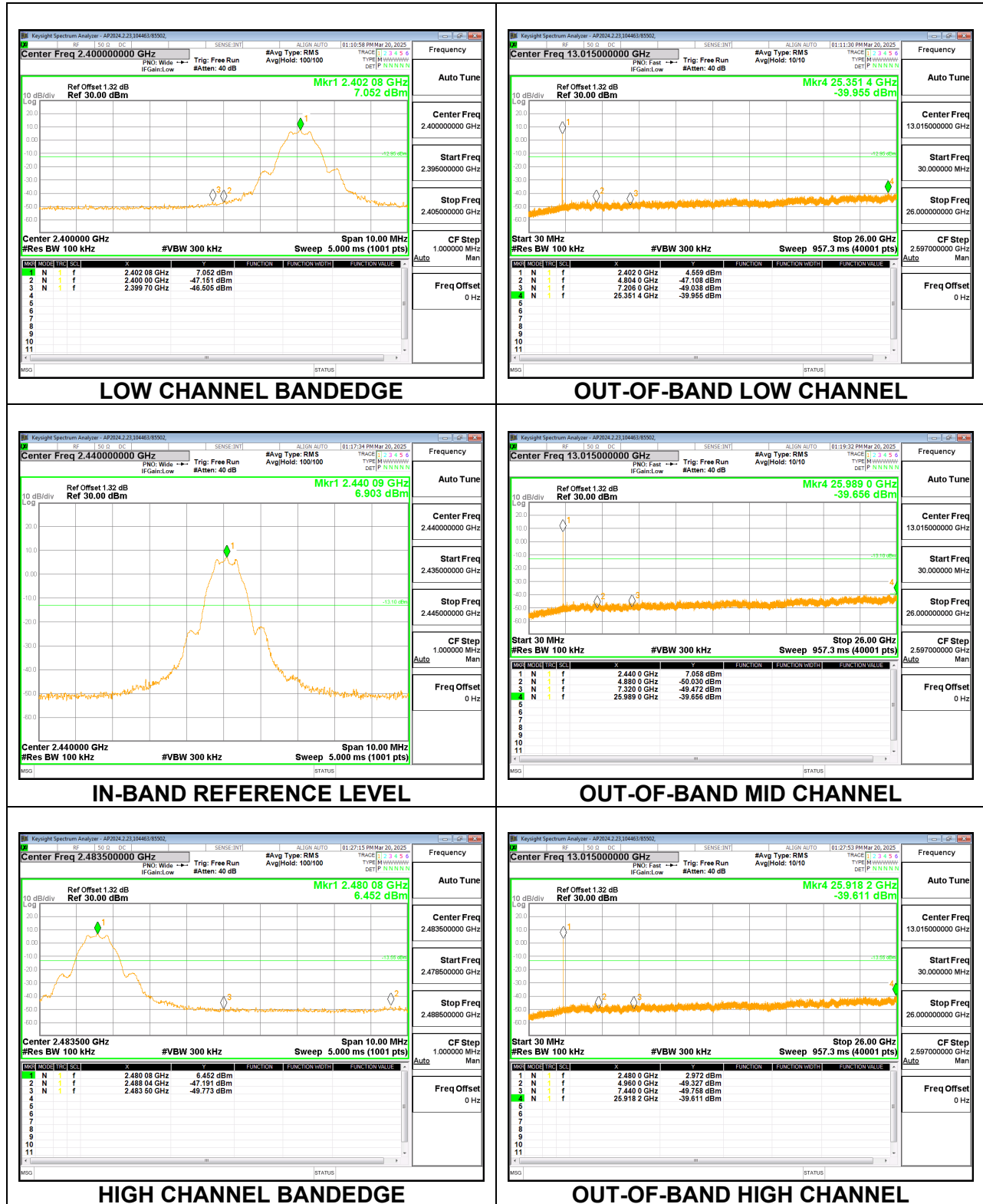
RESULTS

9.6.1. BLE (1Mbps)

Antenna 1

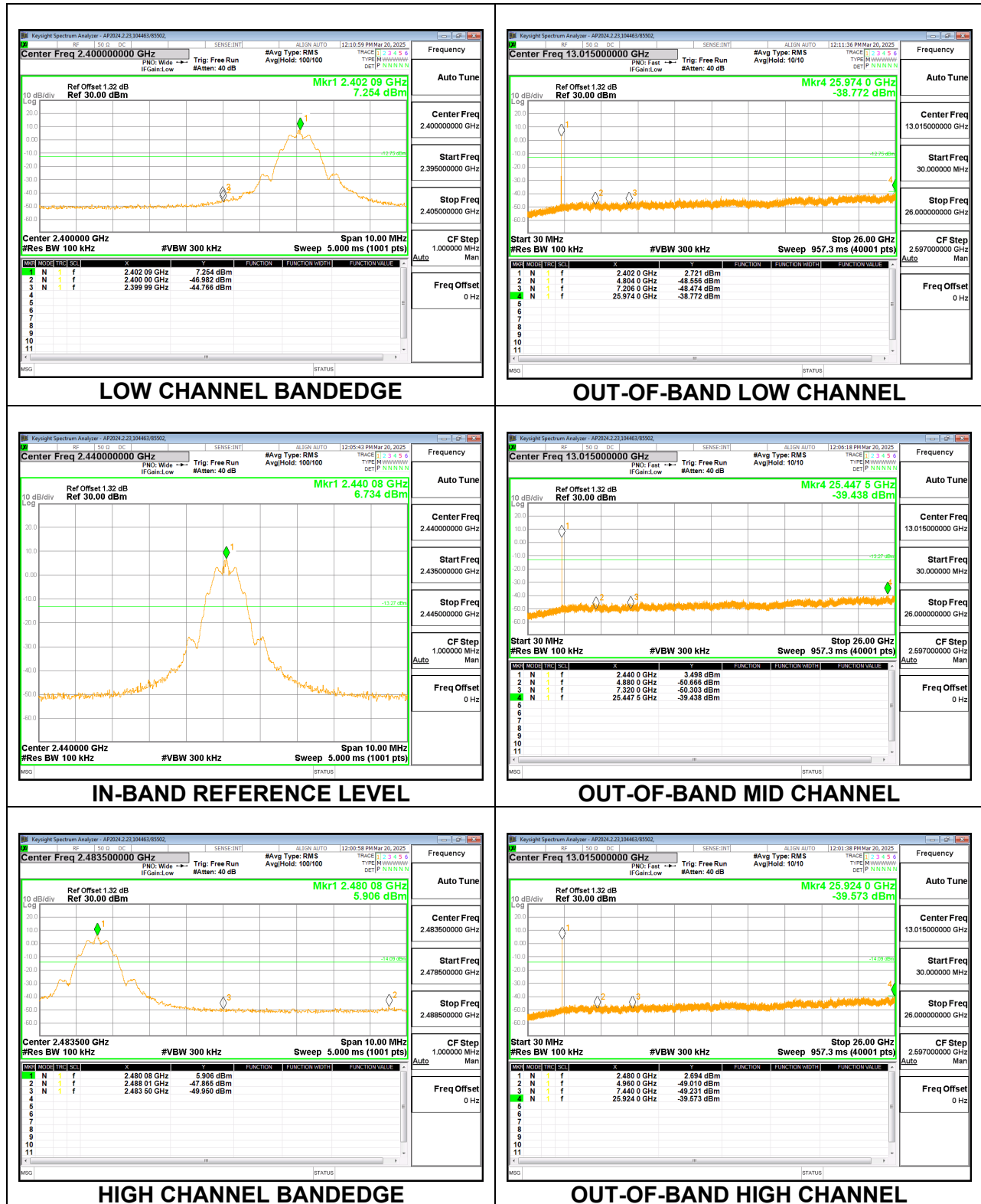


Antenna 2

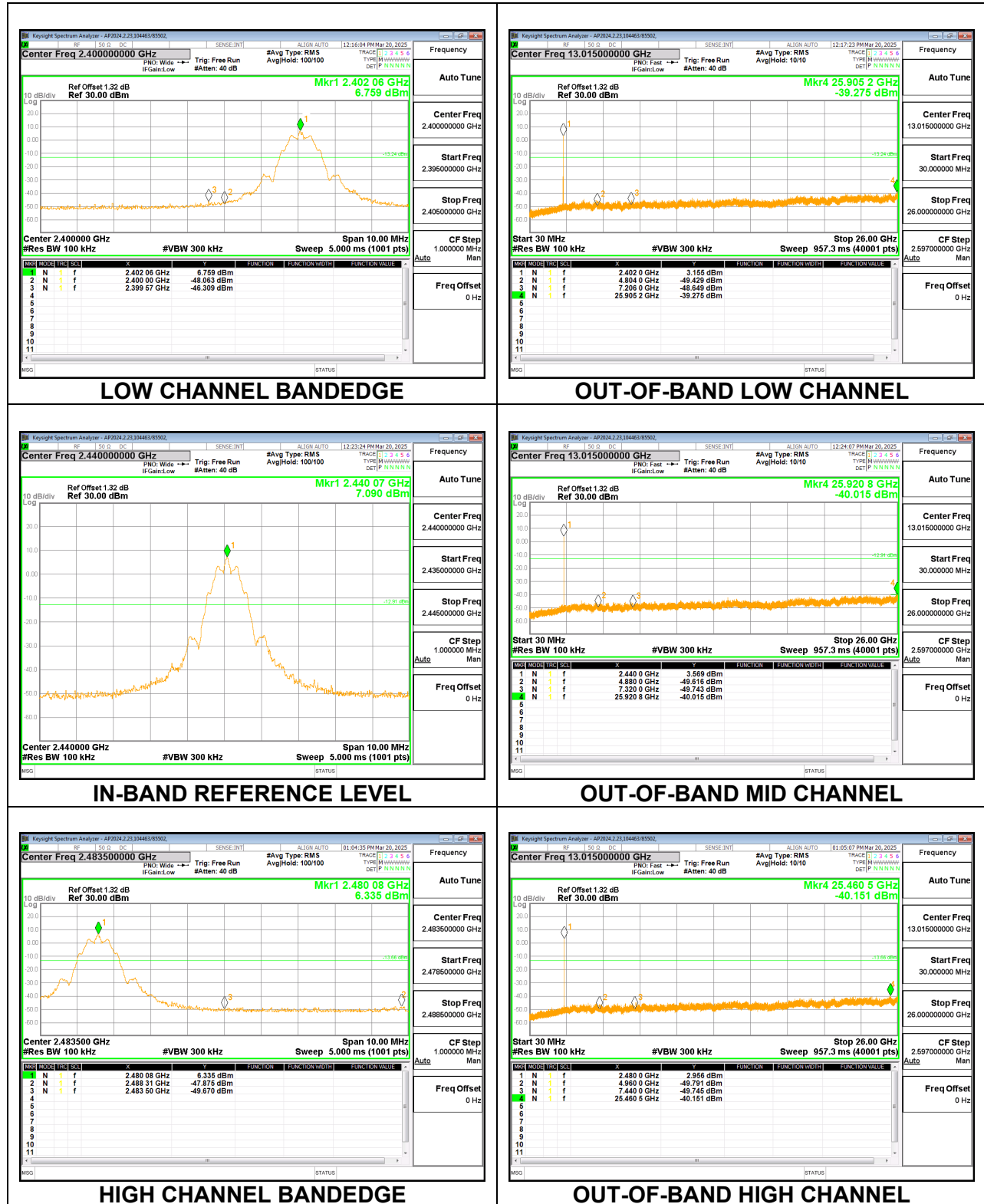


9.6.2. BLE (125Kbps)

Antenna 1



Antenna 2



10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
0.009-0.490	2400/F(kHz) @ 300 m	-
0.490-1.705	24000/F(kHz) @ 30 m	-
1.705 - 30	30 @ 30m	-
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

RSS-GEN Clause 8.9 and 8.10

Frequency Range (kHz)	Field Strength Limit (uA/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
0.009-0.490	6.37/F(kHz) @ 300 m	-
0.490-1.705	63.7/F(kHz) @ 30 m	-
1.705 - 30	0.08 @ 30m	-
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements in the 30-1000MHz range, 9kHz for peak and/or quasi-peak detection measurements in the 0.15-30MHz range and 200Hz for peak and/or quasi-peak detection measurements in the 9 to 150kHz range. Peak detection is used unless otherwise noted as quasi-peak or average (9-90kHz and 110-490kHz).

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3MHz for peak measurements.

For final measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and, as applicable, for average measurements. Linear voltage averaging was used.

The spectrum from 1 GHz to 18 GHz is investigated with the transmitter set to low, middle, and high channels in each applicable band. Below 1GHz and above 18GHz emissions, the channel with the highest PSD was tested.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

3D antenna use - For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel).

Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

KDB 414788 Open Field Site (OFS) and Chamber Correlation Justification

OFS and chamber correlation testing had been performed and chamber measured test result is the worst-case test result.

10.2. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

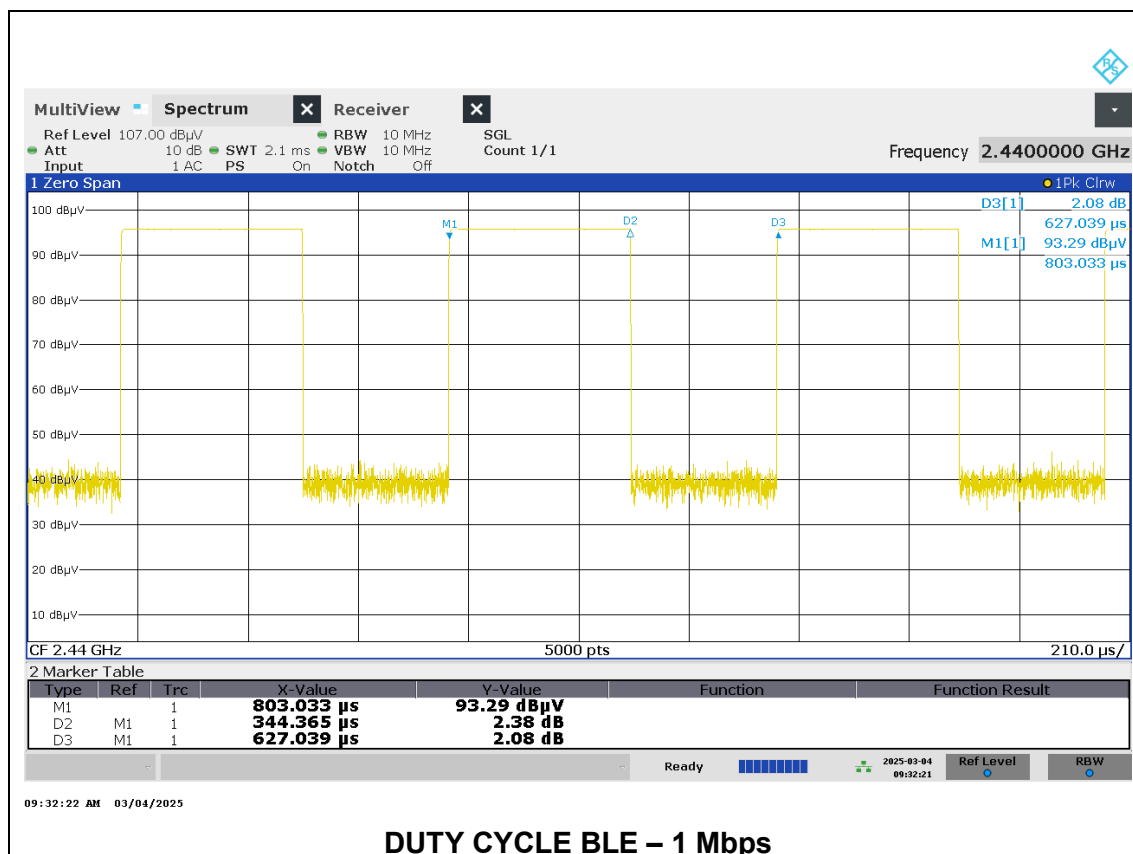
KDB 558074 Zero-Span Spectrum Analyzer Method.

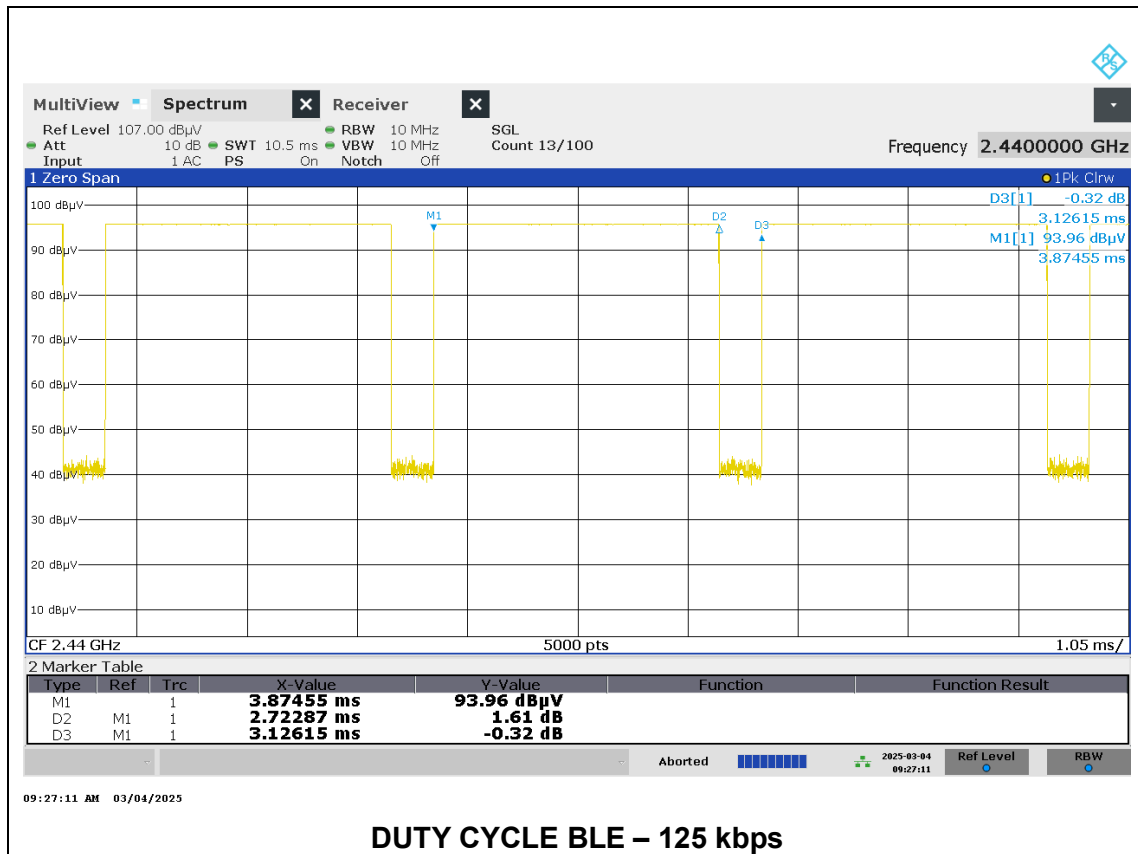
ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
BLE - 1 Mbps	0.344365	0.627039	0.549	54.92	5.21	2.904
BLE - 125 kbps	2.72287	3.12615	0.871	87.10	1.20	0.367

DUTY CYCLE PLOTS

Tested By: 19289





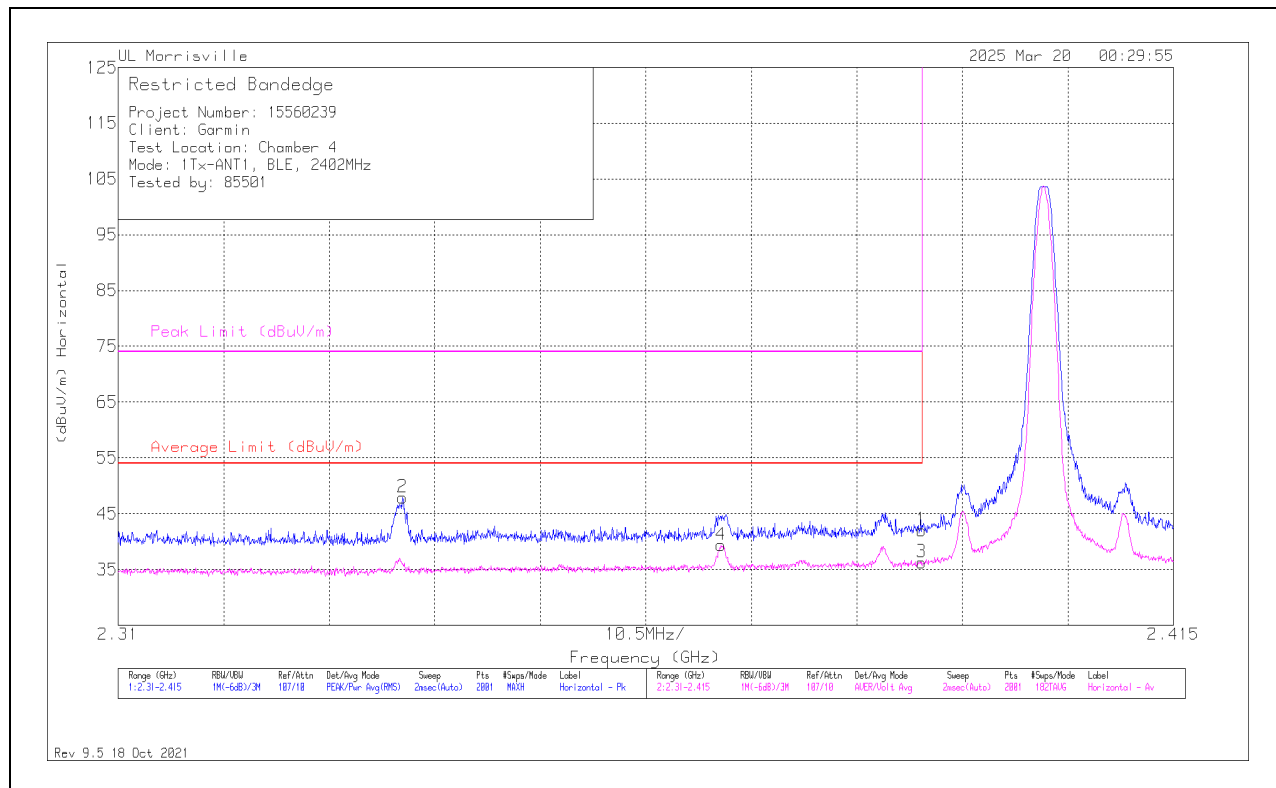
10.3. TRANSMITTER ABOVE 1 GHz

10.3.1. BLE (1Mbps)

Antenna 1

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



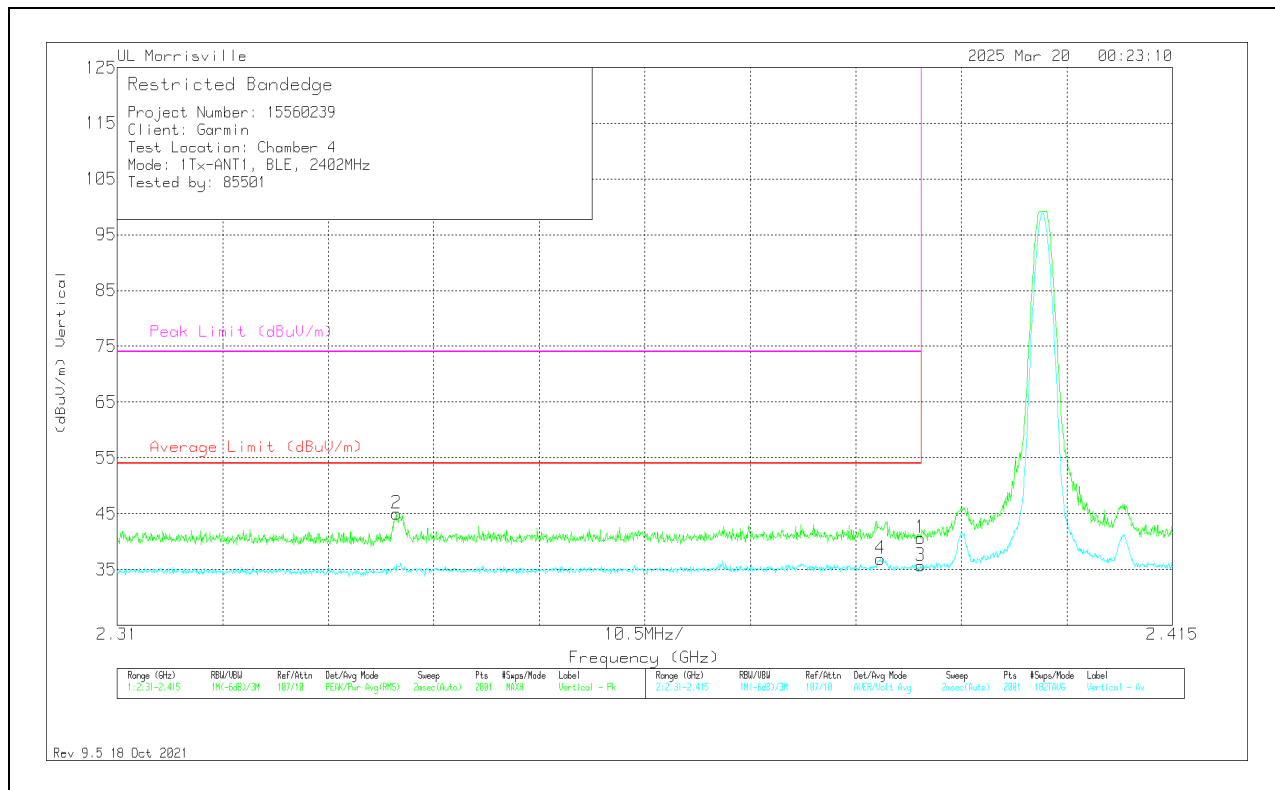
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38996	33.19	Pk	32	-23.2	0	41.99	-	-	74	-32.01	15	266	H
2	* 2.3383	39.15	Pk	31.9	-23.1	0	47.95	-	-	74	-26.05	15	266	H
3	* 2.38996	22.2	ADV	32	-23.2	5.21	36.21	54	-17.79	-	-	15	266	H
4	* 2.36996	25.22	ADV	31.9	-23	5.21	39.33	54	-14.67	-	-	15	266	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38996	31.79	Pk	32	-23.2	0	40.59	-	-	74	-33.41	279	266	V
2	* 2.33777	36.26	Pk	31.9	-23.1	0	45.06	-	-	74	-28.94	279	266	V
3	* 2.38996	21.68	ADV	32	-23.2	5.21	35.69	54	-18.31	-	-	279	266	V
4	* 2.38592	22.89	ADV	32	-23.2	5.21	36.9	54	-17.1	-	-	279	266	V

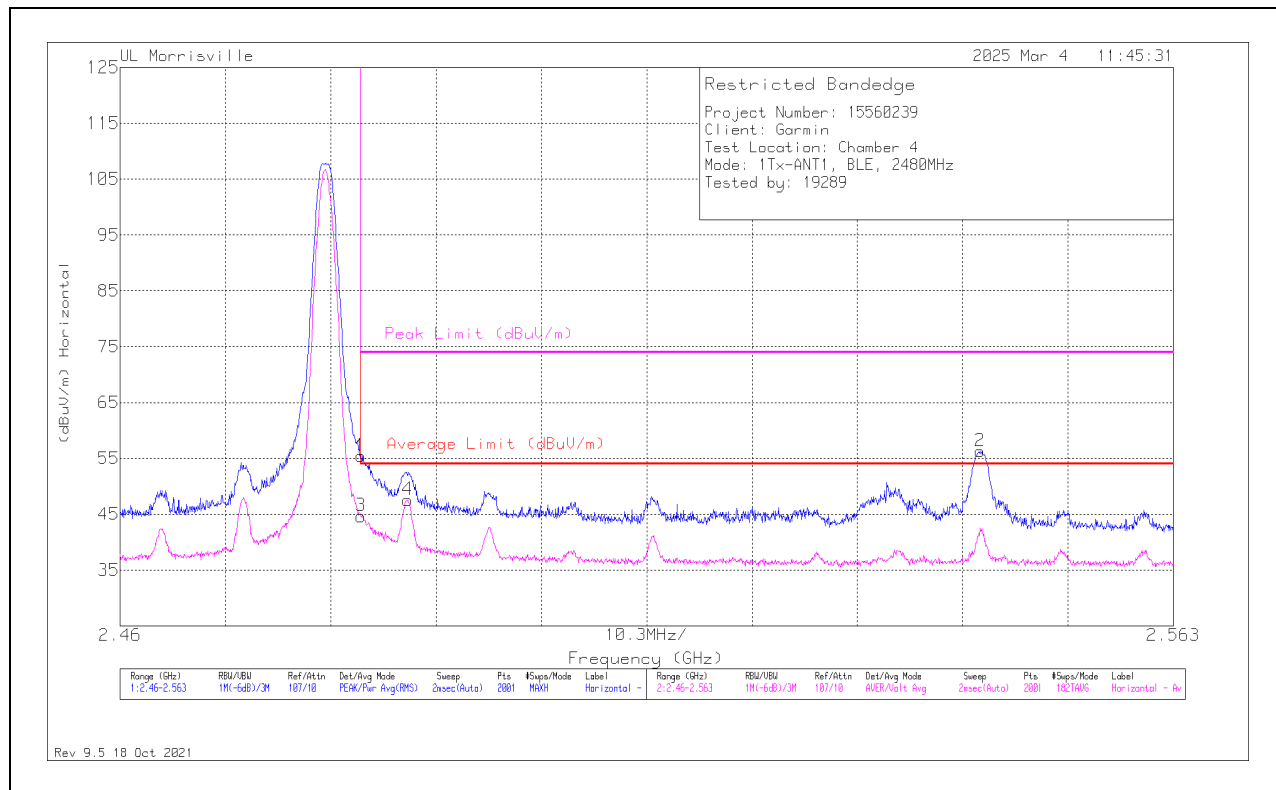
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



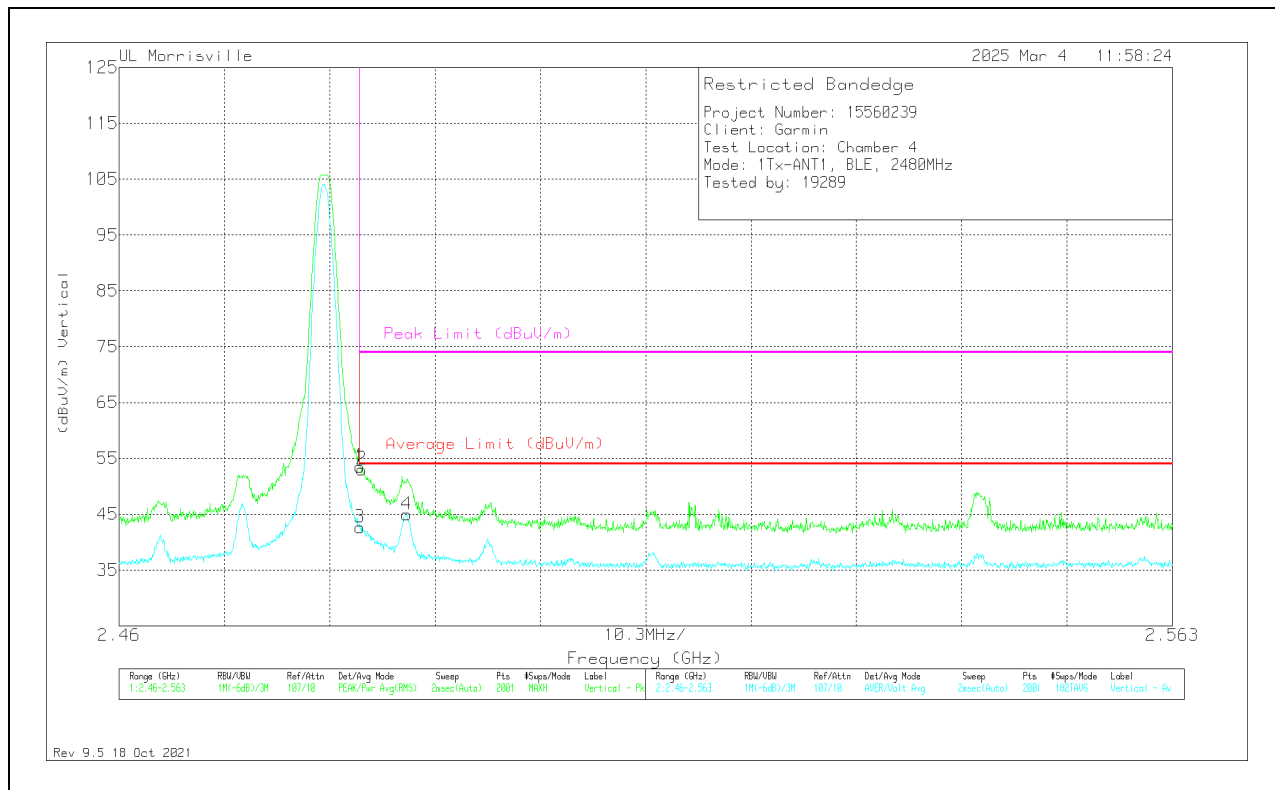
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48354	45.91	Pk	32.3	-22.8	0	55.41	-	-	74	-18.59	7	112	H
2	2.5441	46.47	Pk	32.5	-22.7	0	56.27	-	-	74	-17.73	7	112	H
3	* 2.48354	29.95	ADV	32.3	-22.8	5.21	44.66	54	-9.34	-	-	7	112	H
4	* 2.48812	32.83	ADV	32.3	-22.8	5.21	47.54	54	-6.46	-	-	7	112	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48354	44	Pk	32.3	-22.8	0	53.5	-	-	74	-20.5	303	367	V
2	* 2.48374	43.52	Pk	32.3	-22.8	0	53.02	-	-	74	-20.98	303	367	V
3	* 2.48354	27.93	ADV	32.3	-22.8	5.21	42.64	54	-11.36	-	-	303	367	V
4	* 2.48812	30.25	ADV	32.3	-22.8	5.21	44.96	54	-9.04	-	-	303	367	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

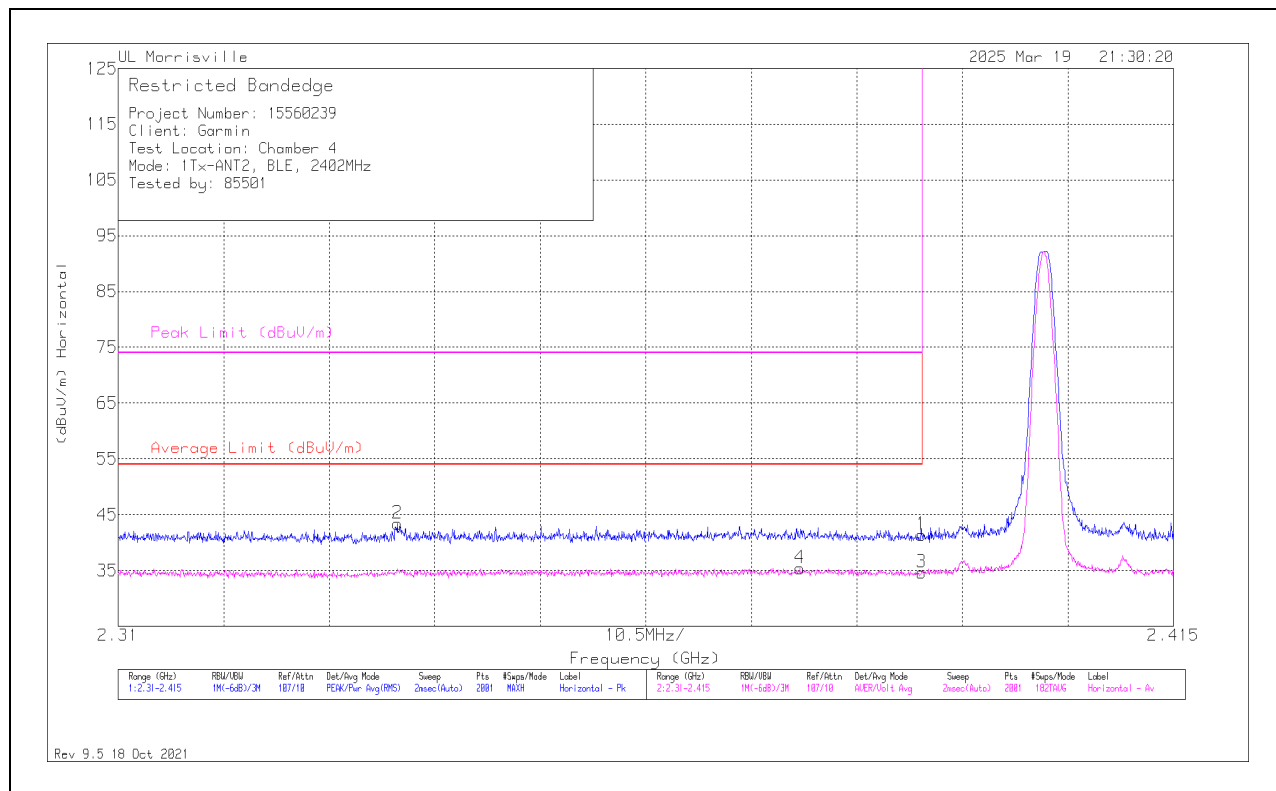
Pk - Peak detector

ADV - Linear Voltage Average

Antenna 2

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



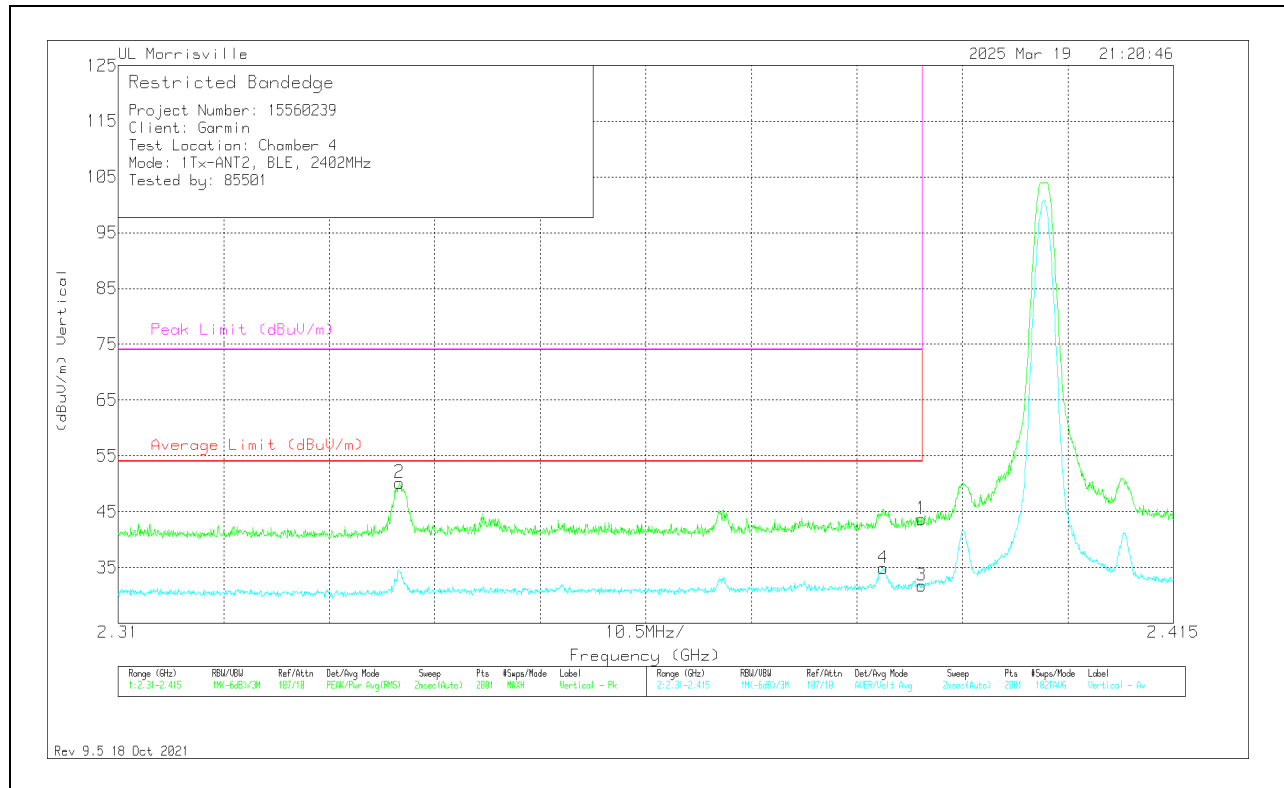
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38996	32.6	Pk	32	-23.2	0	41.4	-	-	74	-32.6	129	124	H
2	* 2.33777	34.56	Pk	31.9	-23.1	0	43.36	-	-	74	-30.64	129	124	H
3	* 2.38996	20.66	ADV	32	-23.2	5.21	34.67	54	-19.33	-	-	129	124	H
4	* 2.37783	21.16	ADV	32	-23	5.21	35.37	54	-18.63	-	-	129	124	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38996	34.87	Pk	32	-23.2	0	43.67	-	-	74	-30.33	72	122	V
2	* 2.33798	41.4	Pk	31.9	-23.1	0	50.2	-	-	74	-23.8	72	122	V
3	* 2.38996	17.69	ADV	32	-23.2	5.21	31.7	54	-22.3	-	-	72	122	V
4	* 2.38613	20.92	ADV	32	-23.3	5.21	34.83	54	-19.17	-	-	72	122	V

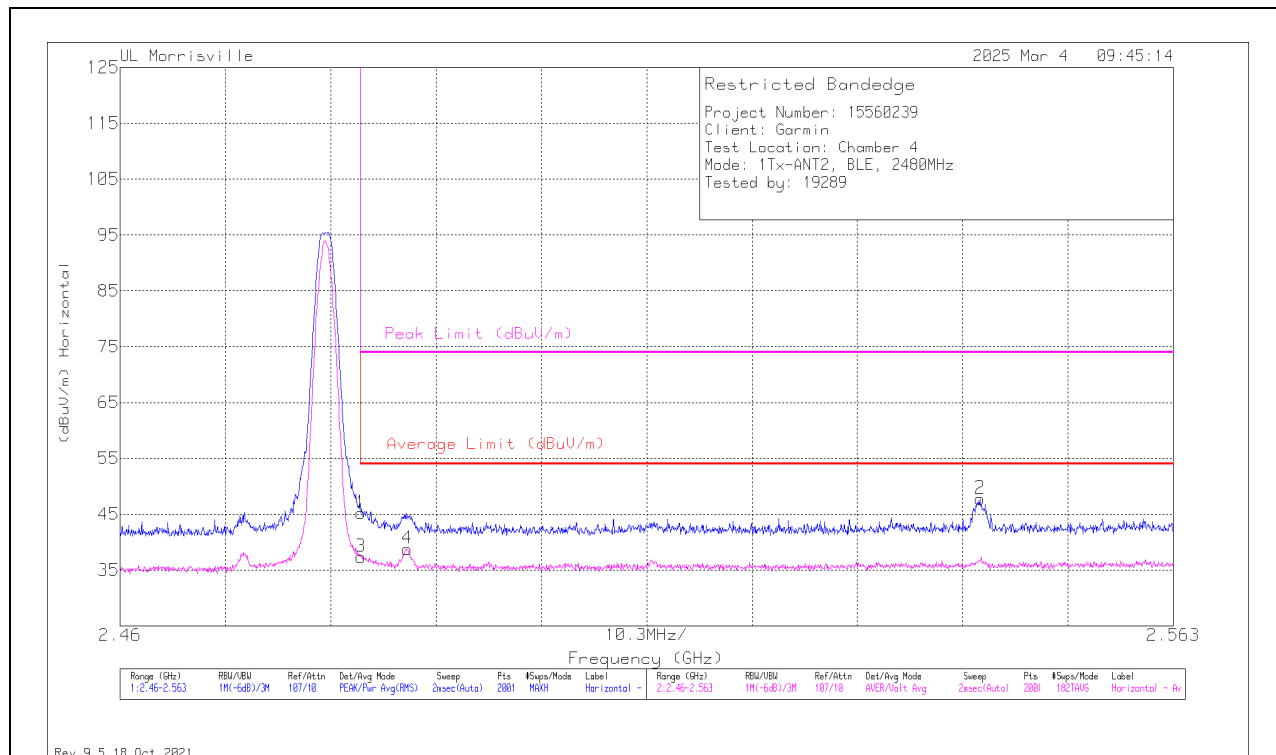
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



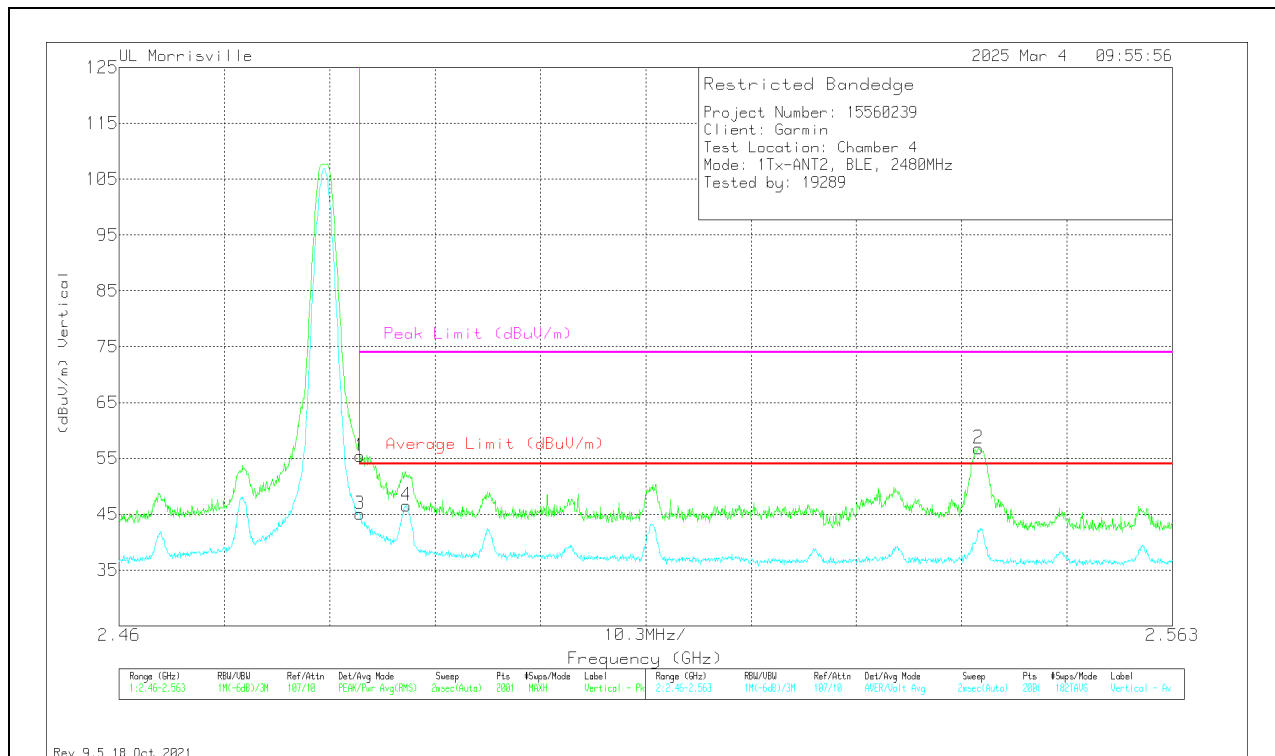
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48354	35.71	Pk	32.3	-22.8	0	45.21	-	-	74	-28.79	138	241	H
2	2.5441	37.97	Pk	32.5	-22.7	0	47.77	-	-	74	-26.23	138	241	H
3	* 2.48354	22.65	ADV	32.3	-22.8	5.21	37.36	54	-16.64	-	-	138	241	H
4	* 2.48807	24.1	ADV	32.3	-22.8	5.21	38.81	54	-15.19	-	-	138	241	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48354	45.92	Pk	32.3	-22.8	0	55.42	-	-	74	-18.58	151	131	V
2	2.54405	46.99	Pk	32.5	-22.7	0	56.79	-	-	74	-17.21	151	131	V
3	* 2.48354	30.35	ADV	32.3	-22.8	5.21	45.06	54	-8.94	-	-	151	131	V
4	* 2.48807	31.86	ADV	32.3	-22.8	5.21	46.57	54	-7.43	-	-	151	131	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

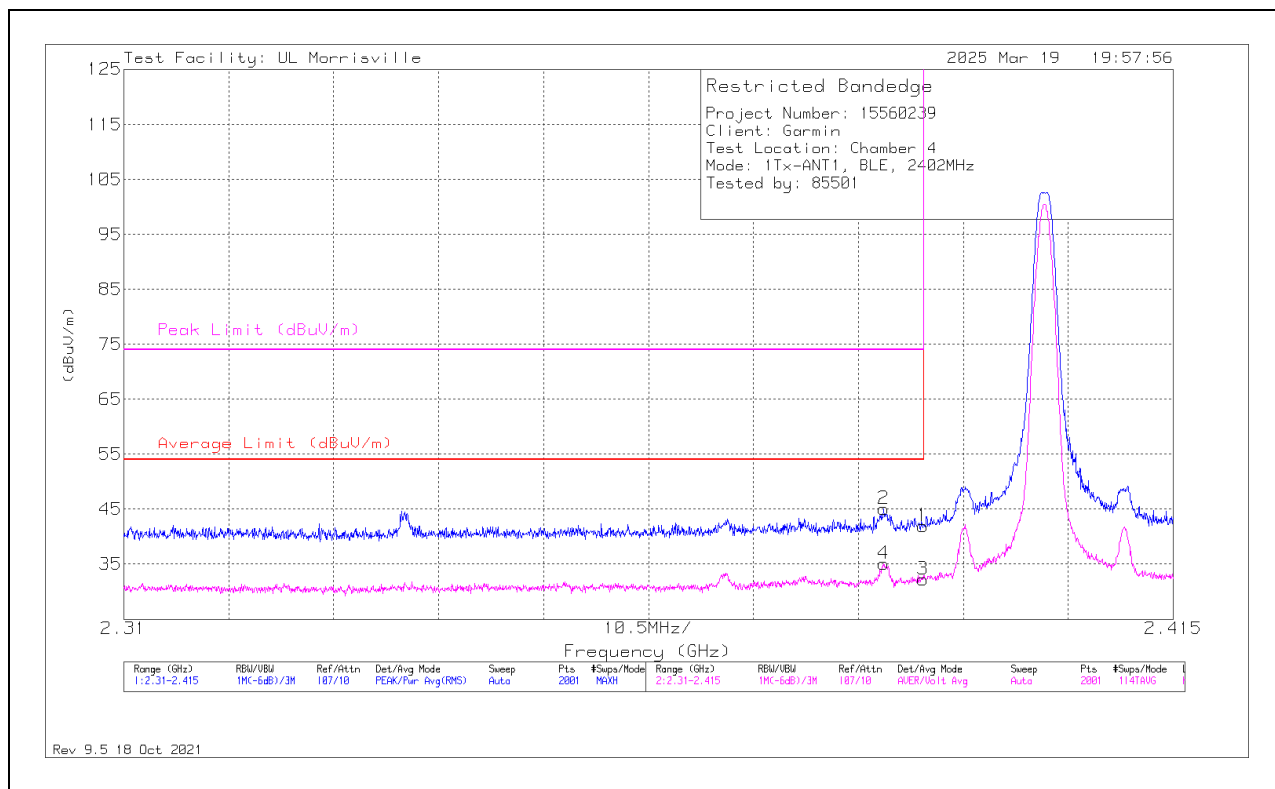
Pk - Peak detector

ADV - Linear Voltage Average

10.3.2. BLE (125Kbps)

Antenna 1 BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



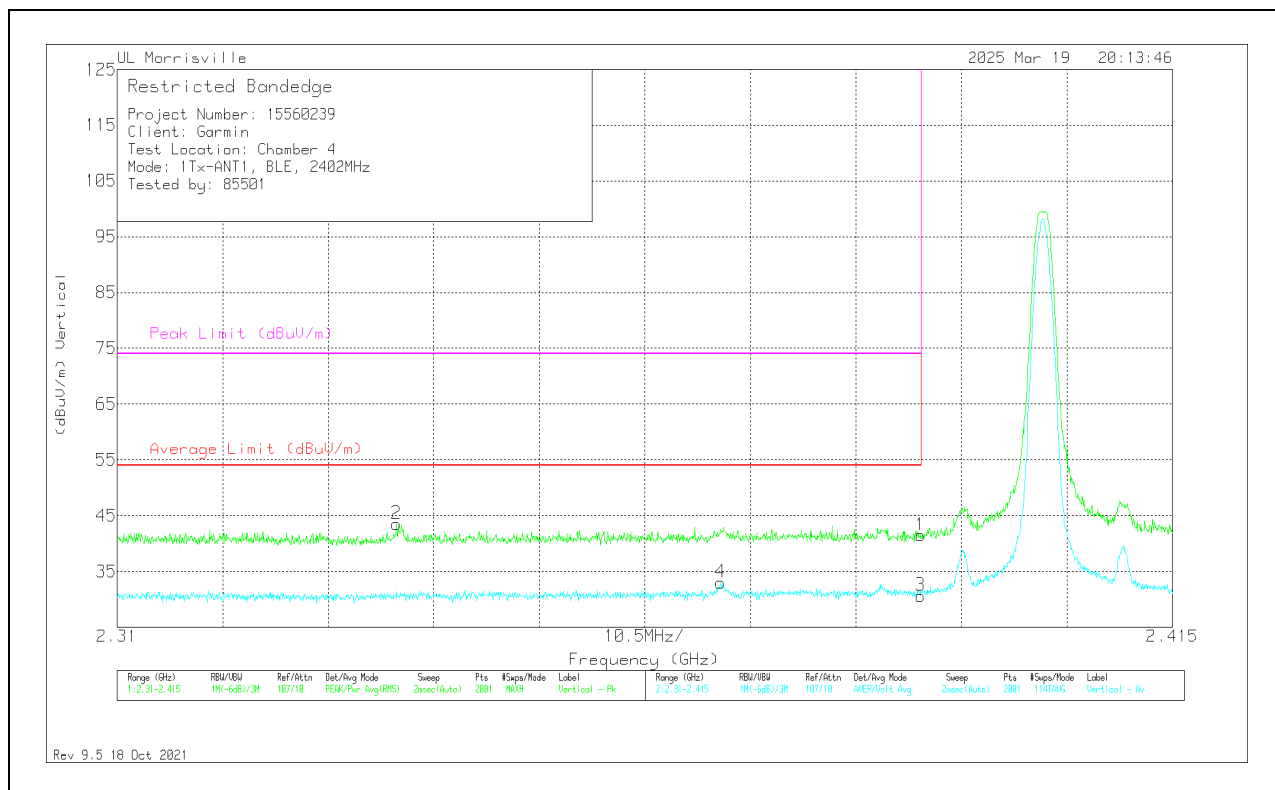
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38996	33.16	Pk	32	-23.2	0	41.96	-	-	74	-32.04	218	372	H
2	* 2.38602	36.31	Pk	32	-23.2	0	45.11	-	-	74	-28.89	218	372	H
3	* 2.38996	22.27	ADV	32	-23.2	1.2	32.27	54	-21.73	-	-	218	372	H
4	* 2.38602	25.07	ADV	32	-23.2	1.2	35.07	54	-18.93	-	-	218	372	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38996	32.66	Pk	32	-23.2	0	41.46	-	-	74	-32.54	323	233	V
2	* 2.33783	34.75	Pk	31.9	-23.1	0	43.55	-	-	74	-30.45	323	233	V
3	* 2.38996	20.63	ADV	32	-23.2	1.2	30.63	54	-23.37	-	-	323	233	V
4	* 2.37006	22.91	ADV	31.9	-23	1.2	33.01	54	-20.99	-	-	323	233	V

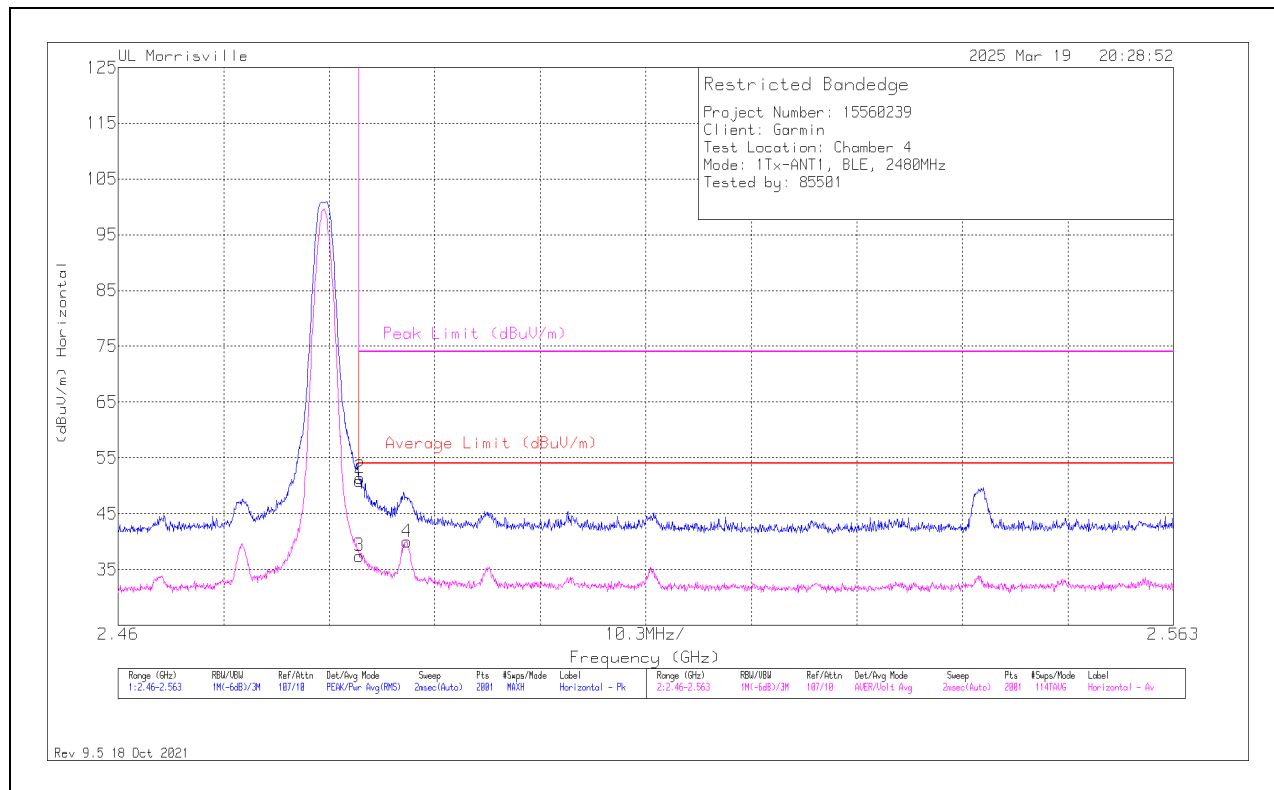
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



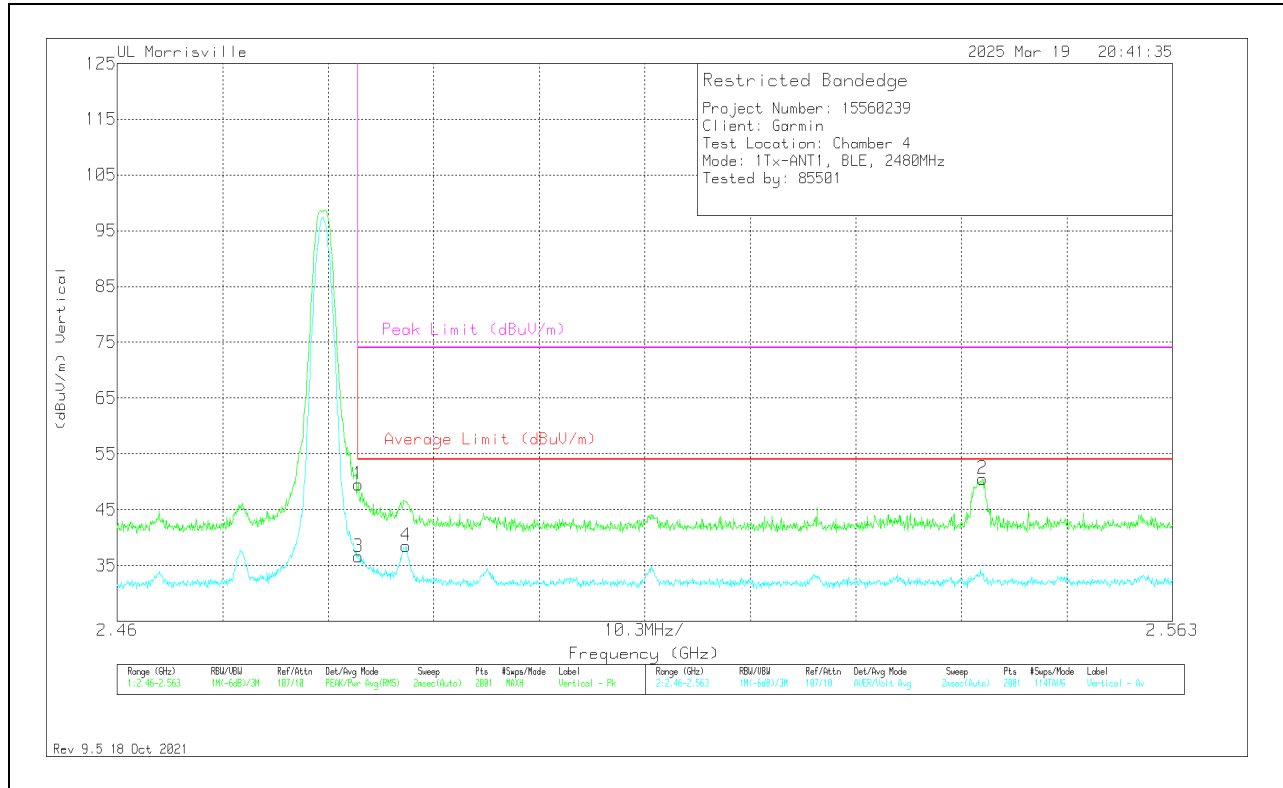
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48354	41.37	Pk	32.3	-22.8	0	50.87	-	-	74	-23.13	210	372	H
2	* 2.48359	41.93	Pk	32.3	-22.8	0	51.43	-	-	74	-22.57	210	372	H
3	* 2.48354	26.66	ADV	32.3	-22.8	1.2	37.36	54	-16.64	-	-	210	372	H
4	* 2.48817	29.25	ADV	32.3	-22.8	1.2	39.95	54	-14.05	-	-	210	372	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48354	40	Pk	32.3	-22.8	0	49.5	-	-	74	-24.5	94	359	V
2	2.54446	40.75	Pk	32.5	-22.7	0	50.55	-	-	74	-23.45	94	359	V
3	* 2.4354	25.87	ADV	32.3	-22.8	1.2	36.57	54	-17.43	-	-	94	359	V
4	* 2.48817	27.84	ADV	32.3	-22.8	1.2	38.54	54	-15.46	-	-	94	359	V

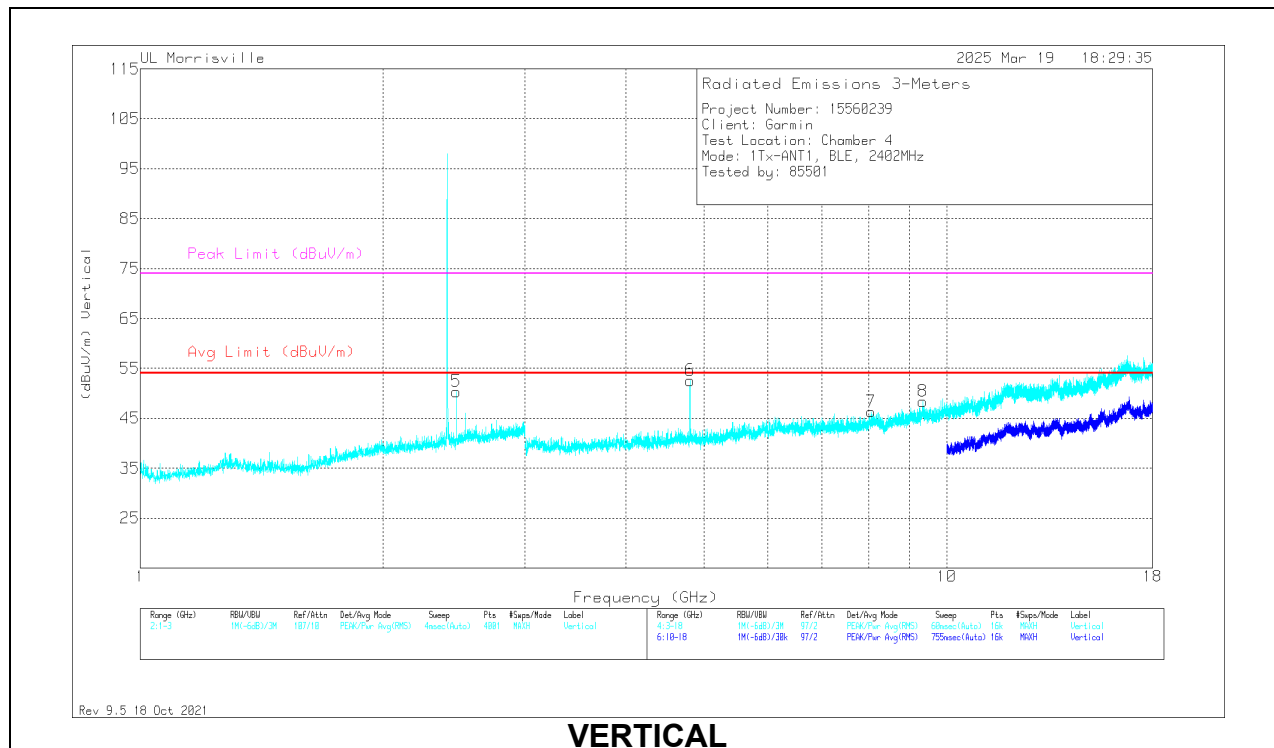
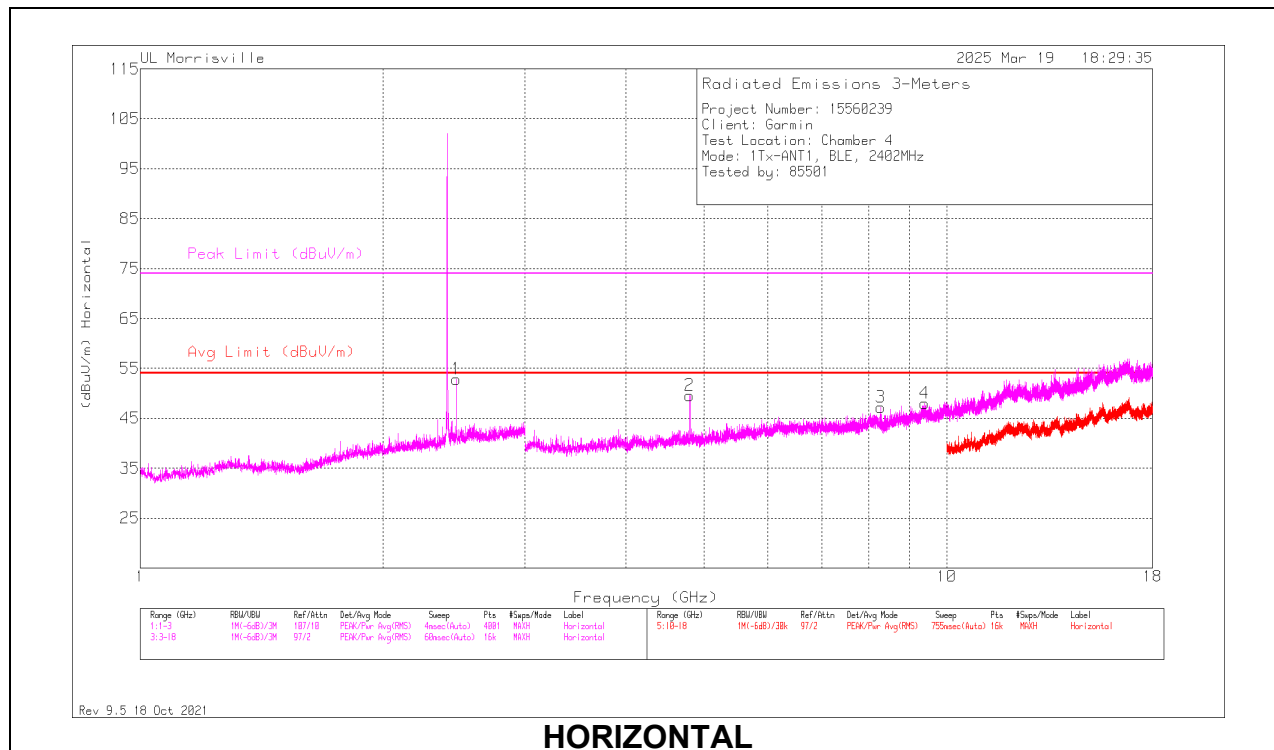
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.80472	49.61	PK2	34.1	-31.4	0	52.31	-	-	74	-21.69	150	102	H
	* 4.80404	41.95	ADV	34.1	-31.4	1.2	45.85	54	-8.15	-	-	150	102	H
3	* 8.27906	37.84	Pk	35.8	-26.4	0	47.24	54	-6.76	74	-26.76	0-360	100	H
4	* 9.39061	37.03	PK2	36.6	-24.8	0	48.83	-	-	74	-25.17	3	284	H
	* 9.39018	24.76	ADV	36.6	-24.8	1.2	37.76	54	-16.24	-	-	3	284	H
6	* 4.8035	46.23	PK2	34.1	-31.4	0	48.93	-	-	74	-25.07	310	146	V
	* 4.80654	29.04	ADV	34.1	-31.3	1.2	33.04	54	-20.96	-	-	310	146	V
7	* 8.0625	37.74	Pk	35.8	-27.2	0	46.34	54	-7.66	74	-27.66	0-360	200	V
8	* 9.34597	36.52	PK2	36.5	-24.3	0	48.72	-	-	74	-25.28	334	389	V
	* 9.34221	23.83	ADV	36.5	-24.2	1.2	37.33	54	-16.67	-	-	334	389	V
1	2.466	43.44	Pk	32.3	-22.9	0	52.84	-	-	-	-	0-360	100	H
5	2.466	40.93	Pk	32.3	-22.9	0	50.33	-	-	-	-	0-360	200	V

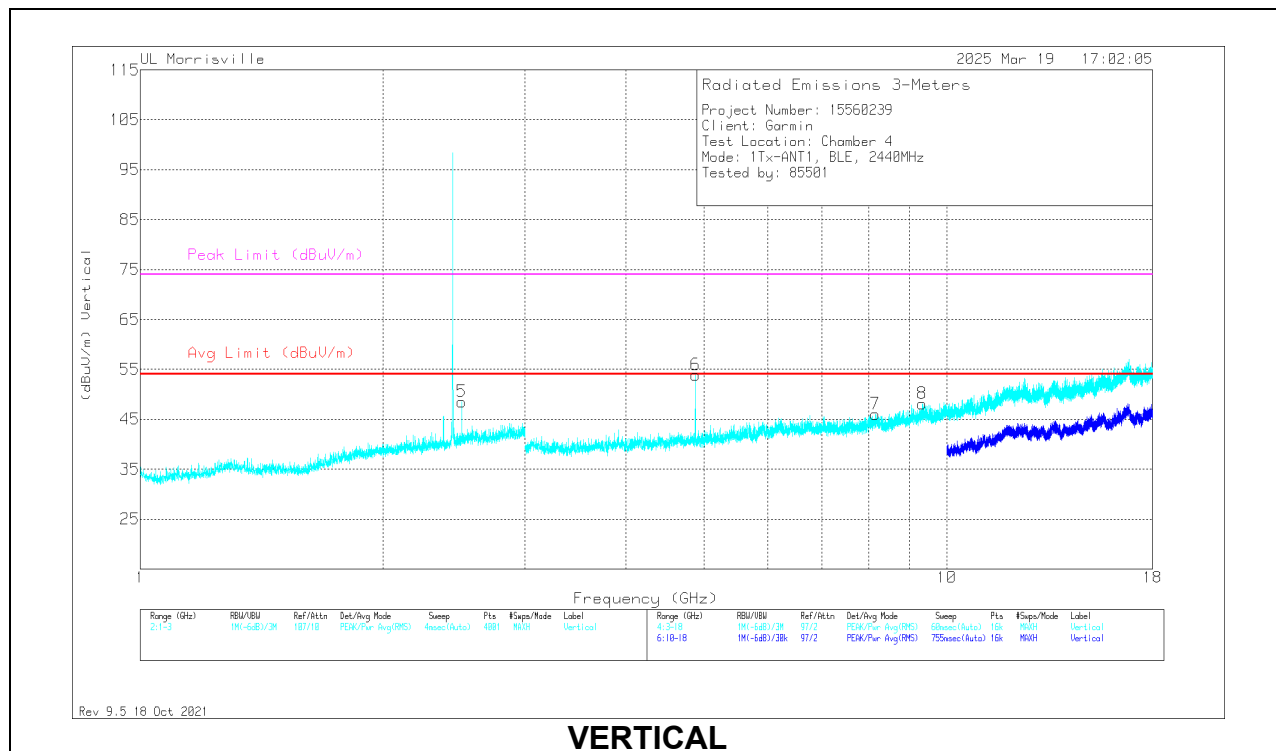
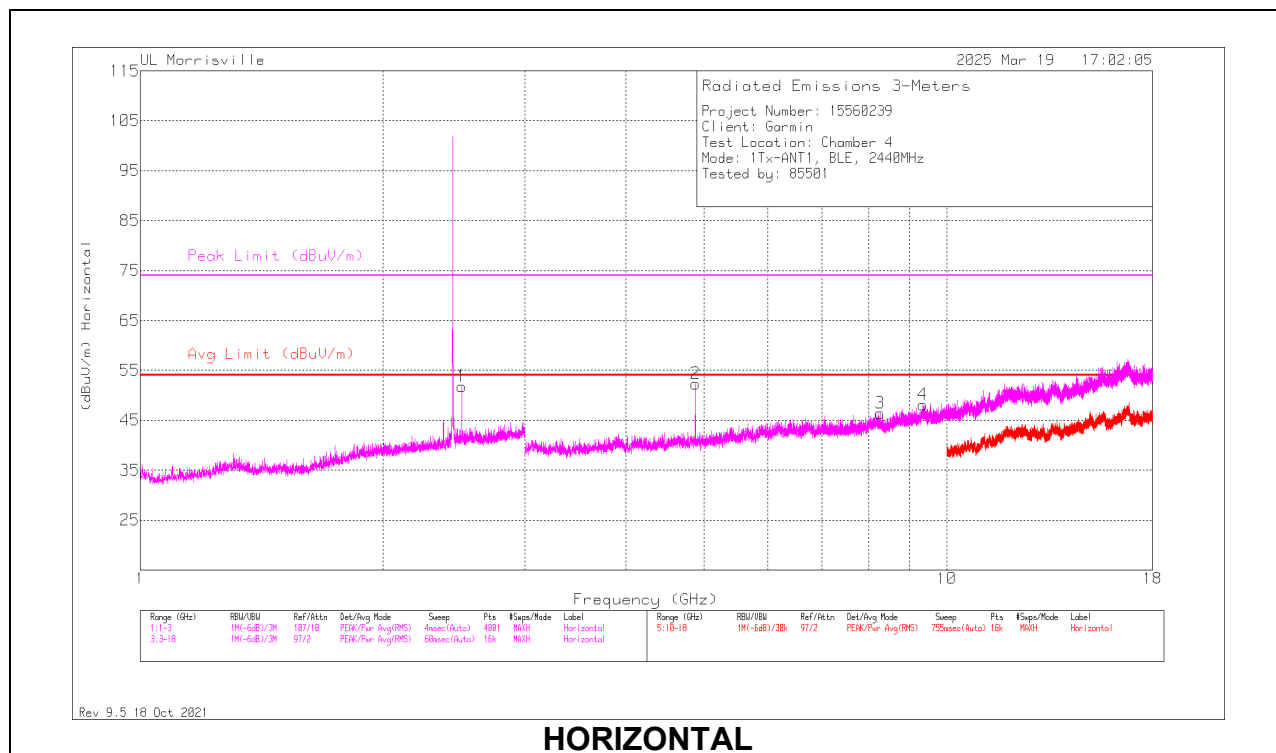
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

MID CHANNEL RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.5045	42.2	Pk	32.3	-22.7	0	51.8	-	-	-	-	0-360	100	H
5	2.504	38.87	Pk	32.3	-22.7	0	48.47	-	-	-	-	0-360	200	V
2	* 4.8806	51.24	PK2	34	-31	0	54.24	-	-	74	-19.76	204	102	H
	* 4.88039	43.94	ADV	34	-31	1.2	48.14	54	-5.86	-	-	204	102	H
3	* 8.27531	36.99	Pk	35.8	-26.4	0	46.39	54	-7.61	74	-27.61	0-360	100	H
4	* 9.33304	36.28	PK2	36.5	-24.1	0	48.68	-	-	74	-25.32	358	115	H
	* 9.33611	24.23	ADV	36.5	-24.2	1.2	37.73	54	-16.27	-	-	358	115	H
6	* 4.8807	52.37	PK2	34	-31	0	55.37	-	-	74	-18.63	208	197	V
	* 4.88033	45.63	ADV	34	-31	1.2	49.83	54	-4.17	-	-	208	197	V
7	* 8.15344	37.01	Pk	35.8	-26.8	0	46.01	54	-7.99	74	-27.99	0-360	200	V
8	* 9.32563	36.36	PK2	36.5	-24.3	0	48.56	-	-	74	-25.44	48	365	V
	* 9.32371	23.98	ADV	36.4	-24.4	1.2	37.18	54	-16.82	-	-	48	365	V

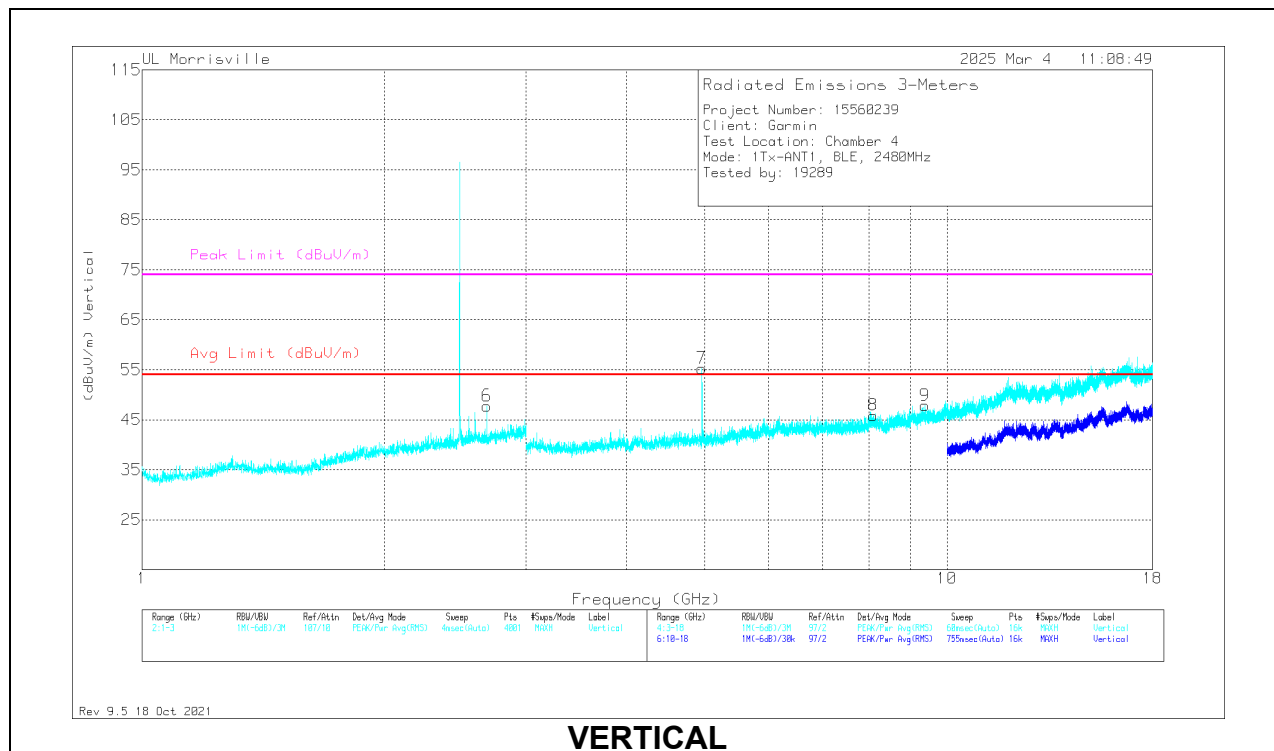
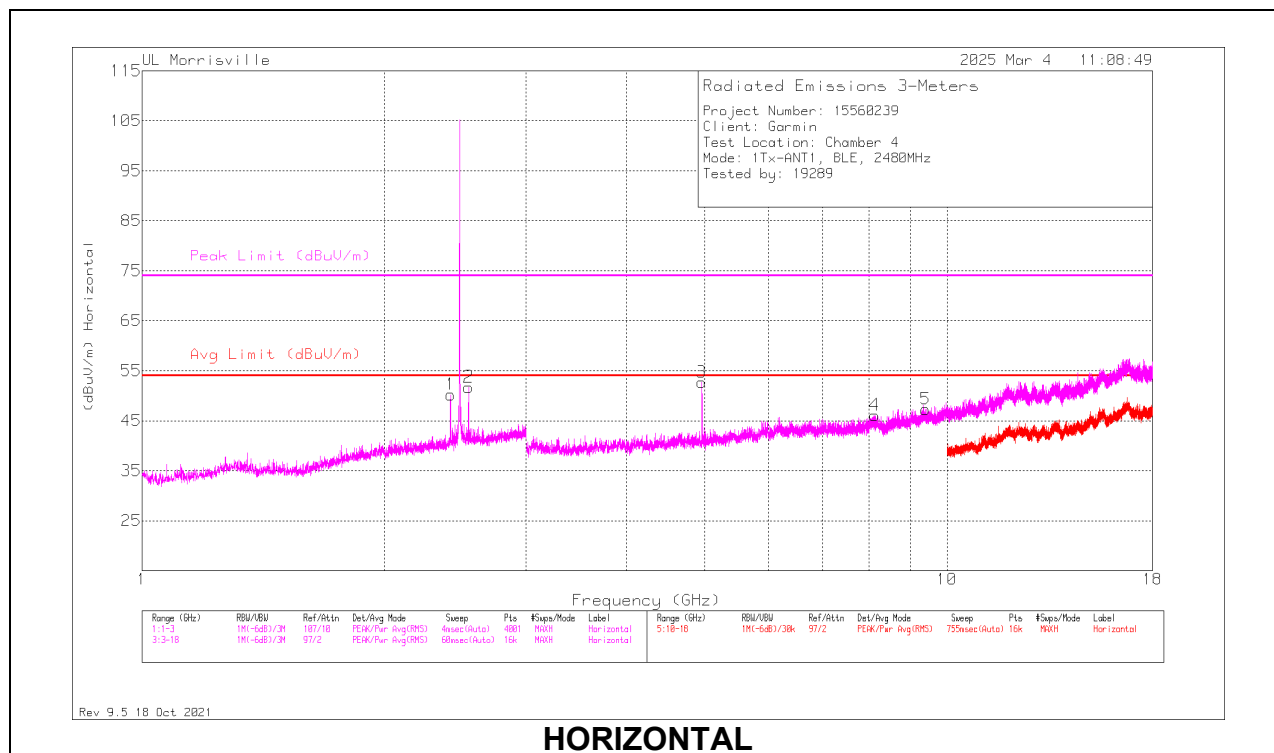
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

HIGH CHANNEL RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	* 2.681	37.94	Pk	32.3	-22.5	0	47.74	54	-6.26	74	-26.26	0-360	200	V
3	* 4.95966	49.86	PK2	33.9	-30.8	0	52.96	-	-	74	-21.04	248	101	H
	* 4.95988	42.49	ADV	33.9	-30.8	1.2	46.79	54	-7.21	-	-	248	101	H
4	* 8.13094	37.19	Pk	35.8	-26.9	0	46.09	54	-7.91	74	-27.91	0-360	100	H
5	* 9.40313	35.89	Pk	36.6	-25.2	0	47.29	54	-6.71	74	-26.71	0-360	100	H
7	* 4.9606	53.88	PK2	33.9	-30.7	0	57.08	-	-	74	-16.92	172	250	V
	* 4.95972	47.95	ADV	33.9	-30.8	1.2	52.25	54	-1.75	-	-	172	250	V
8	* 8.09531	36.98	Pk	35.8	-26.9	0	45.88	54	-8.12	74	-28.12	0-360	200	V
9	* 9.39	36.04	Pk	36.6	-24.8	0	47.84	54	-6.16	74	-26.16	0-360	200	V
1	2.4165	41.42	Pk	32	-23.2	0	50.22	-	-	-	-	0-360	100	H
2	2.544	41.89	Pk	32.5	-22.7	0	51.69	-	-	-	-	0-360	100	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

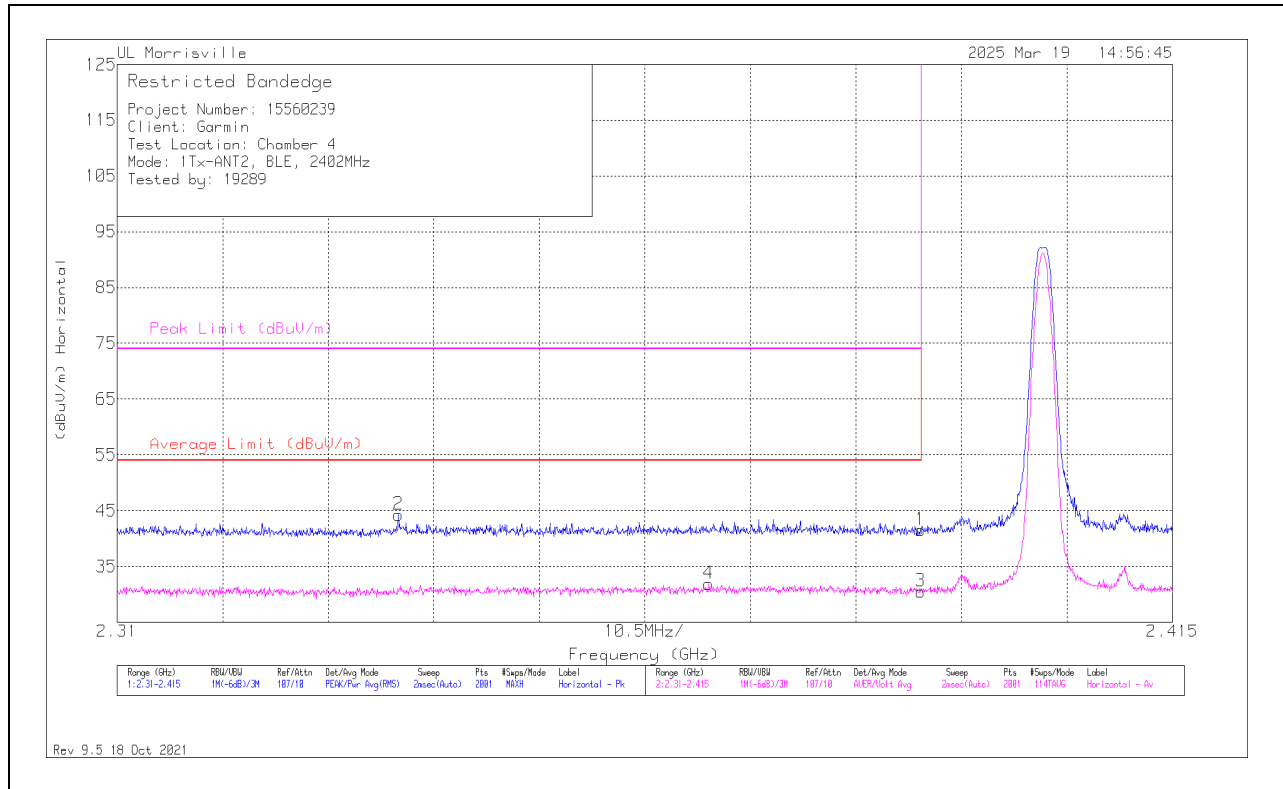
PK2 - Maximum Peak

ADV - Linear Voltage Average

Antenna 2

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



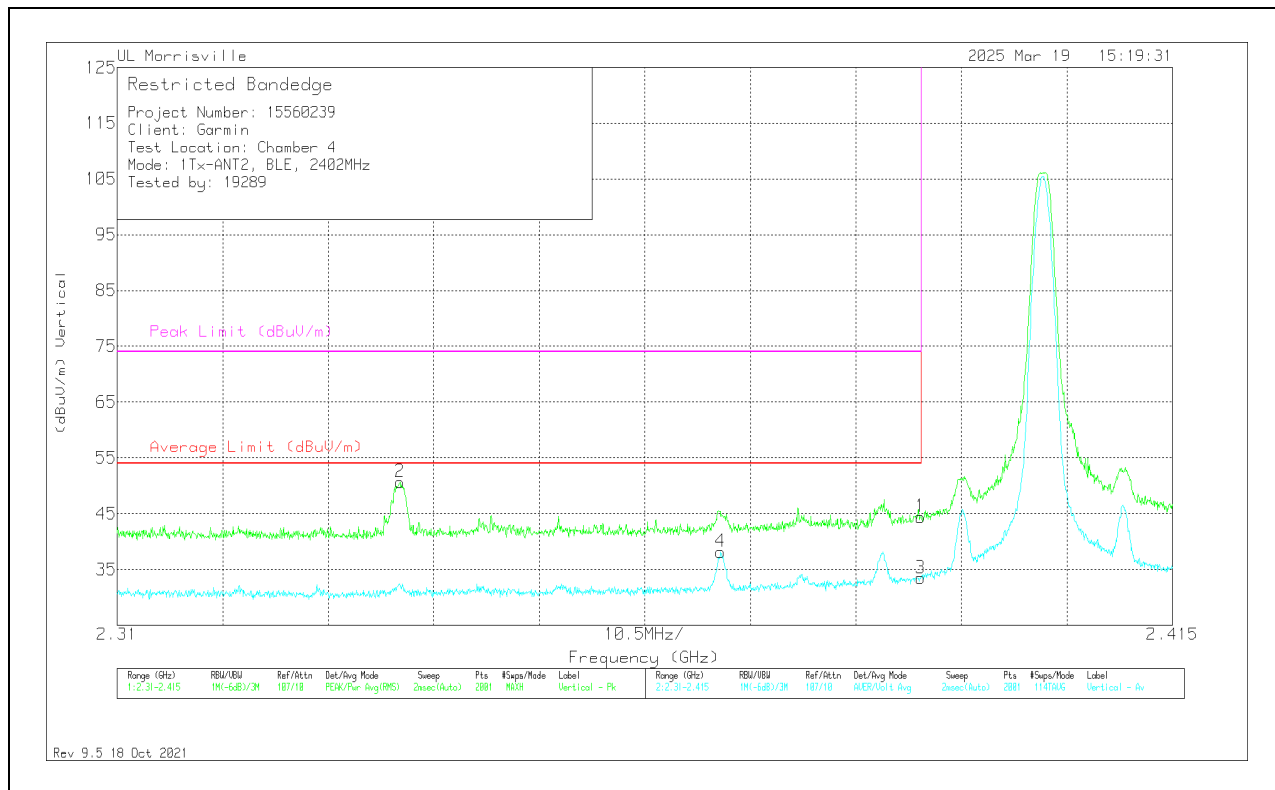
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38996	32.72	Pk	32	-23.2	0	41.52	-	-	74	-32.48	66	136	H
2	* 2.33798	35.45	Pk	31.9	-23.1	0	44.25	-	-	74	-29.75	66	136	H
3	* 2.38996	20.5	ADV	32	-23.2	1.2	30.5	54	-23.5	-	-	66	136	H
4	* 2.36885	21.81	ADV	31.9	-23	1.2	31.91	54	-22.09	-	-	66	136	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38996	35.58	Pk	32	-23.2	0	44.38	-	-	74	-29.62	99	127	V
2	* 2.33814	41.85	Pk	31.9	-23.1	0	50.65	-	-	74	-23.35	99	127	V
3	* 2.38996	23.44	ADV	32	-23.2	1.2	33.44	54	-20.56	-	-	99	127	V
4	* 2.37006	28.01	ADV	31.9	-23	1.2	38.11	54	-15.89	-	-	99	127	V

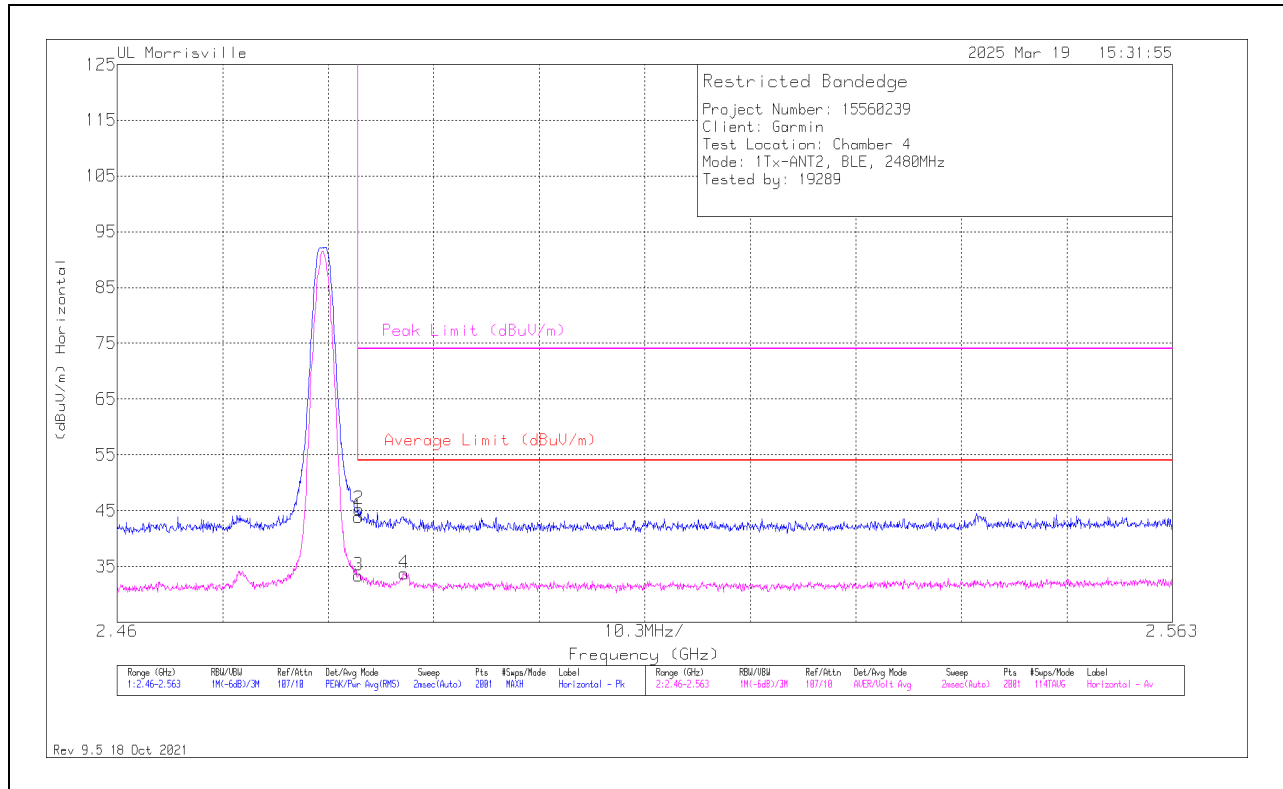
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



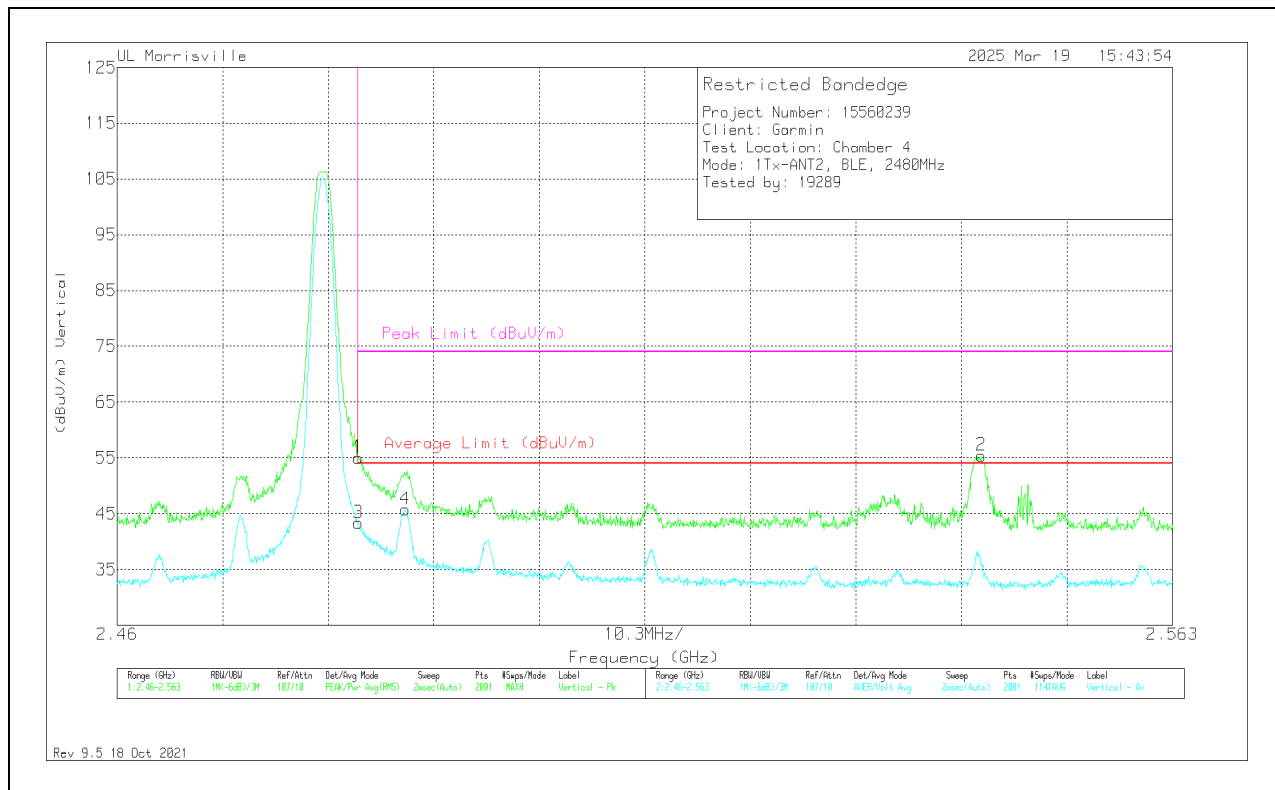
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48354	34.33	Pk	32.3	-22.8	0	43.83	-	-	74	-30.17	125	145	H
2	* 2.48359	35.75	Pk	32.3	-22.8	0	45.25	-	-	74	-28.75	125	145	H
3	* 2.48354	22.63	ADV	32.3	-22.8	1.2	33.33	54	-20.67	-	-	125	145	H
4	* 2.48802	23.09	ADV	32.3	-22.8	1.2	33.79	54	-20.21	-	-	125	145	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48354	45.49	Pk	32.3	-22.8	0	54.99	-	-	74	-19.01	97	142	V
3	* 2.48354	32.63	ADV	32.3	-22.8	1.2	43.33	54	-10.67	-	-	97	142	V
4	* 2.48812	35.02	ADV	32.3	-22.8	1.2	45.72	54	-8.28	-	-	97	142	V
2	2.54436	45.56	Pk	32.5	-22.7	0	55.36	-	-	74	-18.64	97	142	V

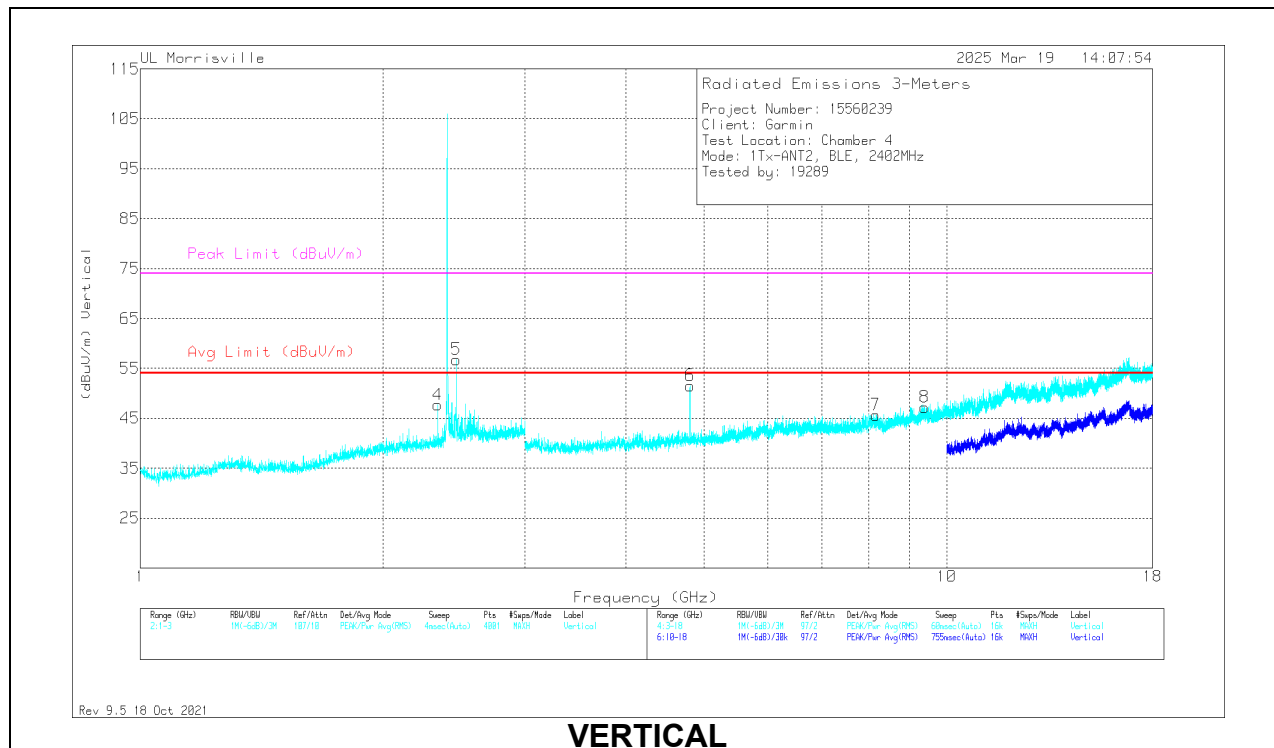
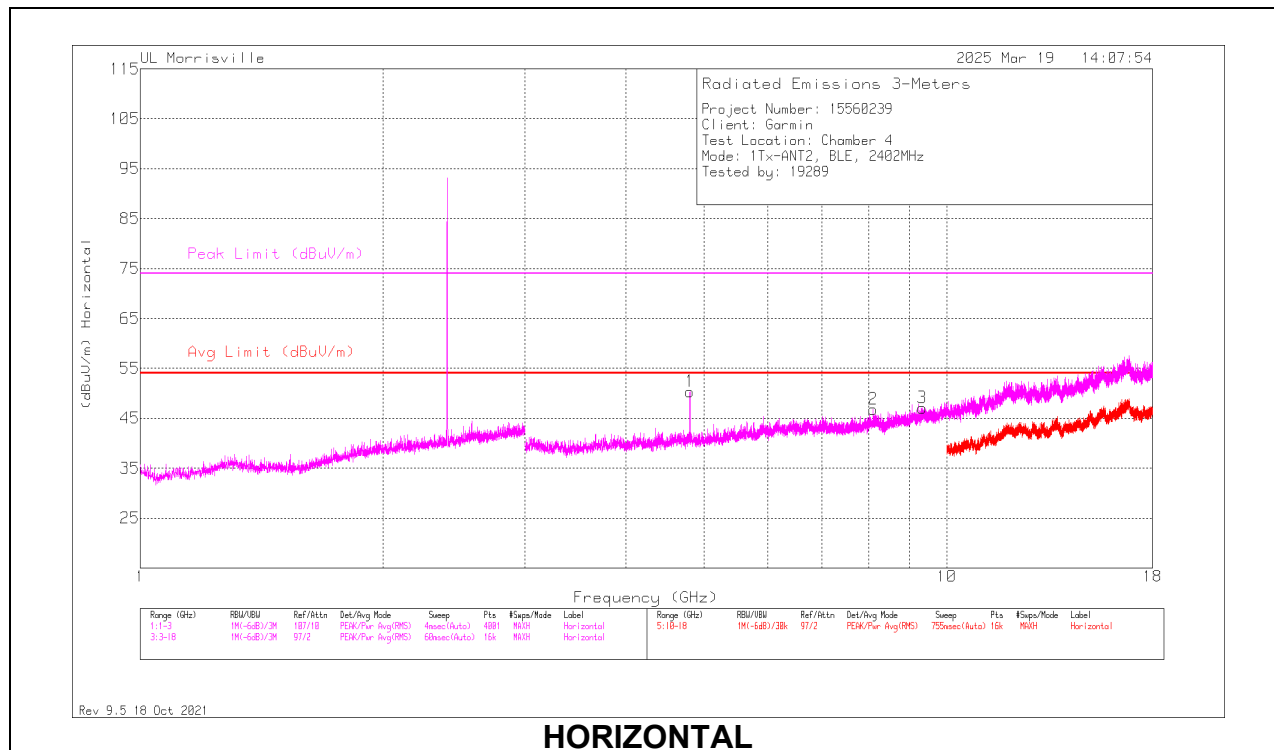
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.3385	38.86	Pk	31.9	-23.1	0	47.66	54	-6.34	74	-26.34	0-360	200	V
1	* 4.80466	49.73	PK2	34.1	-31.4	0	52.43	-	-	74	-21.57	206	107	H
	* 4.80396	42.78	ADV	34.1	-31.4	1.2	46.68	54	-7.32	-	-	206	107	H
2	* 8.10844	38.02	Pk	35.8	-27	0	46.82	54	-7.18	74	-27.18	0-360	100	H
3	* 9.31969	35.32	Pk	36.4	-24.6	0	47.12	54	-6.88	74	-26.88	0-360	100	H
6	* 4.80462	52.53	PK2	34.1	-31.4	0	55.23	-	-	74	-18.77	213	133	V
	* 4.80434	46.12	ADV	34.1	-31.4	1.2	50.02	54	-3.98	-	-	213	133	V
7	* 8.16469	36.51	Pk	35.8	-26.7	0	45.61	54	-8.39	74	-28.39	0-360	200	V
8	* 9.39656	35.35	Pk	36.6	-24.8	0	47.15	54	-6.85	74	-26.85	0-360	200	V
5	2.4665	47.35	Pk	32.3	-22.9	0	56.75	-	-	-	-	0-360	200	V

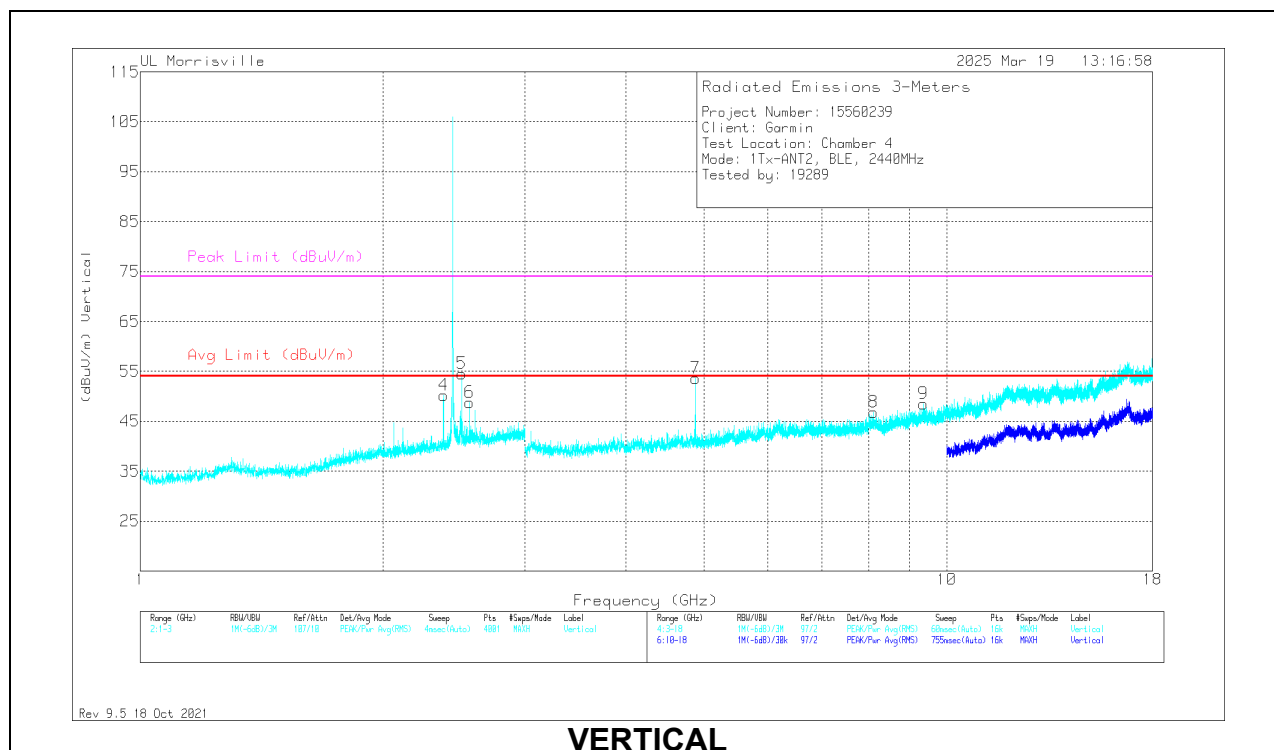
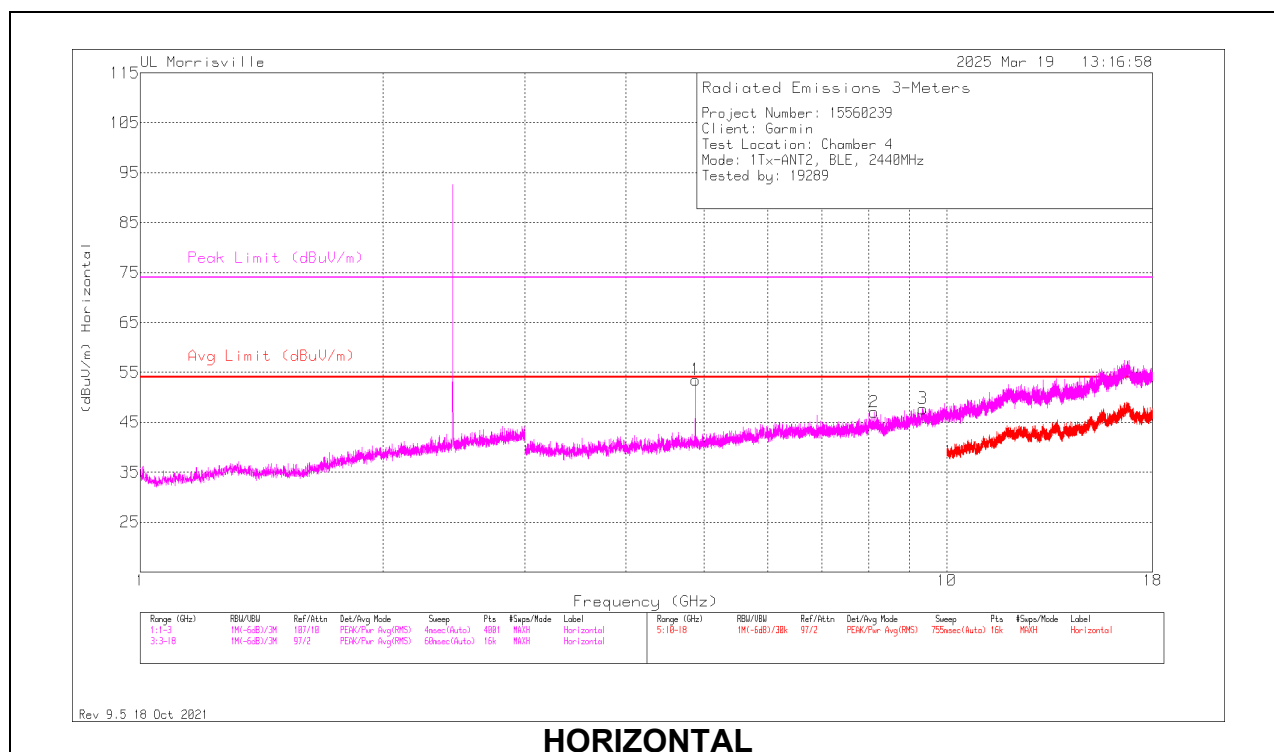
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

MID CHANNEL RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.37605	42.53	PK2	32	-22.9	0	51.63	-	-	74	-22.37	118	106	V
	* 2.37613	24.39	ADV	32	-22.9	1.2	34.69	54	-19.31	-	-	118	106	V
1	* 4.87967	52.06	PK2	34	-31	0	55.06	-	-	74	-18.94	206	101	H
	* 4.88047	45.57	ADV	34	-31	1.2	49.77	54	-4.23	-	-	206	101	H
2	* 8.13281	38.11	Pk	35.8	-26.9	0	47.01	54	-6.99	74	-26.99	0-360	100	H
3	* 9.33656	35.41	Pk	36.5	-24.2	0	47.71	54	-6.29	74	-26.29	0-360	100	H
7	* 4.88062	52.36	PK2	34	-31	0	55.36	-	-	74	-18.64	225	154	V
	* 4.87981	45.77	ADV	34	-31	1.2	49.97	54	-4.03	-	-	225	154	V
8	* 8.11875	37.72	Pk	35.8	-26.7	0	46.82	54	-7.18	74	-27.18	0-360	200	V
9	* 9.35731	36.73	PK2	36.5	-24.5	0	48.73	-	-	74	-25.27	227	301	V
	* 9.35865	24.42	ADV	36.5	-24.5	1.2	37.62	54	-16.38	-	-	227	301	V
5	2.5045	44.94	Pk	32.3	-22.7	0	54.54	-	-	-	-	0-360	200	V
6	2.5615	38.87	Pk	32.5	-22.6	0	48.77	-	-	-	-	0-360	200	V

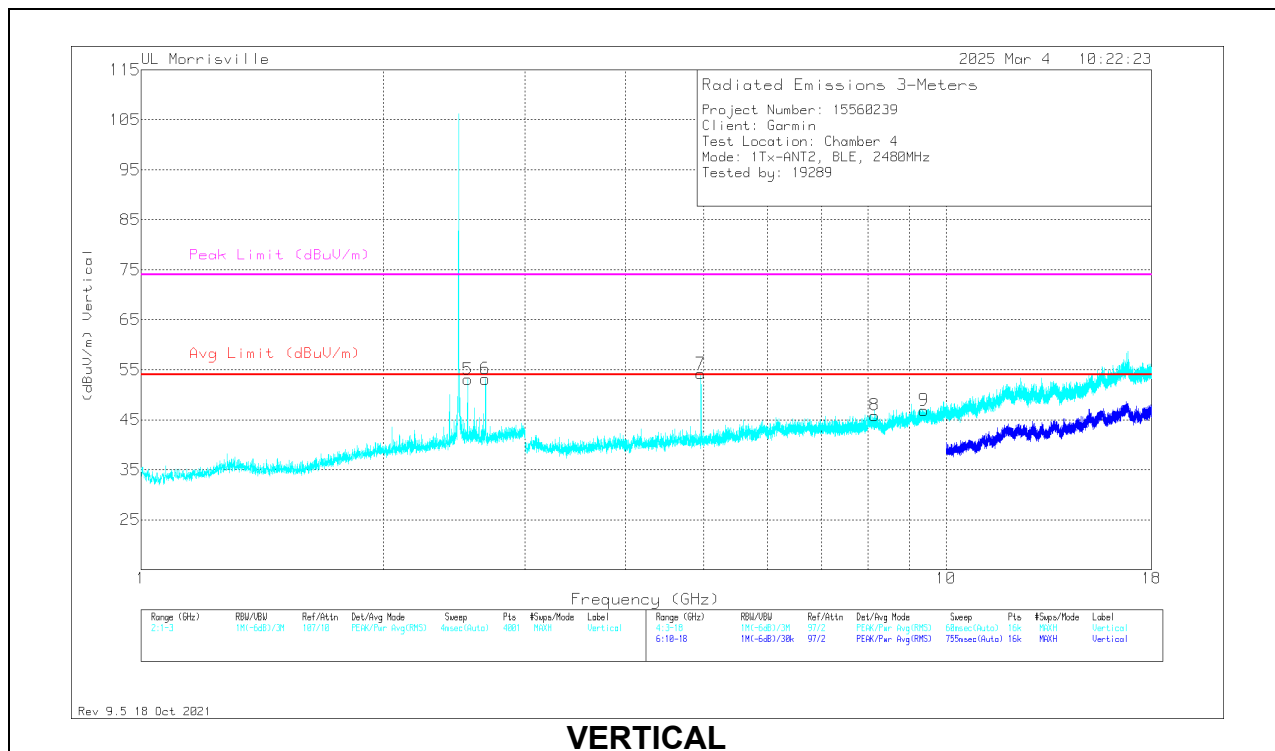
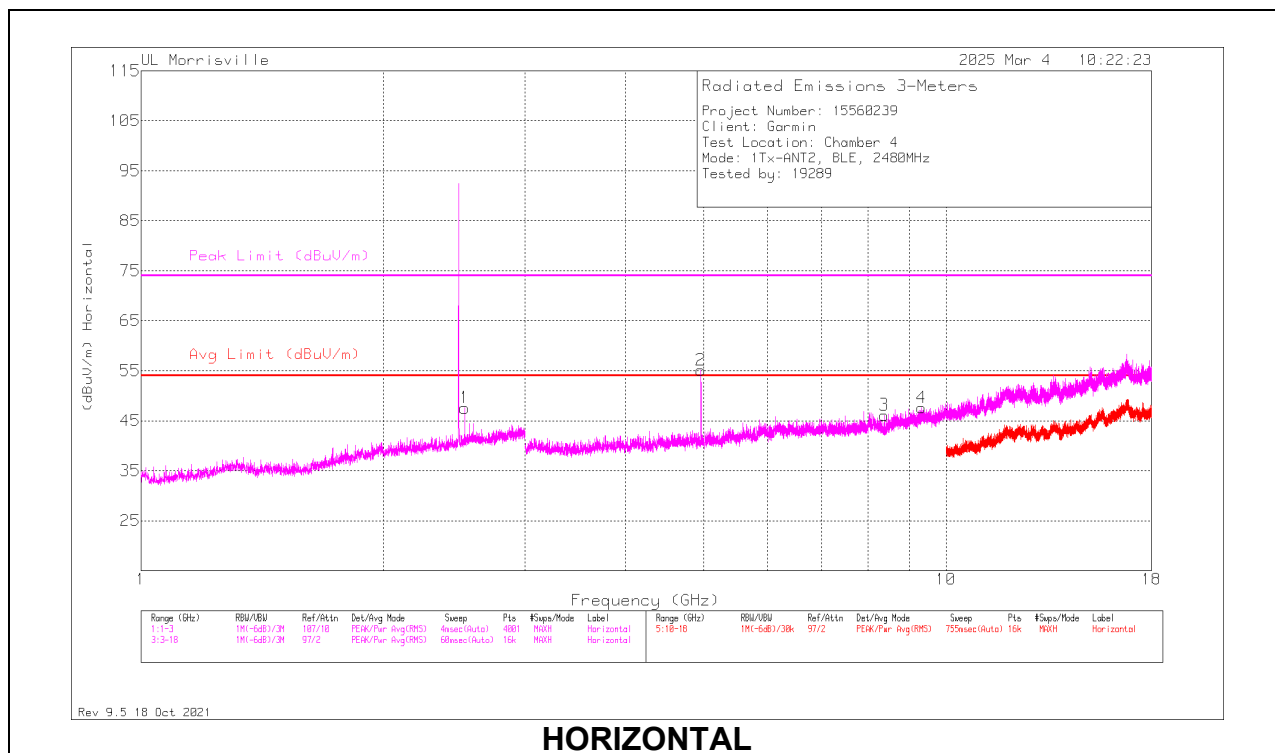
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

HIGH CHANNEL RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	* 2.67946	38.47	PK2	32.3	-22.5	0	48.27	-	-	74	-25.73	33	235	V
	* 2.67572	21.78	ADV	32.3	-22.4	1.2	32.88	54	-21.12	-	-	33	235	V
2	* 4.96059	53.47	PK2	33.9	-30.7	0	56.67	-	-	74	-17.33	225	108	H
	* 4.96049	48.25	ADV	33.9	-30.7	1.2	52.65	54	-1.35	-	-	225	108	H
3	* 8.37844	36.72	Pk	35.8	-26.4	0	46.12	54	-7.88	74	-27.88	0-360	100	H
4	* 9.32906	35.28	Pk	36.5	-24.2	0	47.58	54	-6.42	74	-26.42	0-360	100	H
7	* 4.96063	52.64	PK2	33.9	-30.7	0	55.84	-	-	74	-18.16	216	160	V
	* 4.95984	46.01	ADV	33.9	-30.8	1.2	50.31	54	-3.69	-	-	216	160	V
8	* 8.14969	37.08	Pk	35.8	-27	0	45.88	54	-8.12	74	-28.12	0-360	200	V
9	* 9.3825	35.18	Pk	36.6	-24.9	0	46.88	54	-7.12	74	-27.12	0-360	200	V
1	2.5225	38.05	Pk	32.4	-22.9	0	47.55	-	-	-	-	0-360	100	H
5	2.5445	43.26	Pk	32.5	-22.7	0	53.06	-	-	-	-	0-360	200	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

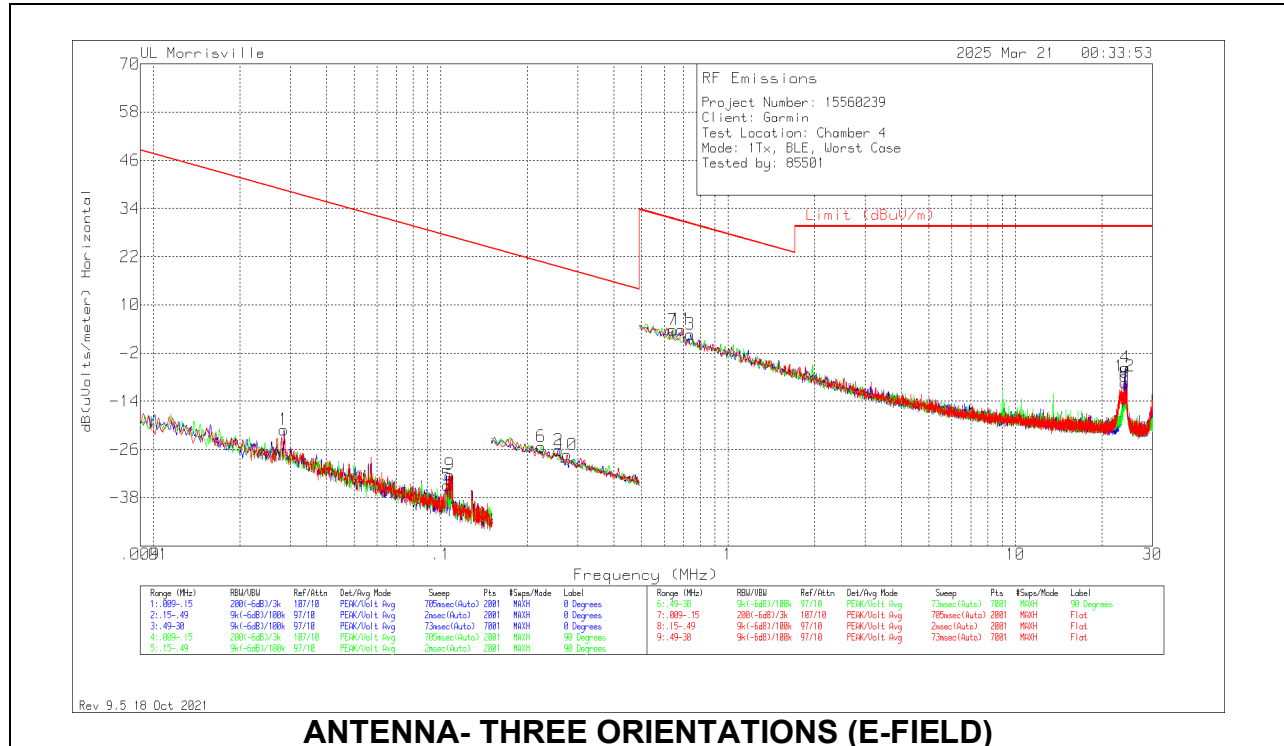
PK2 - Maximum Peak

ADV - Linear Voltage Average

10.4. WORST CASE BELOW 30MHZ

Note: All measurements were made at a test distance of 3 m. The measured data was extrapolated from the test distance (3m) to the specification distance (300 m from 9-490 kHz and 30 m from 490 kHz – 30 MHz) to clearly show the relative levels of fundamental and spurious emissions and demonstrate compliance with the requirement that the level of any spurious emissions be below the level of the intentionally transmitted signal. The extrapolation factor for the limits were 40*Log (test distance / specification distance).

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION)

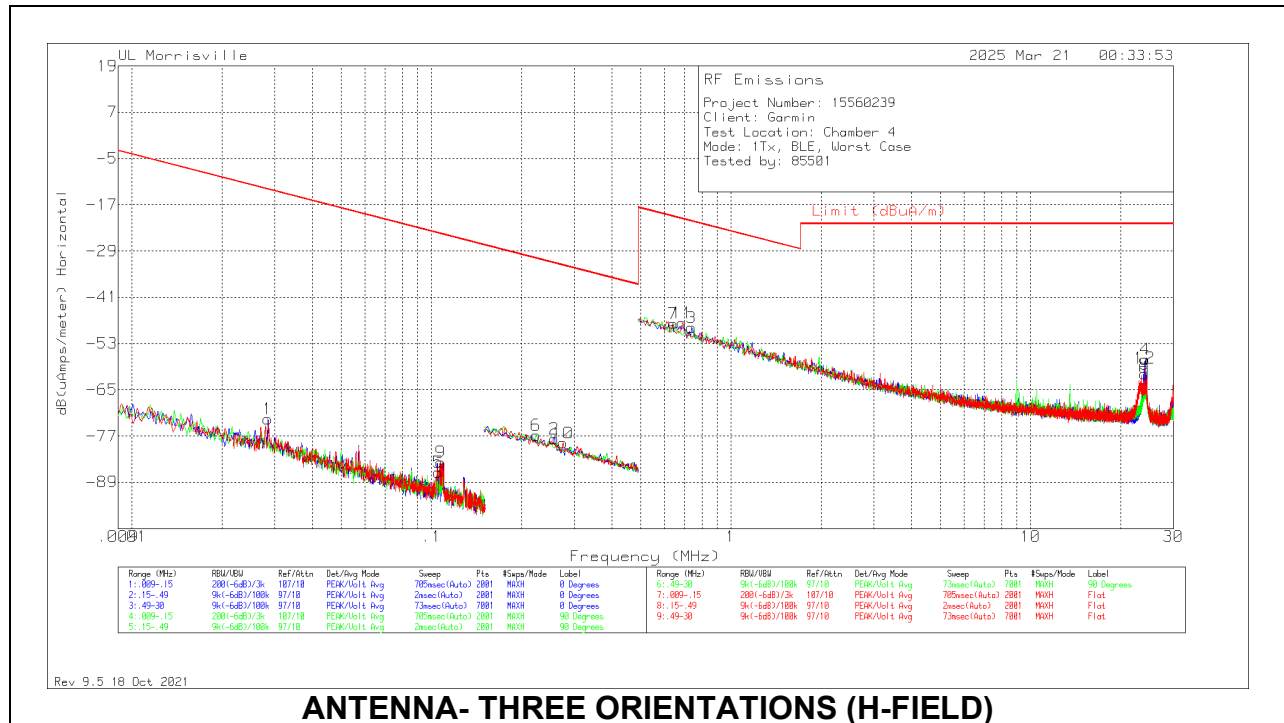


ANTENNA- THREE ORIENTATIONS (E-FIELD)

Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	65682 (dBuV/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uVolts/meter)	QP/AV Limit (dBuV/m)	PK Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
1	.02845	45.63	Pk	13.2	.1	-80	-21.07	38.52	58.52	-59.59	0-360	0 degs
5	.10556	34.77	Pk	10.2	.1	-80	-34.93	27.13	-	-62.06	0-360	90 degs
9	.10755	34.4	Pk	10.2	.1	-80	-32.3	26.97	-	-59.27	0-360	Flat
6	.22378	44.49	Pk	10.1	.1	-80	-25.31	20.61	40.61	-45.92	0-360	90 degs
2	.25744	43.59	Pk	10.1	.1	-80	-26.21	19.39	39.39	-45.6	0-360	0 degs
10	.27512	42.46	Pk	10.1	.1	-80	-27.34	18.81	38.81	-46.15	0-360	Flat
7	.64178	33.42	Pk	10.2	.1	-40	3.72	31.46	-	-27.74	0-360	90 degs
11	.68815	33.36	Pk	10.2	.2	-40	3.76	30.85	-	-27.09	0-360	Flat
3	.73874	32.2	Pk	10.2	.2	-40	2.6	30.23	-	-27.63	0-360	0 degs
8	24.00263	20.55	Pk	9.4	.6	-40	-9.45	29.54	-	-38.99	0-360	90 degs
12	24.00263	22.18	Pk	9.4	.6	-40	-7.82	29.54	-	-37.36	0-360	Flat
4	24.16706	24.37	Pk	9.4	.6	-40	-5.63	29.54	-	-35.17	0-360	0 degs

Pk - Peak detector



ANTENNA- THREE ORIENTATIONS (H-FIELD)

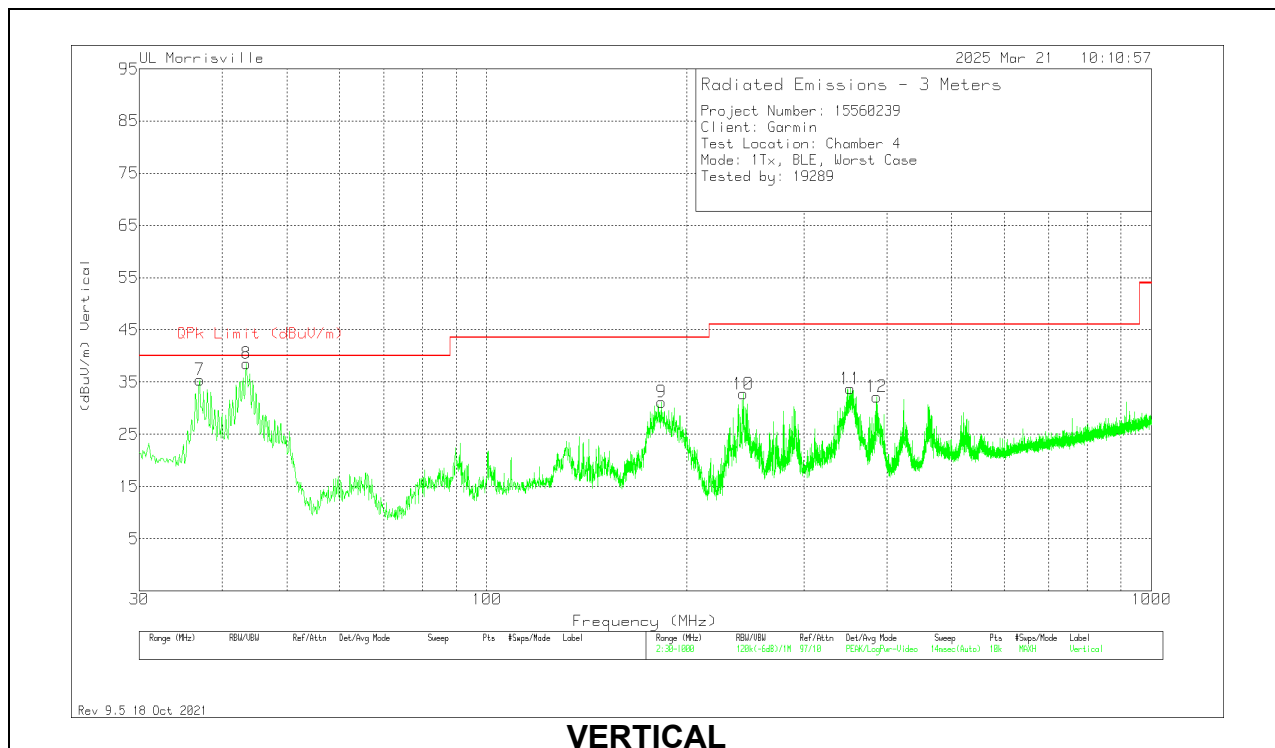
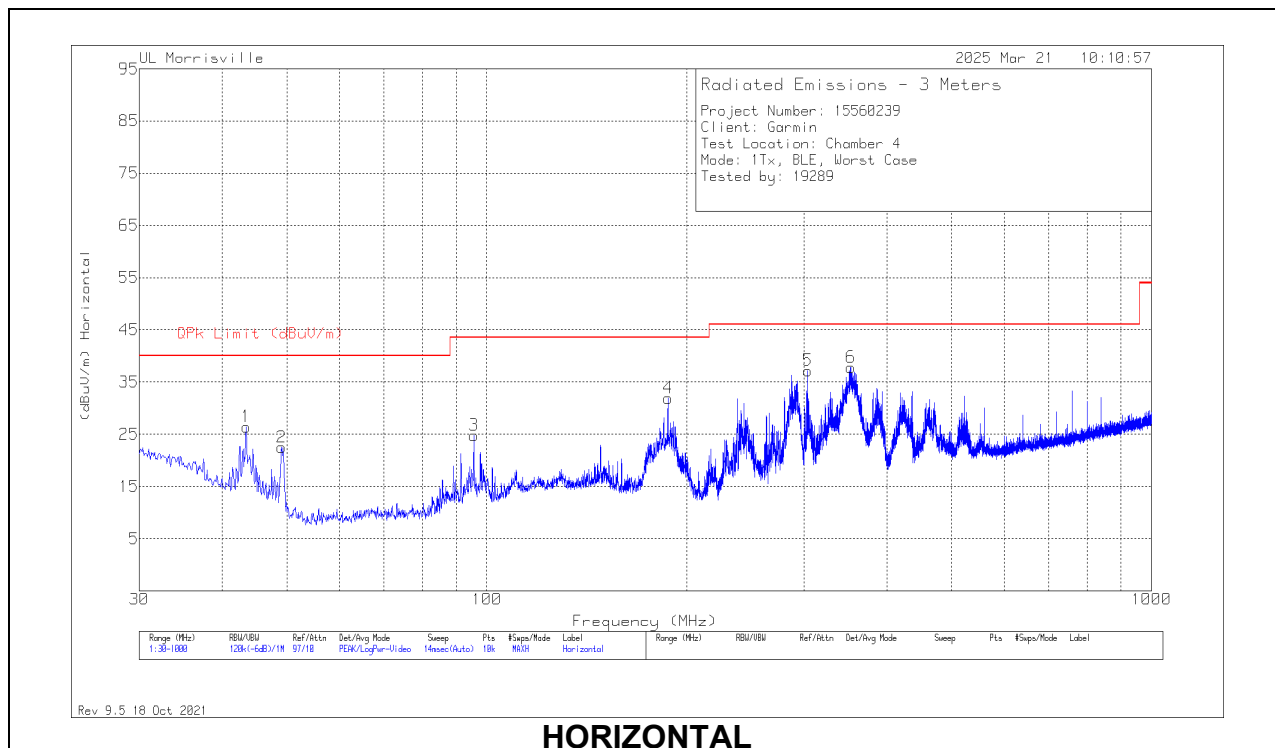
Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	65682 (dBuV/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uAmps/meter)	QP/AV Limit (dBuA/m)	PK Limit (dBuA/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
1	.02845	45.63	Pk	-38.3	.1	-80	-72.57	-12.98	7.02	-59.59	0-360	0 degs
5	.10556	34.77	Pk	-41.3	.1	-80	-86.43	-24.37	-	-62.06	0-360	90 degs
9	.10755	37.4	Pk	-41.3	.1	-80	-83.8	-24.53	-	-59.27	0-360	Flat
6	.22378	44.49	Pk	-41.4	.1	-80	-76.81	-30.89	-10.89	-45.92	0-360	90 degs
2	.25744	43.59	Pk	-41.4	.1	-80	-77.71	-32.11	-12.11	-45.6	0-360	0 degs
10	.27512	42.46	Pk	-41.4	.1	-80	-78.84	-32.69	-12.69	-46.15	0-360	Flat
7	.64178	33.42	Pk	-41.3	.1	-40	-47.78	-20.04	-	-27.74	0-360	90 degs
11	.68815	33.36	Pk	-41.3	.2	-40	-47.74	-20.65	-	-27.09	0-360	Flat
3	.73874	32.2	Pk	-41.3	.2	-40	-48.9	-21.27	-	-27.63	0-360	0 degs
8	24.00263	20.55	Pk	-42.1	.6	-40	-60.95	-21.96	-	-38.99	0-360	90 degs
12	24.00263	22.18	Pk	-42.1	.6	-40	-59.32	-21.96	-	-37.36	0-360	Flat
4	24.16706	24.37	Pk	-42.1	.6	-40	-57.13	-21.96	-	-35.17	0-360	0 degs

Pk - Peak detector

10.5. WORST CASE BELOW 1 GHZ

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



Below 1GHz Data

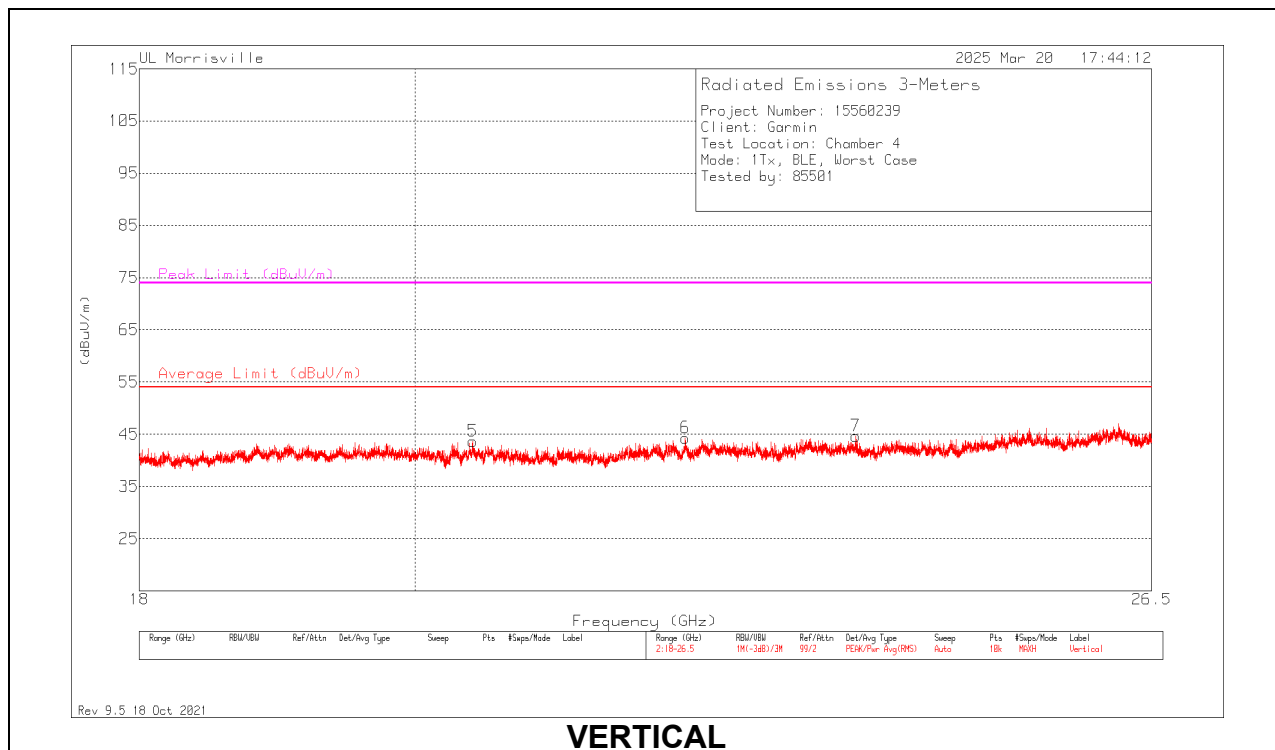
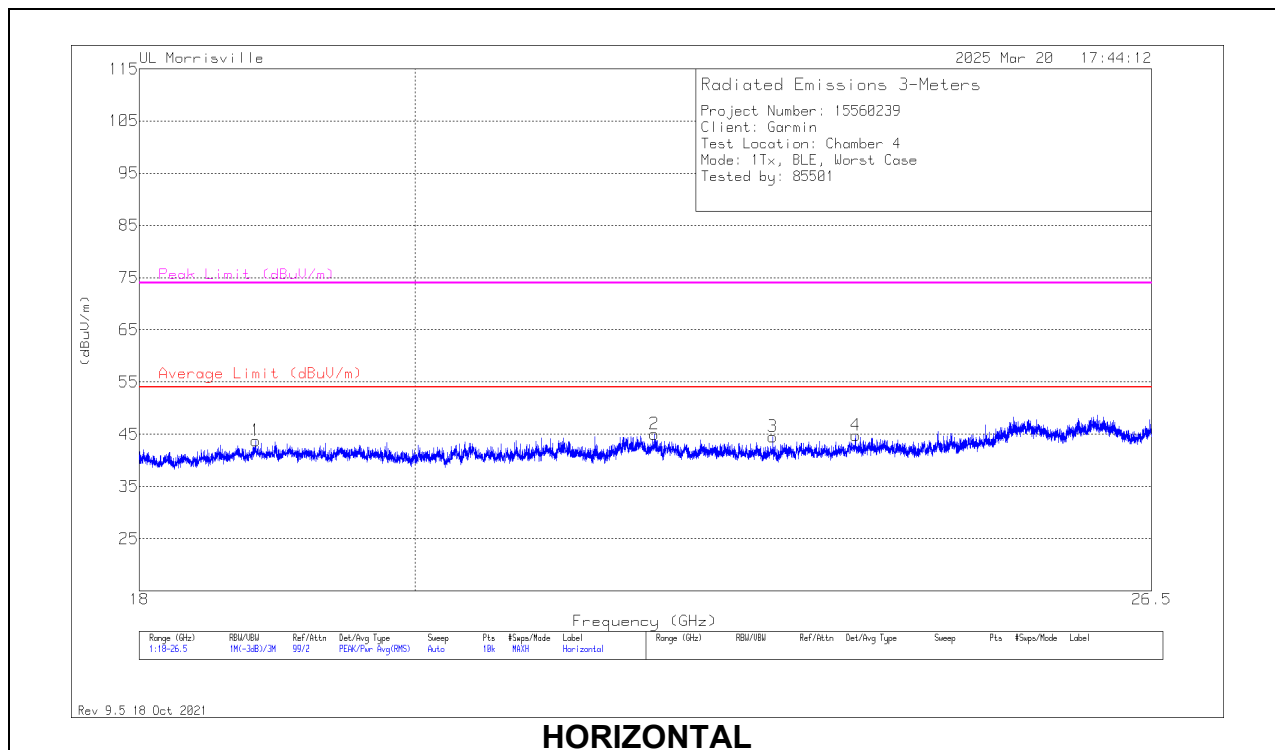
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90628 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
7	36.8546	40.49	Qp	22.3	-32.1	30.69	40	-9.31	171	156	V
1	43.483	40.92	Pk	17.5	-32	26.42	40	-13.58	0-360	300	H
8	43.483	50.25	Qp	17.5	-32	35.75	40	-4.25	273	144	V
2	49.109	39.87	Pk	14.5	-31.9	22.47	40	-17.53	0-360	200	H
3	95.572	40.86	Pk	15.3	-31.4	24.76	43.52	-18.76	0-360	100	H
9	183.26	44.89	Pk	17.1	-30.8	31.19	43.52	-12.33	0-360	100	V
4	187.237	45.59	Pk	17.2	-30.9	31.89	43.52	-11.63	0-360	100	H
10	243.206	45.63	Pk	17.7	-30.6	32.73	46.02	-13.29	0-360	100	V
5	304.122	47.76	Pk	19.7	-30.3	37.16	46.02	-8.86	0-360	100	H
11	352.137	43.03	Pk	20.6	-29.9	33.73	46.02	-12.29	0-360	100	V
6	353.204	47.24	Pk	20.6	-30	37.84	46.02	-8.18	0-360	100	H
12	385.9415	40.89	Pk	21.2	-29.9	32.19	46.02	-13.83	0-360	100	V

Pk - Peak detector

Qp - Quasi-Peak detector

10.6. WORST CASE 18-26 GHZ

SPURIOUS EMISSIONS 18-26 GHz (WORST-CASE CONFIGURATION)



18 – 26GHz Data

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	204704 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 18.81932	51.17	Pk	33.4	-40.8	43.77	54	-10.23	74	-30.23	0-360	100	H
3	* 22.92951	50.41	Pk	34.1	-40	44.51	54	-9.49	74	-29.49	0-360	100	H
4	* 23.66808	48.6	Pk	34.5	-38.3	44.8	54	-9.2	74	-29.2	0-360	100	H
5	* 20.44436	50.53	Pk	33.6	-40.5	43.63	54	-10.37	74	-30.37	0-360	300	V
6	* 22.17563	49.68	Pk	34.3	-39.7	44.28	54	-9.72	74	-29.72	0-360	300	V
7	* 23.66978	48.51	Pk	34.5	-38.4	44.61	54	-9.39	74	-29.39	0-360	300	V
2	21.91726	50.94	Pk	34.2	-40.1	45.04	54	-8.96	74	-28.96	0-360	150	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

11. SETUP PHOTOS

Please refer to R15560239-EP2 for setup photos

END OF TEST REPORT