

TEST REPORT

Report Number: R15607127-E3

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

Model : A04907

FCC ID : IPH-04907

IC : 1792A-04907

EUT Description : Extremity Worn 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:
2025-03-19

Prepared by:
UL LLC
12 Laboratory Dr.
Research Triangle Park, NC 27709 U.S.A.
TEL: (919) 549-1400



REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2025-02-13	Initial Issue	Manish Baral
V2	2025-03-19	Added Radiated DQPSK Data and Updated Antenna Type	Chandler Stanley

TABLE OF CONTENTS

REPORT REVISION HISTORY	2
TABLE OF CONTENTS	3
1. ATTESTATION OF TEST RESULTS	5
2. TEST RESULTS SUMMARY	6
3. TEST METHODOLOGY	6
4. FACILITIES AND ACCREDITATION	6
5. DECISION RULES AND MEASUREMENT UNCERTAINTY	7
5.1. METROLOGICAL TRACEABILITY	7
5.2. DECISION RULES	7
5.3. MEASUREMENT UNCERTAINTY	7
5.4. SAMPLE CALCULATION	7
6. EQUIPMENT UNDER TEST	8
6.1. EUT DESCRIPTION	8
6.2. MAXIMUM OUTPUT POWER	8
6.3. DESCRIPTION OF AVAILABLE ANTENNAS	8
6.4. SOFTWARE AND FIRMWARE	8
6.5. WORST-CASE CONFIGURATION AND MODE	9
6.6. DESCRIPTION OF TEST SETUP	9
7. TEST AND MEASUREMENT EQUIPMENT	10
8. MEASUREMENT METHODS	13
9. ANTENNA PORT TEST RESULTS	14
9.1. 20 dB AND 99% BANDWIDTH	14
9.1.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION	14
9.1.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION	15
9.1.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION	16
9.2. ON TIME AND DUTY CYCLE	17
9.3. HOPPING FREQUENCY SEPARATION	18
9.3.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION	19
9.3.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION	20
9.3.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION	21
9.4. NUMBER OF HOPPING CHANNELS	22
9.4.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION	23
9.4.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION	25
9.4.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION	27

9.5. AVERAGE TIME OF OCCUPANCY29
9.5.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION29
9.5.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION31
9.5.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION.....33
9.6. OUTPUT POWER35
9.6.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION35
9.6.2. BLUETOOTH ENHANCED DATA RATE DQPSK MODULATION36
9.6.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION.....36
9.7. AVERAGE POWER.....37
9.7.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION37
9.7.2. BLUETOOTH ENHANCED DATA RATE DQPSK MODULATION37
9.7.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION.....38
9.8. CONDUCTED SPURIOUS EMISSIONS.....39
9.8.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION40
9.8.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION42
9.8.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION.....44
10. RADIATED TEST RESULTS46
10.1. TRANSMITTER ABOVE 1 GHz.....48
10.1.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION48
10.1.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION58
10.1.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION.....68
10.2. WORST CASE SPURIOUS BELOW 30MHZ.....78
10.3. WORST CASE SPURIOUS 30-1000MHZ80
10.4. WORST CASE SPURIOUS 18-26GHz.....82
11. AC POWER LINE CONDUCTED EMISSIONS84
11.1. AC POWER LINE.....85
12. SETUP PHOTOS87
END OF TEST REPORT87

1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: Extremity Worn Digital Transceiver

MODEL: A04907

SERIAL NUMBER: 3493239303, 3493238982

SAMPLE RECEIPT DATE: 2024-12-17

DATE TESTED: 2025-01-02 to 2025-01-15

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

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:

Prepared By:



Mike Antola
Sr. Staff Engineer
Consumer, Medical and IT Segment
UL LLC



Manish Baral
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	Per ANSI C63.10, Section 11.6.
See Comment	RSS-GEN 6.7	20dB BW/99% OBW	Reporting purposes only	ANSI C63.10 Sections 6.9.2 and 6.9.3
15.247 (a)(1)	RSS-247 (5.1) (b)	Hopping Frequency Separation	Compliant	None
15.247 (a)(1)(iii)	RSS-247 (5.1) (d)	Number of Hopping Channels		
15.247 (a)(1)(iii)	RSS-247 (5.1) (d)	Average Time of Occupancy		
15.247 (b)(1)	RSS-247 (5.4) (b)	Output Power		
See Comment		Average Power	Reporting purposes only	Per ANSI C63.10, Section 11.9.2.3.2.
15.247 (d)	RSS-247 (5.5)	Conducted Spurious Emissions	Compliant	None
15.209, 15.205	RSS-GEN 8.9, 8.10	Radiated Emissions		
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions		

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC 47 CFR Part 2, FCC 47 CFR Part 15, ANSI C63.10-2020, 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
<input type="checkbox"/>	Building: 12 Laboratory Dr RTP, NC 27709, U.S.A	US0067	2180C	825374
<input checked="" type="checkbox"/>	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:

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

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

$$\text{Final Voltage (dBuV)} = \text{Measured Voltage (dBuV)} + \text{Cable Loss (dB)} + \text{Limiter Factor (dB)} + \text{LISN Insertion Loss}$$

$$36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$$

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is an extremity worn digital transceiver with BT, BLE, ANT/ANT+, 802.11b/g/n 2.4GHz WLAN, NFC, and Global Navigation Satellite System (GNSS) receiver. This report covers testing on the BT 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	Basic GFSK	9.82	9.59
2402 - 2480	Enhanced DQPSK	11.40	13.80
2402 - 2480	Enhanced 8PSK	11.14	13.00

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:

Type	Frequency Range (MHz)	Maximum Gain (dBi)
Bezel Antenna	2402-2480	-0.2

6.4. SOFTWARE AND FIRMWARE

The software version installed on radiated units during testing was 3.95.

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT set to transmit at the channel and mode with the highest average output power as worst-case scenario.

Band edge and radiated emissions between 1GHz and 18GHz were performed with the EUT set to transmit at the highest power on low, middle and high channels.

The fundamental of the EUT was investigated in three orthogonal orientations X, Y, and Z. The worst-case orientation was determined to be the Z-orientation; therefore, all testing was performed with the EUT in the Z-orientation.

Note: To reduce size of report only representative plots are included for some conducted testing.

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adaptor	Garmin/Phihong	AQ27A-59CFA	N/A	N/A

I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Proprietary	1	USB-C	Shielded	<3m	Program/Charge EUT

TEST SETUP

EUT was configured using its own built-in push buttons prior to testing. For final emissions testing, the EUT was connected to AC mains.

SETUP DIAGRAMS

Please refer to R15607127-EP1 for setup diagrams

7. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 1)

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	1-18 GHz				
135143	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2024-02-07	2026-02-07
	Gain-Loss Chains				
91979	Gain-loss string: 1-18GHz	Various	Various	2024-05-08	2025-05-08
	Receiver & Software				
206496	Spectrum Analyzer	Rohde & Schwarz	ESW44	2024-08-29	2025-08-29
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
241205	Environmental Meter	Fisher Scientific	15-077-963	2023-09-05	2025-09-05

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

Equip. ID	Description	Manufacturer	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
	18-40 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
81018	Spectrum Analyzer	Agilent	E4446A	2024-07-31	2025-07-31
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

Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manuf.	Model Number	Last Cal.	Next Cal.
	Common Equipment				
	Conducted Room 1				
90416	Spectrum Analyzer	Keysight Technologies	N9030A	2024-09-23	2025-09-23
179892	Environmental Meter	Fisher Scientific	15-077-963	2024-08-12	2025-08-12
211057	Real-Time Peak Power Sensor 50MHz to 8GHz	Boonton	RTP5000	2024-08-01	2025-08-01
SOFTEMI	Antenna Port Software	UL	Version 2022.8.16	NA	NA

Test Equipment Used - Wireless Conducted Attenuators, Cables, and Couplers

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	Attenuators				
226562	SMA Coaxial 10dB Attenuator 25MHz-18GHz	CentricRF	C18S2-10	2024-04-11	2025-04-11

Test Equipment Used - Line-Conducted Emissions – Voltage (Morrisville – Conducted 1)

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
CBL087	Coax cable, RG223, N-male to BNC-male, 20-ft.	Pasternack	PE3W06143-240	2024-04-04	2025-04-04
179892	Environmental Meter	Fisher Scientific	15-077-963	2024-08-12	2025-08-12
80391	LISN, 50-ohm/50-uH, 250uH 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50/250-25-2-01	2024-08-01	2025-08-01
70374	EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESCI 7	2024-07-30	2025-07-30
52859	Transient Limiter, 0.009-100MHz	Electro-Metrics	EM-7600	2024-04-04	2025-04-04
PS216	AC Power Source	Elgar	CW2501M	NA	NA
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Miscellaneous (if needed)				
84681	ANSI C63.4 1m extension cable.	UL	Per Annex B of ANSI C63.4	2024-04-04	2025-04-04

8. MEASUREMENT METHODS

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

Occupied BW (20dB): ANSI C63.10-2020 Section 6.9.2

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

Carrier Frequency Separation: ANSI C63.10-2020 Section 7.8.2

Number of Hopping Frequencies: ANSI C63.10-2020 Section 7.8.3

Time of Occupancy (Dwell Time): ANSI C63.10-2020 Section 7.8.4

Output Power: ANSI C63.10-2020 Section 7.8.5

Conducted Spurious Emissions: ANSI C63.10-2020 Section 7.8.7

Conducted Band-Edge: ANSI C63.10-2020 Section 7.8.7.2 and 6.10.4

Radiated Band-edge: ANSI C63.10-2020 Section 6.10.5

Radiated Spurious Emissions: ANSI C63.10-2020 Sections 6.3 to 6.6 and 7.8.8

AC Power Line Conducted Emissions: ANSI C63.10-2020, Section 6.2.

9. ANTENNA PORT TEST RESULTS

9.1. 20 dB AND 99% BANDWIDTH

LIMITS

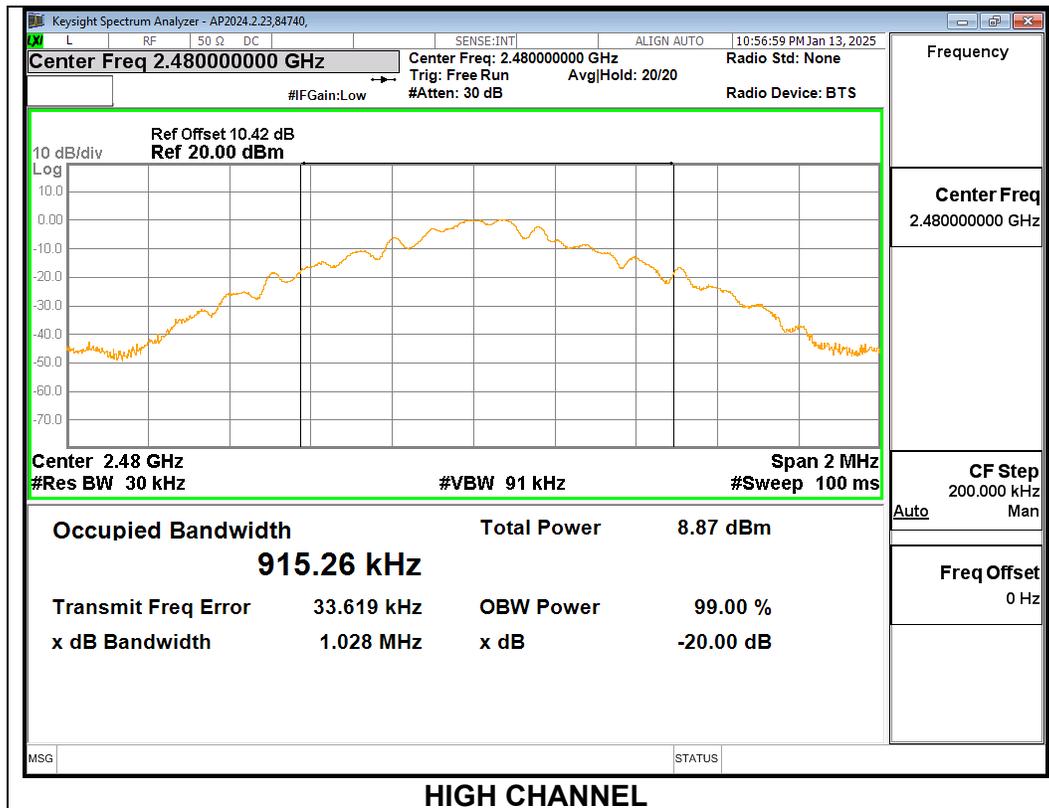
None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The RBW is set to 1-5% of the 20 dB bandwidth. The VBW is set to \geq RBW. The sweep time is coupled.

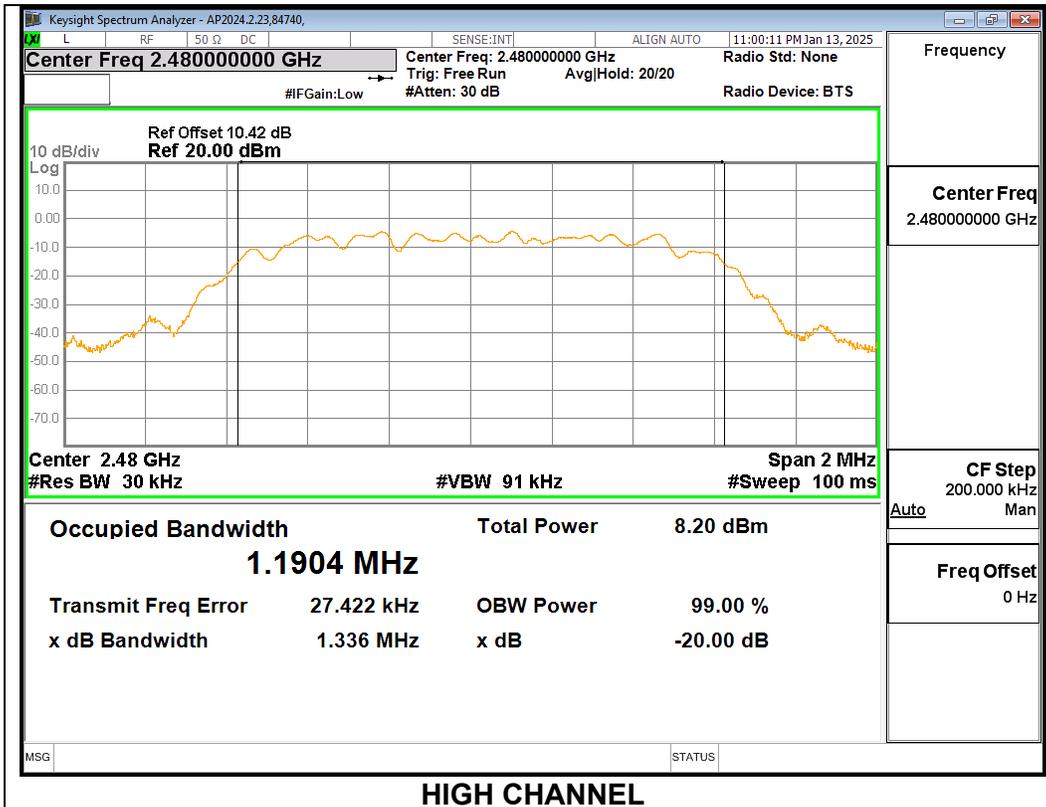
9.1.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

Channel	Frequency (MHz)	20dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	2402	1.028	0.916
Mid	2441	1.028	0.912
High	2480	1.028	0.915



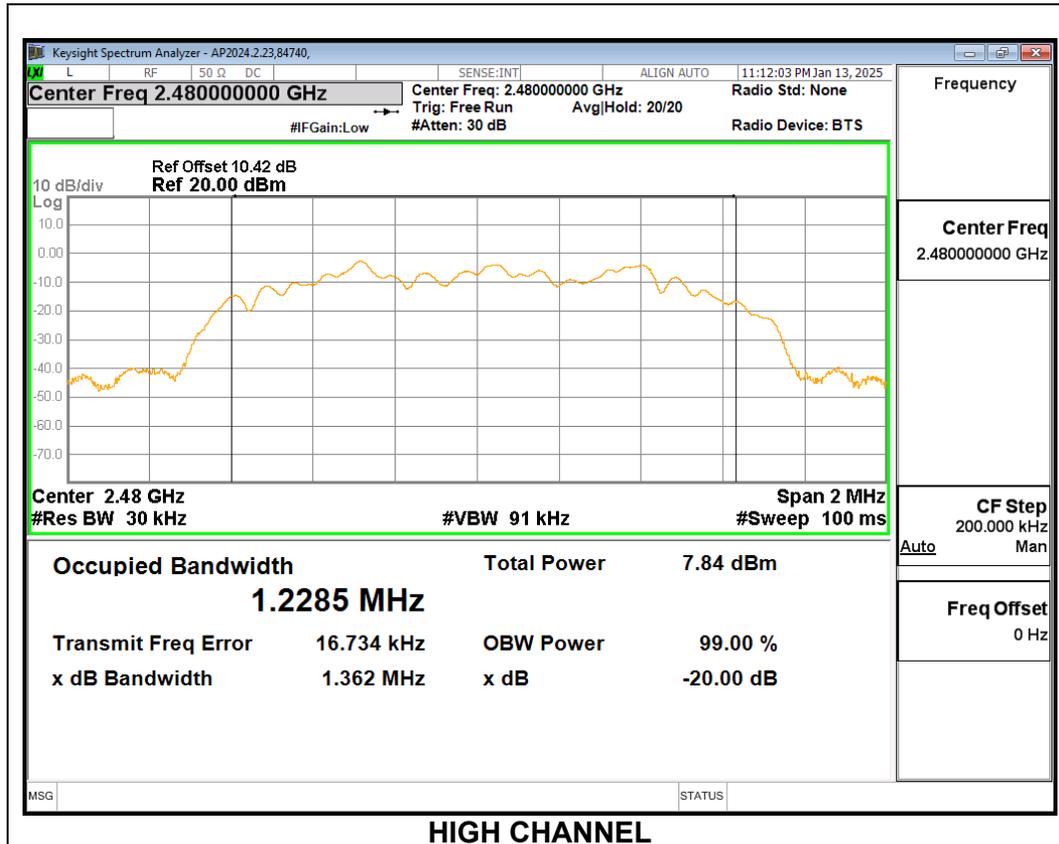
9.1.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION

Channel	Frequency (MHz)	20dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	2402	1.335	1.190
Mid	2441	1.335	1.190
High	2480	1.336	1.190



9.1.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

Channel	Frequency (MHz)	20dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	2402	1.369	1.2301
Mid	2441	1.365	1.2292
High	2480	1.362	1.2285



9.2. ON TIME AND DUTY CYCLE

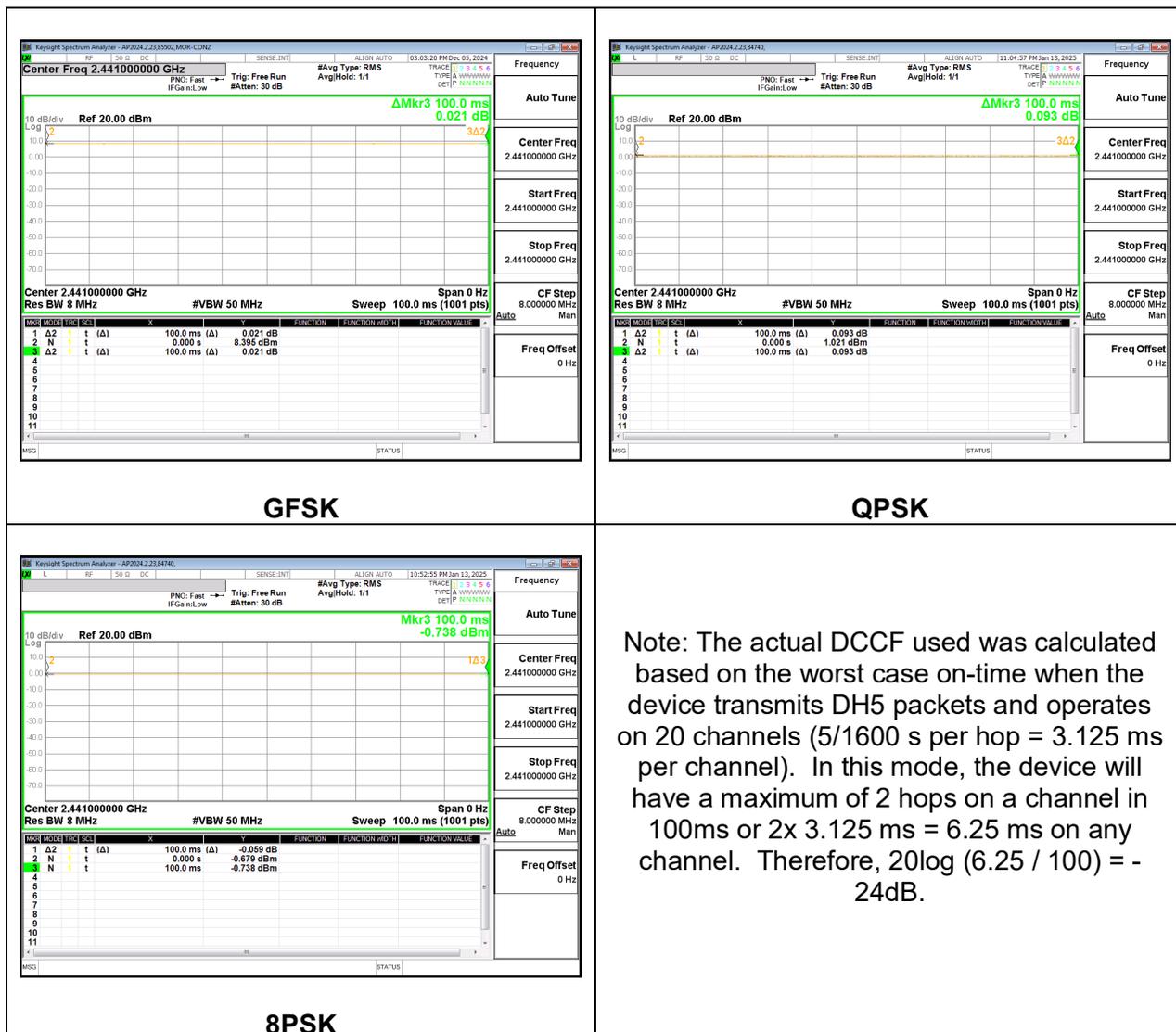
LIMITS

None; for reporting purposes only.

PROCEDURE

ANSI C63.10, Section 11.6: Zero-Span Spectrum Analyzer Method.

Mode	ON Time B (ms)	Period (ms)	Duty Cycle x (lineari)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
GFSK	100.00	100.00	1.000	100.00	0.00	0.010
QPSK	100.00	100.00	1.000	100.00	0.00	0.010
8PSK	100.00	100.00	1.000	100.00	0.00	0.010



9.3. HOPPING FREQUENCY SEPARATION

LIMITS

FCC §15.247 (a) (1)
RSS-247 (5.1) (b)

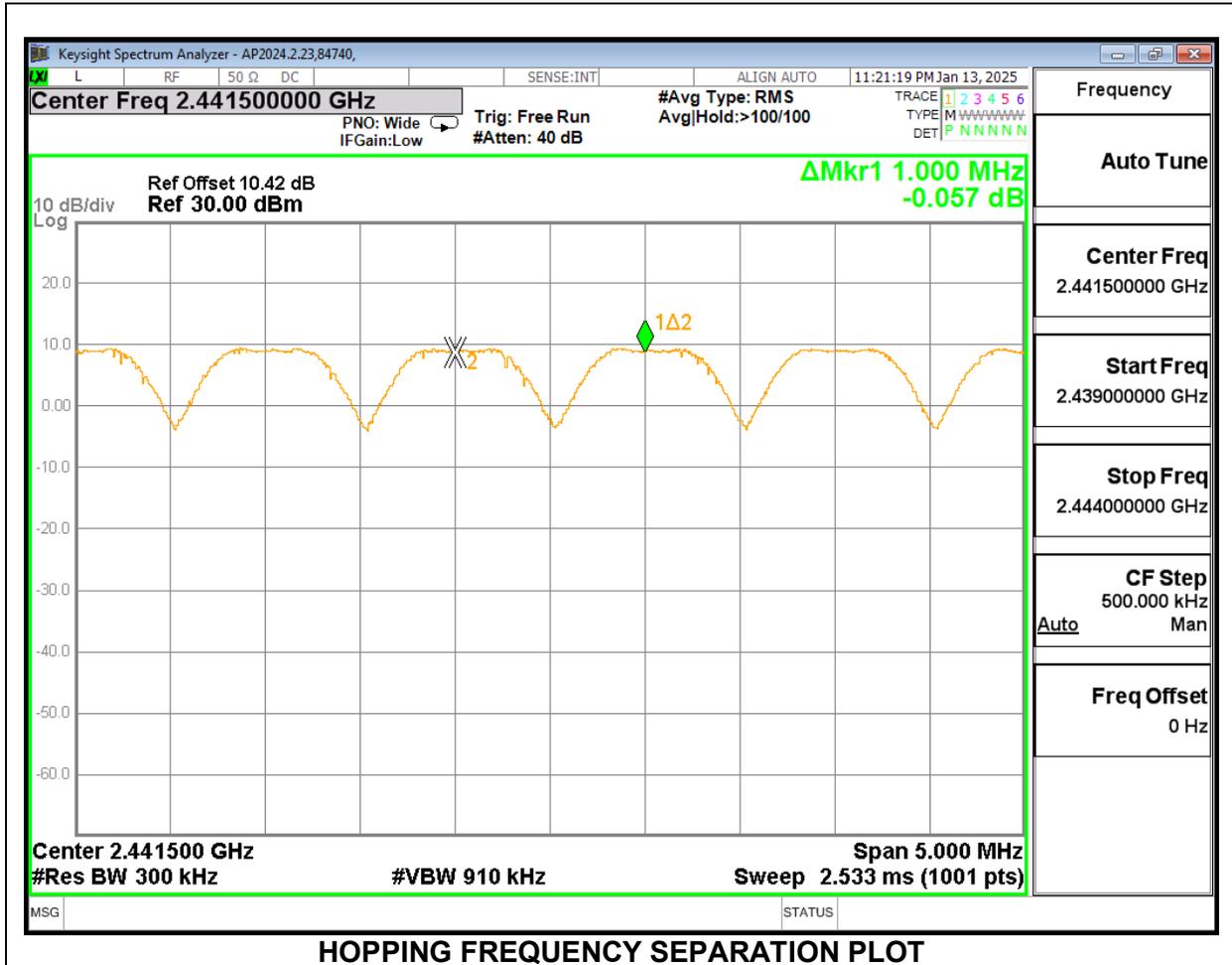
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

TEST PROCEDURE

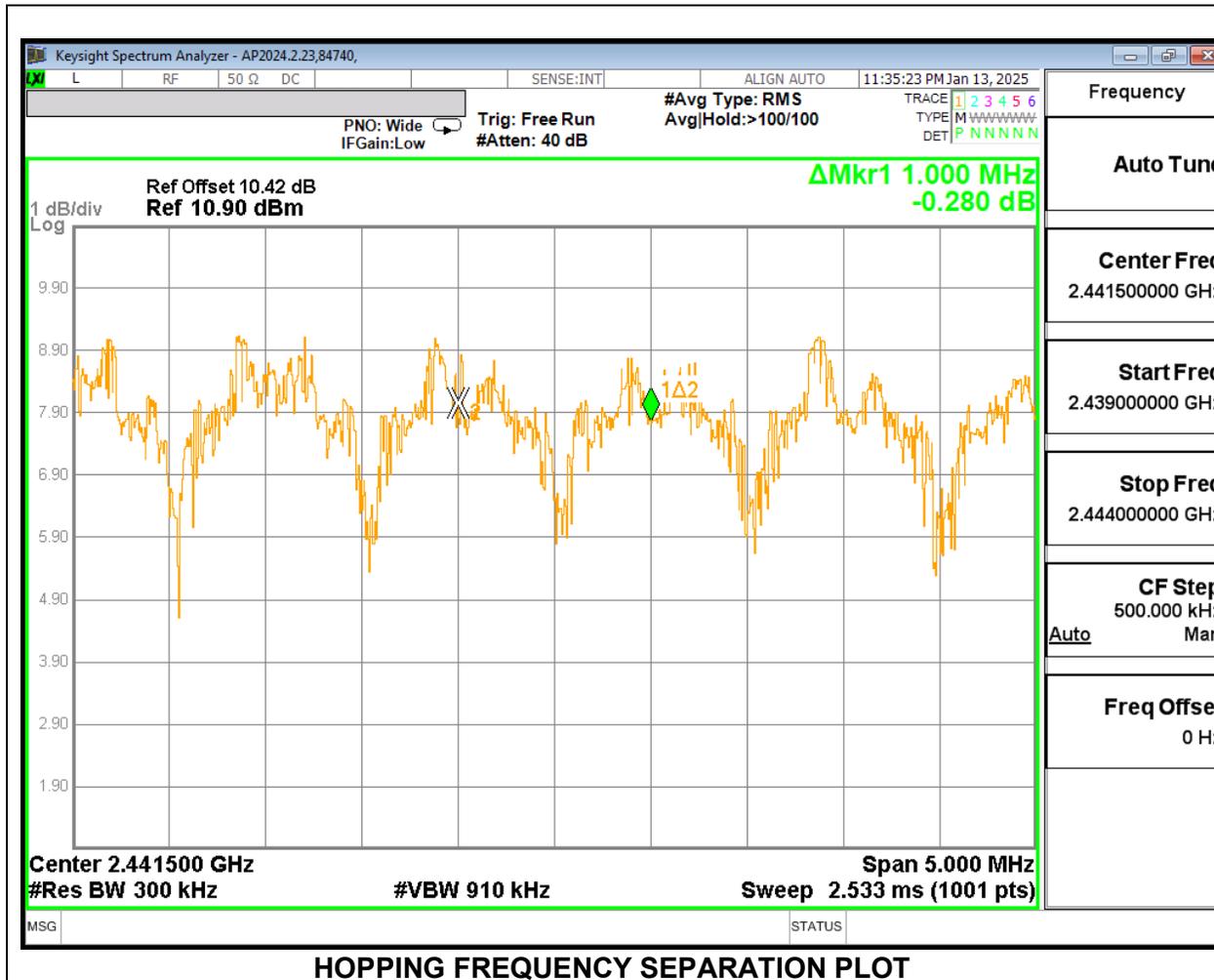
The transmitter output is connected to a spectrum analyzer. The RBW is set to 300 kHz and the VBW is set to $VBW \geq RBW$. The sweep time is coupled.

9.3.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION



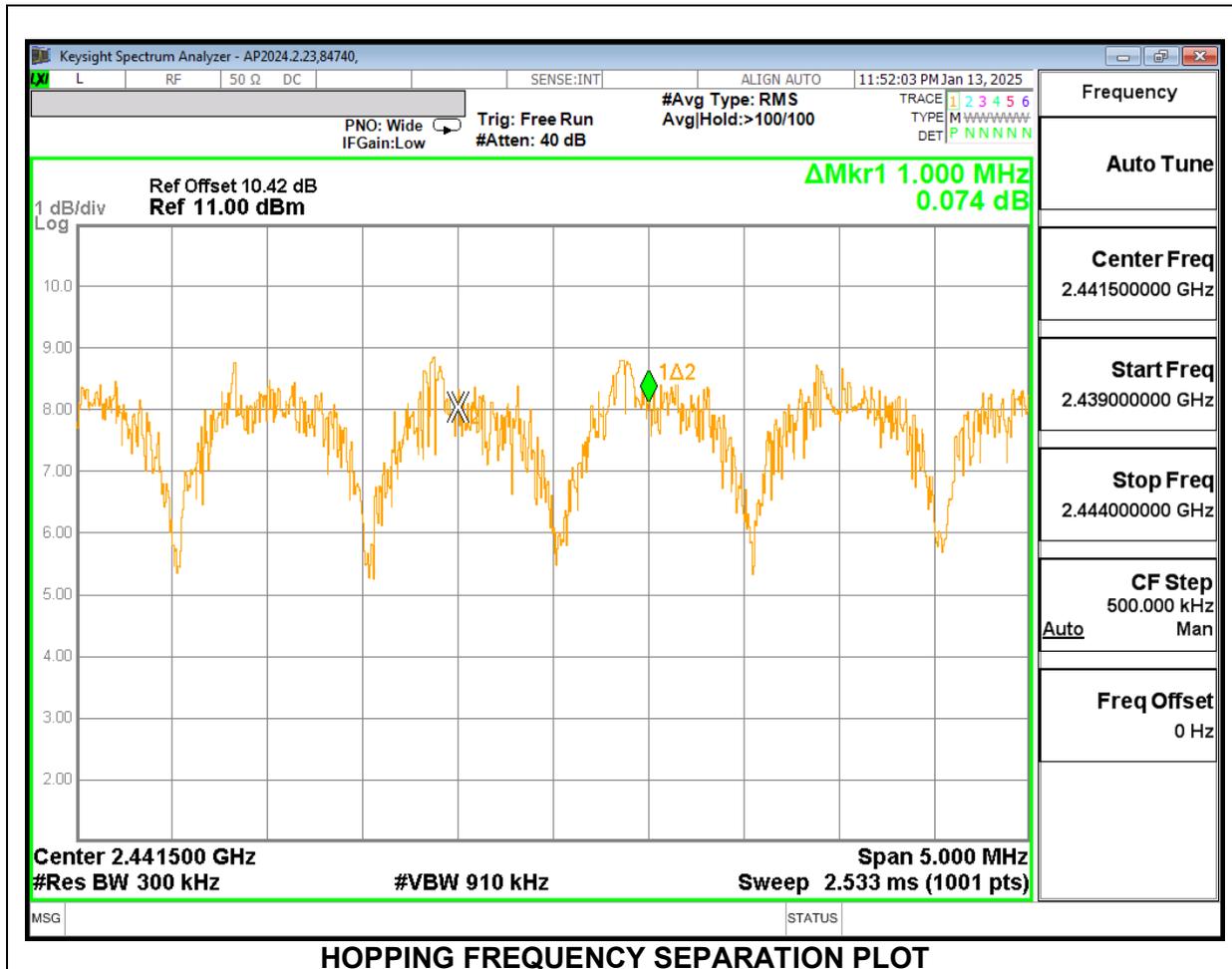
$(20\text{dB BW}) \times (2/3) = (1.028 \text{ MHz}) \times (2/3) = 0.685 \text{ MHz}$
 $0.685 \text{ MHz} < 1 \text{ MHz}$

9.3.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION



$$(20\text{dB BW}) \times (2/3) = (1.336 \text{ MHz}) \times (2/3) = 0.891 \text{ MHz}$$
$$0.891 \text{ MHz} < 1 \text{ MHz}$$

9.3.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION



$(20\text{dB BW}) \times (2/3) = (1.365 \text{ MHz}) \times (2/3) = 0.91 \text{ MHz}$
 $0.91 \text{ MHz} < 1 \text{ MHz}$

9.4. NUMBER OF HOPPING CHANNELS

LIMITS

FCC §15.247 (a) (1) (iii)
RSS-247 (5.1) (d)

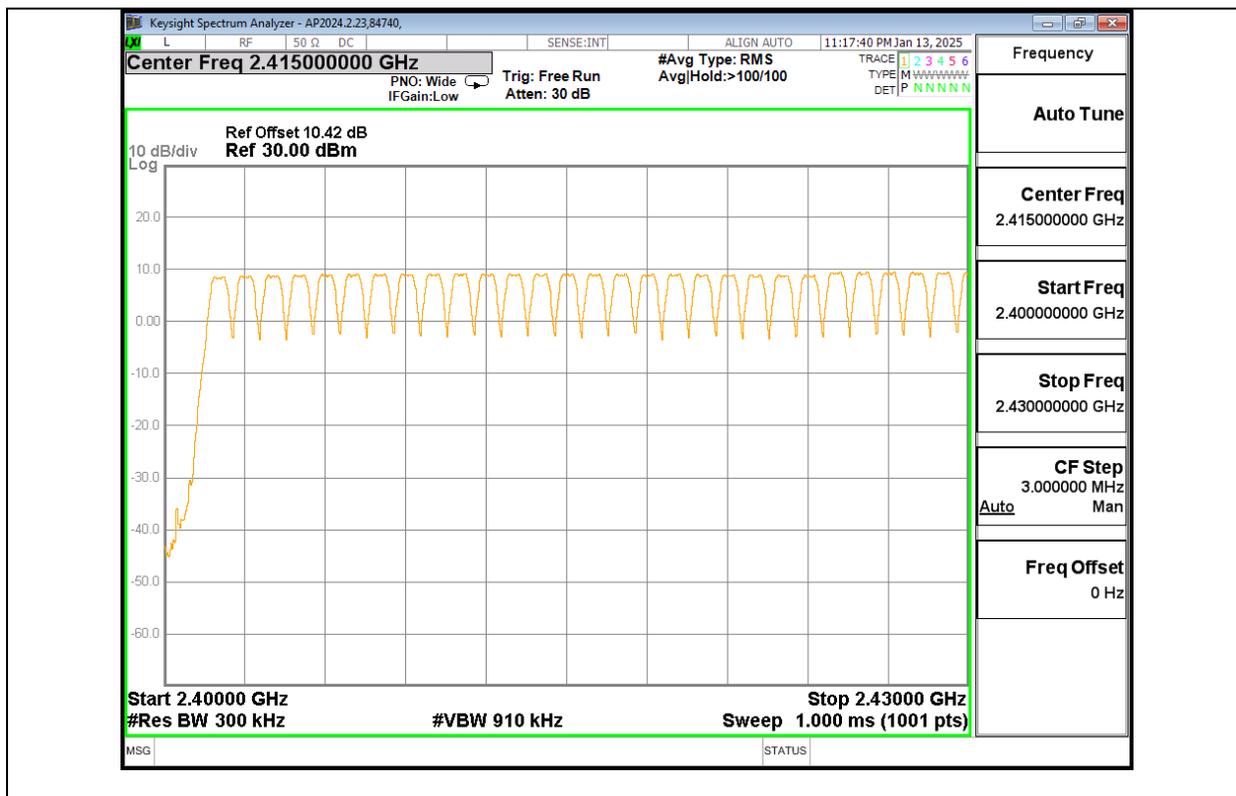
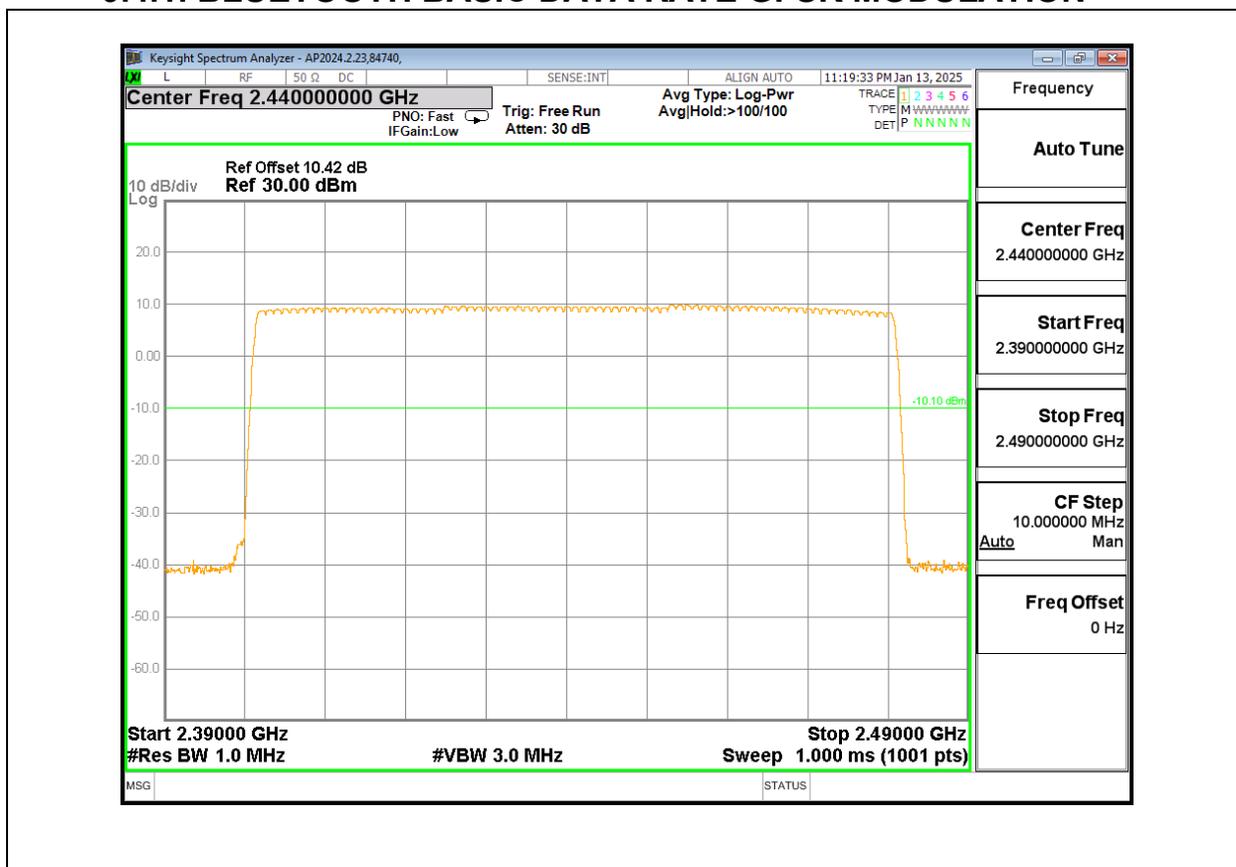
Frequency hopping systems in the 2400 – 2483.5 MHz band shall use at least 15 non-overlapping channels.

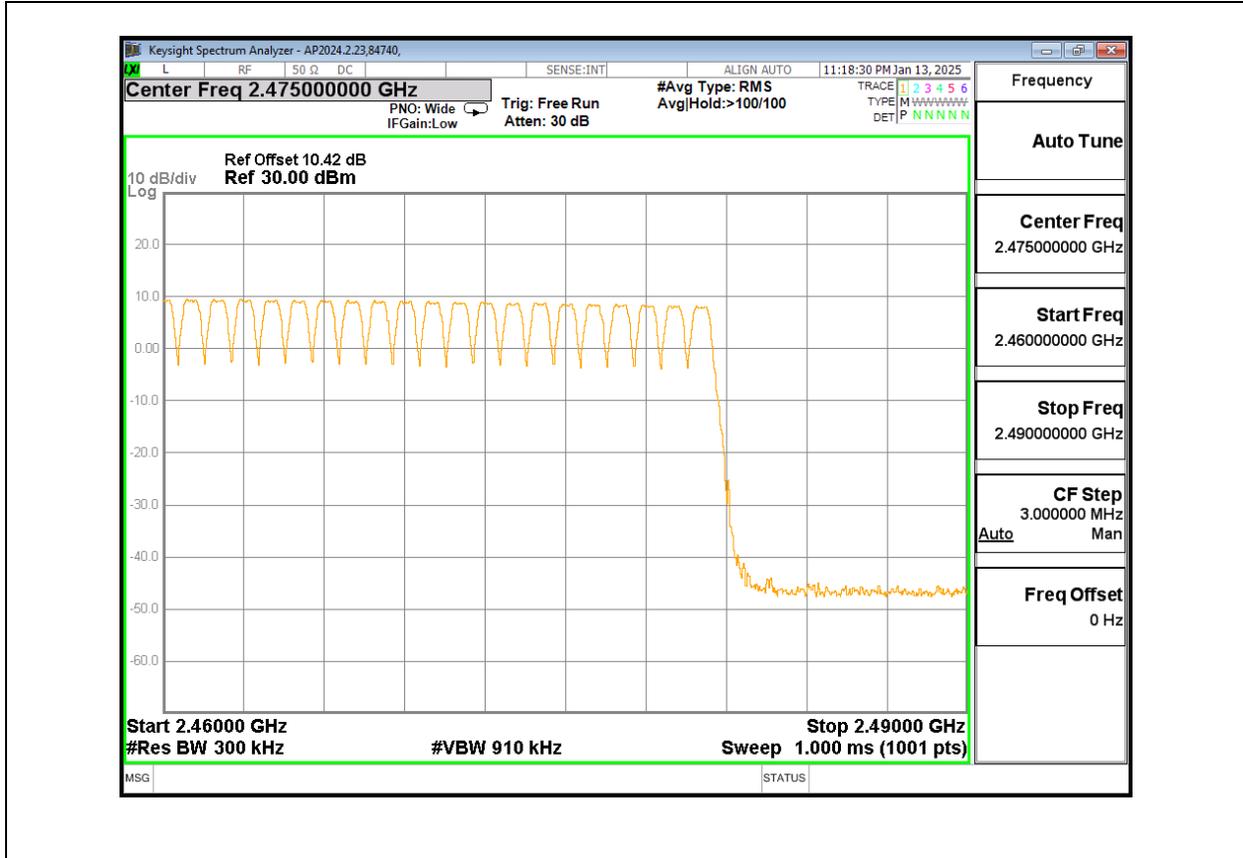
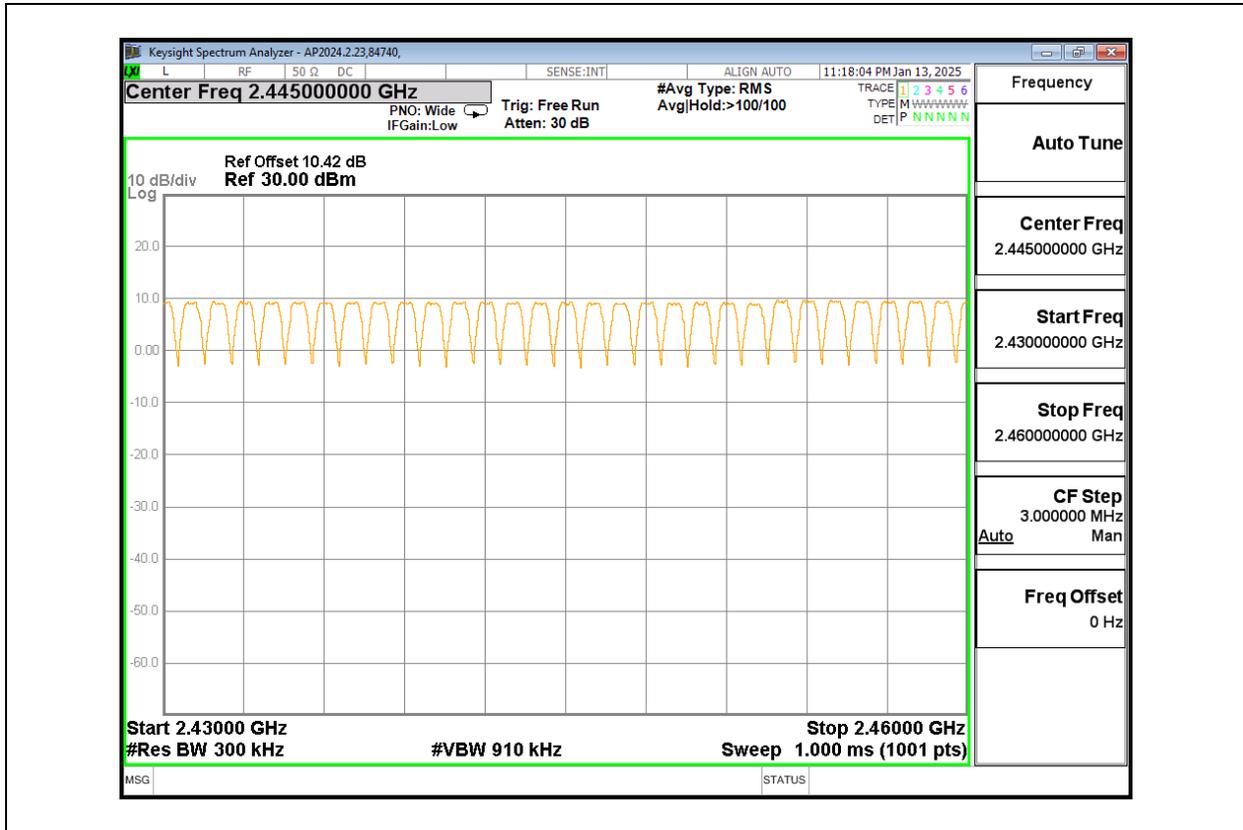
TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The span is set to cover the entire authorized band, in either a single sweep or in multiple contiguous sweeps. The RBW is set to a maximum of 1 % of the span. The analyzer is set to Max Hold.

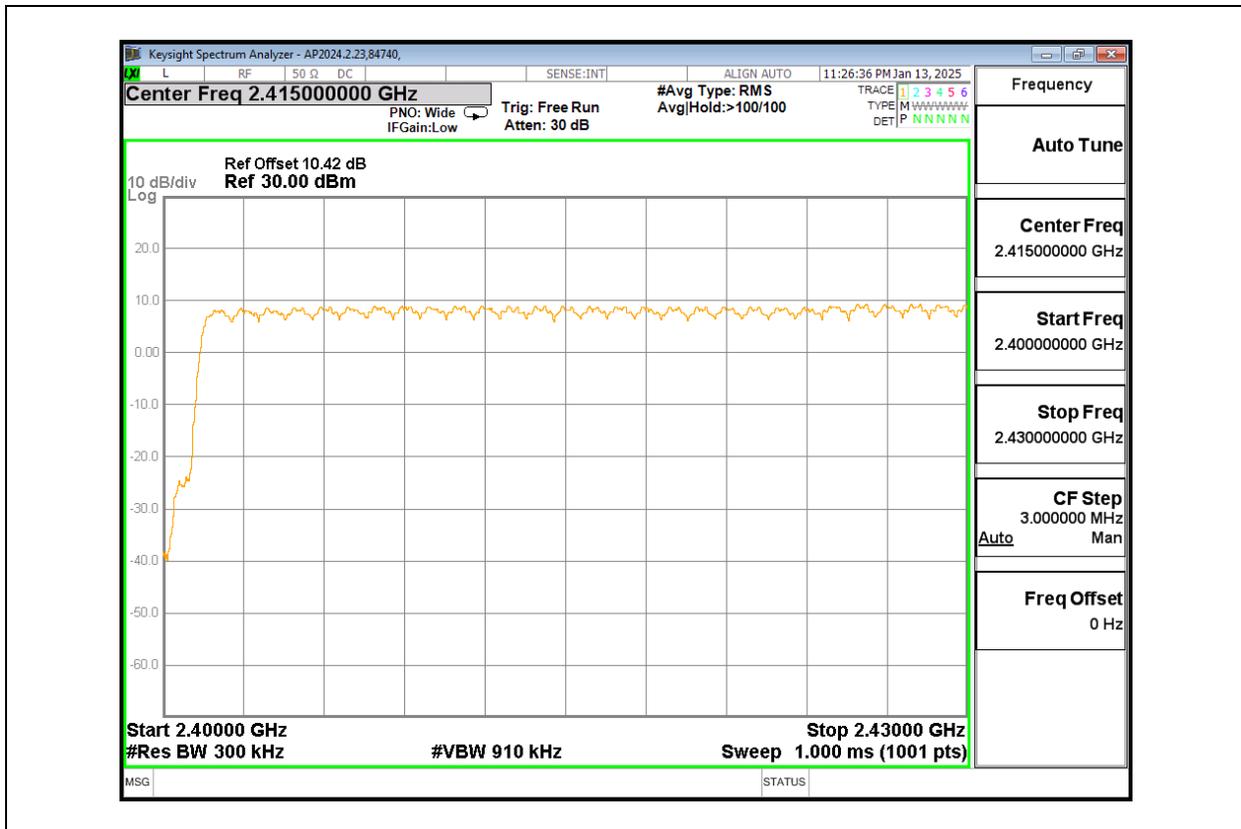
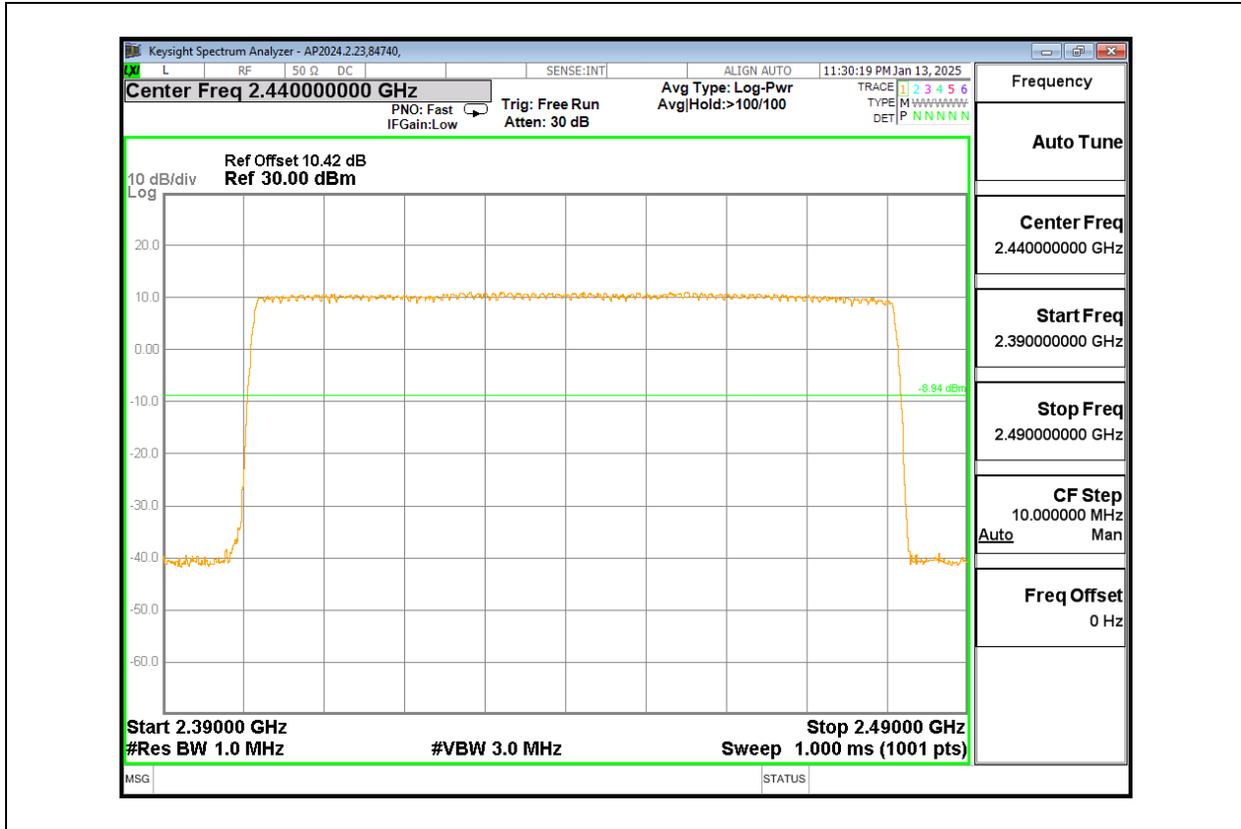
Normal Mode: 79 Channels Observed

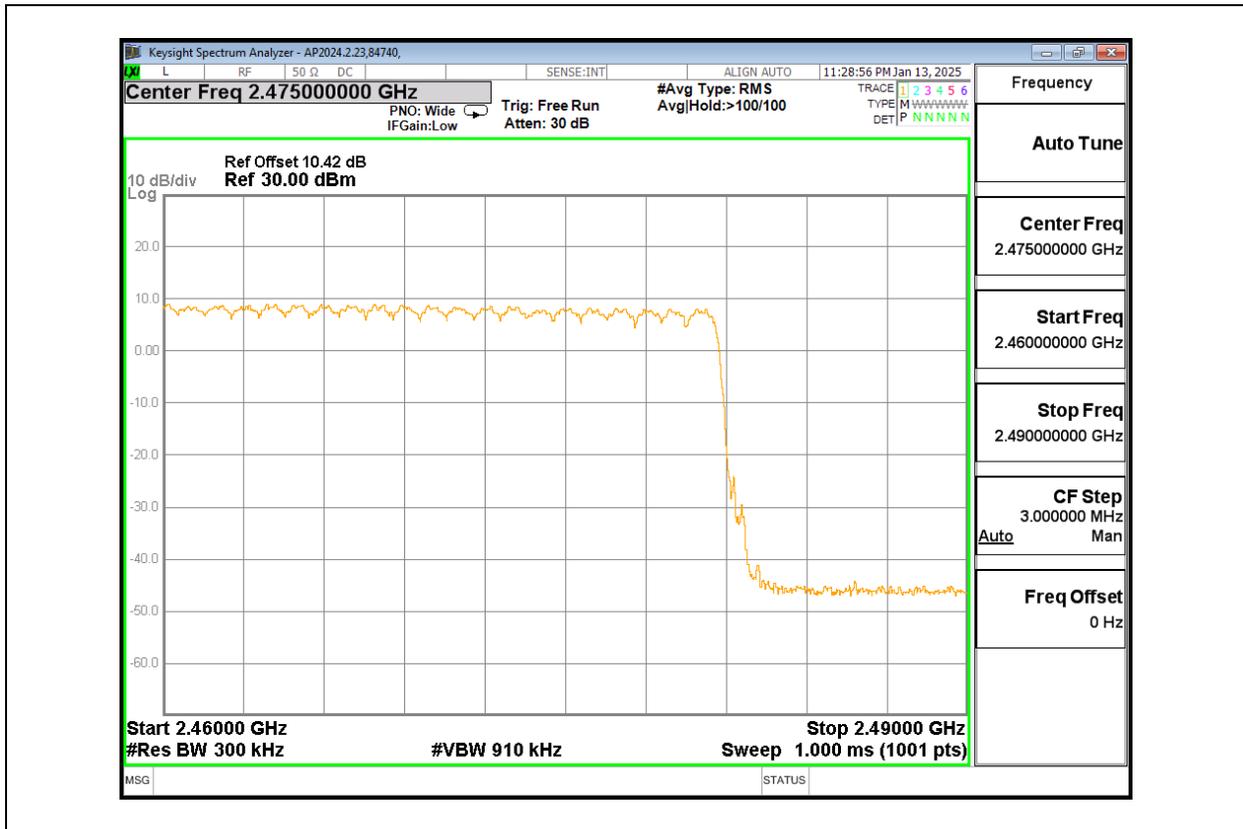
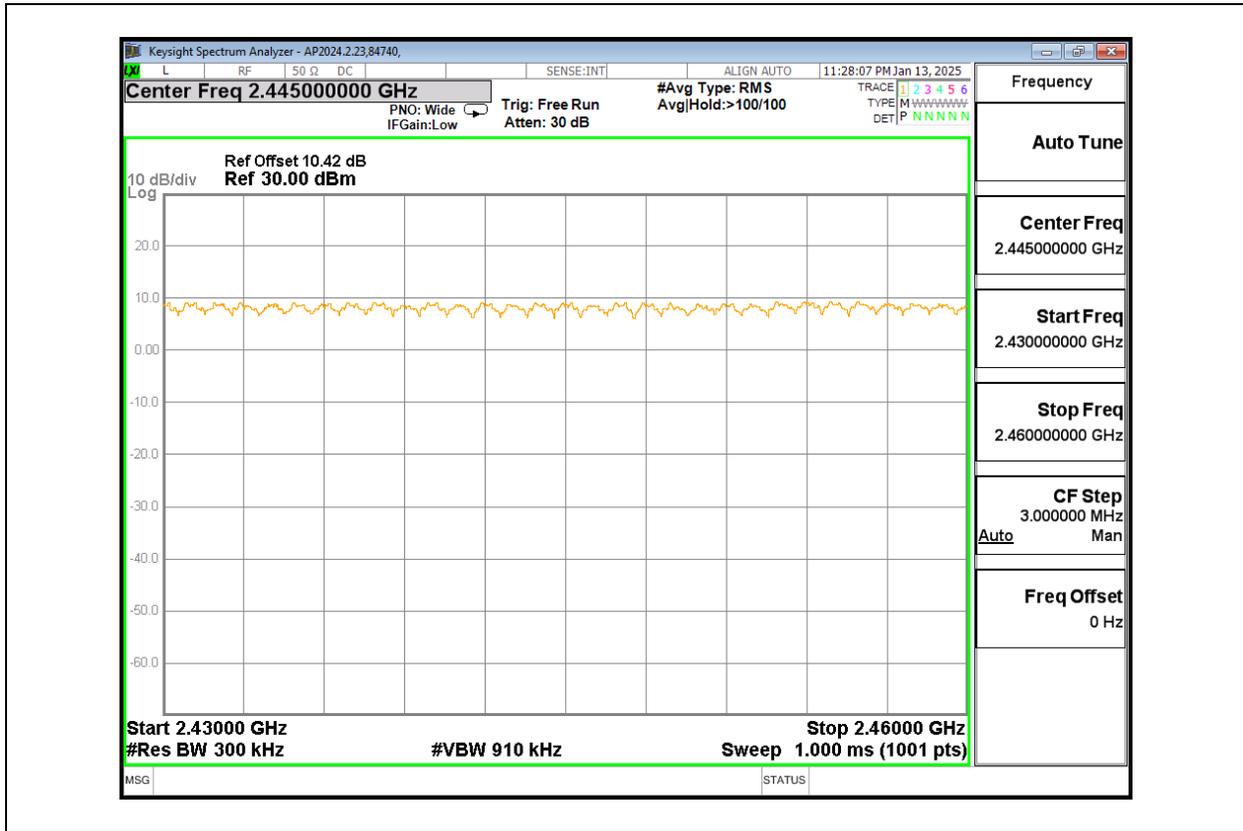
9.4.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION



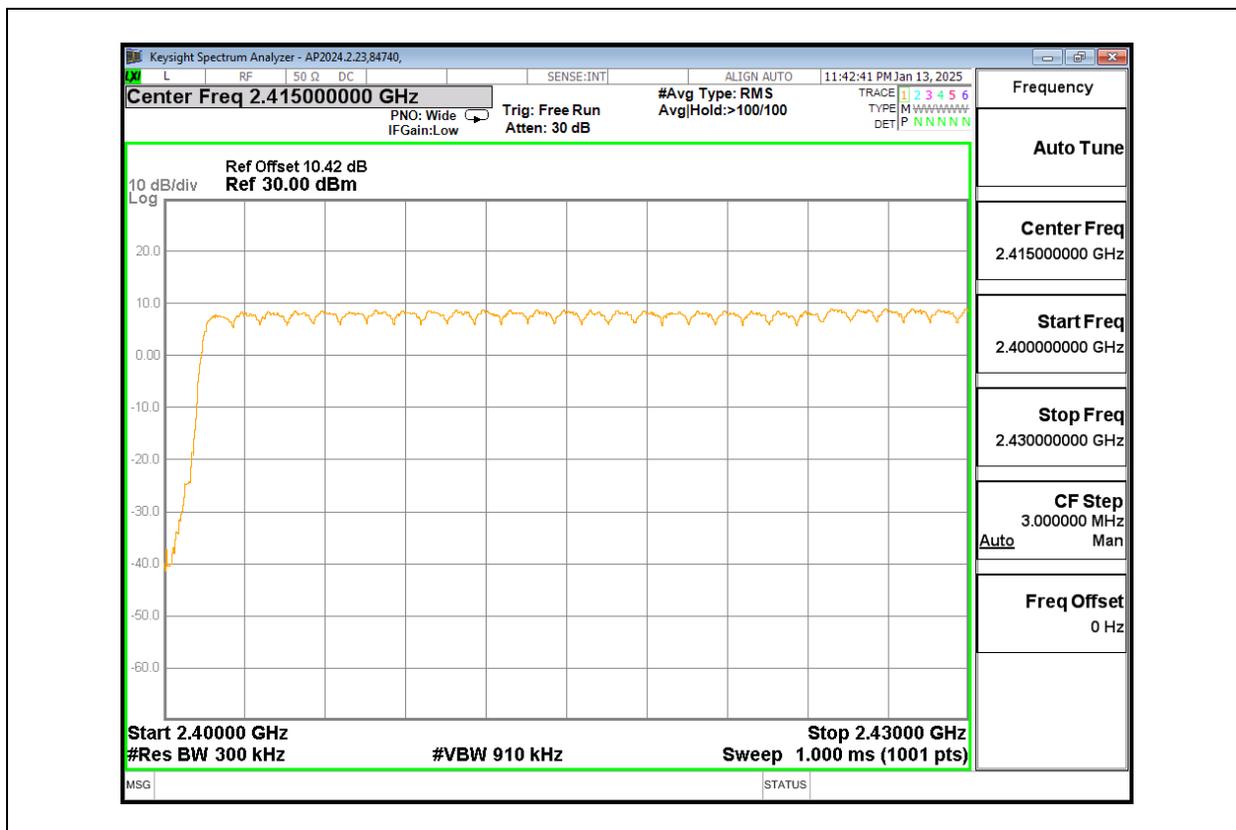
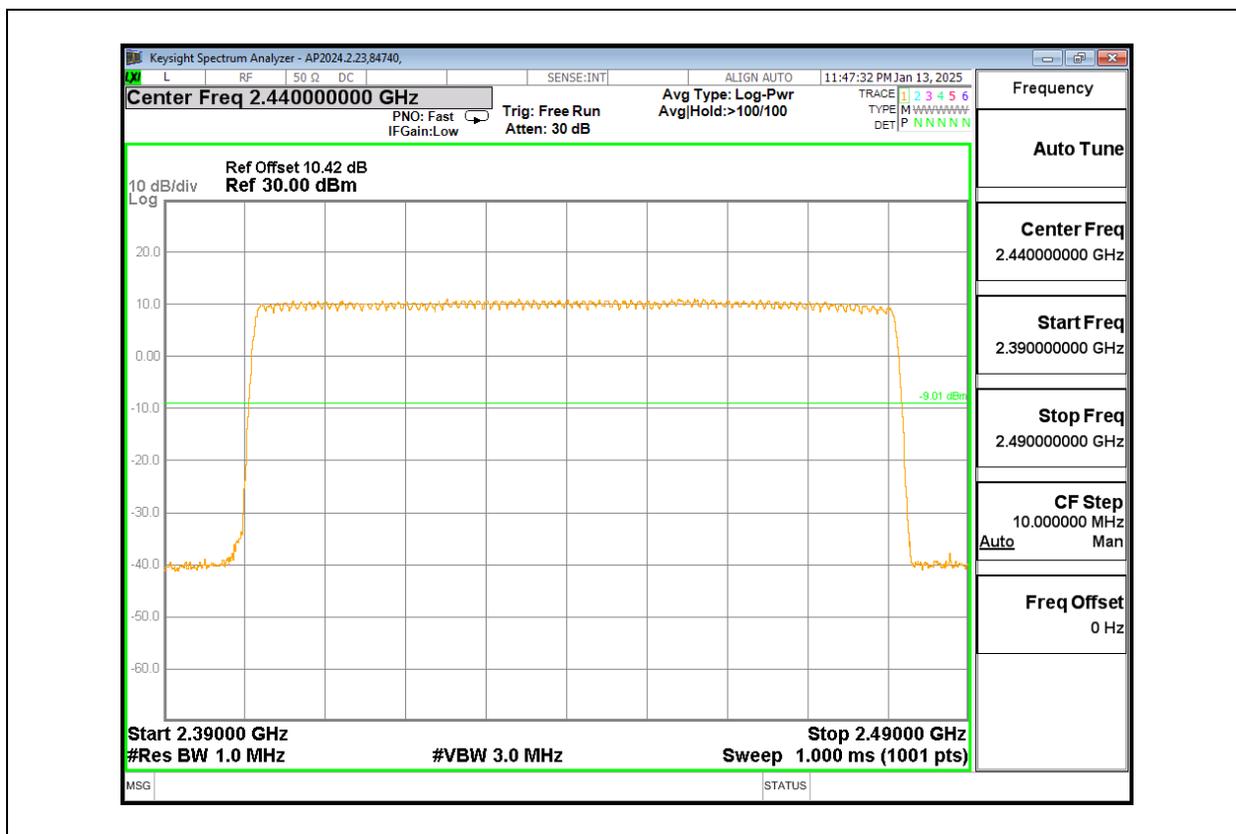


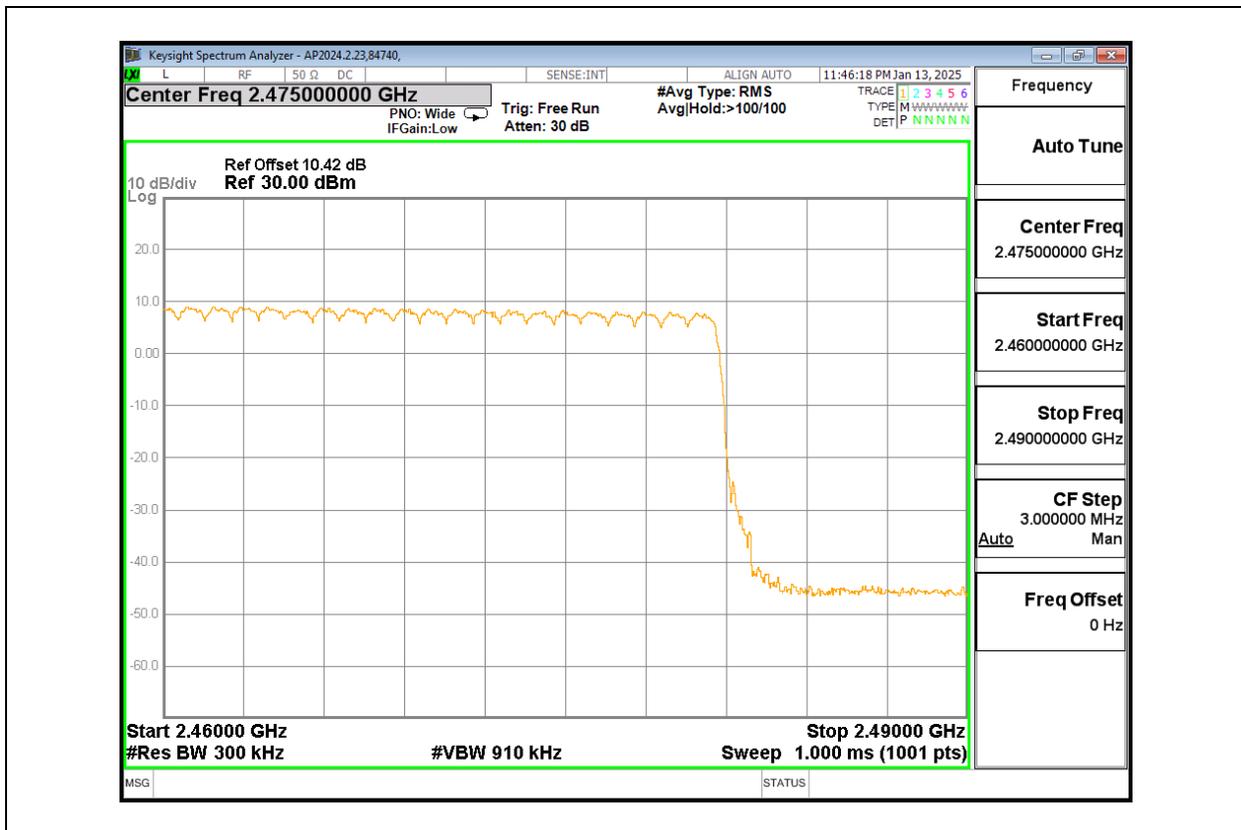
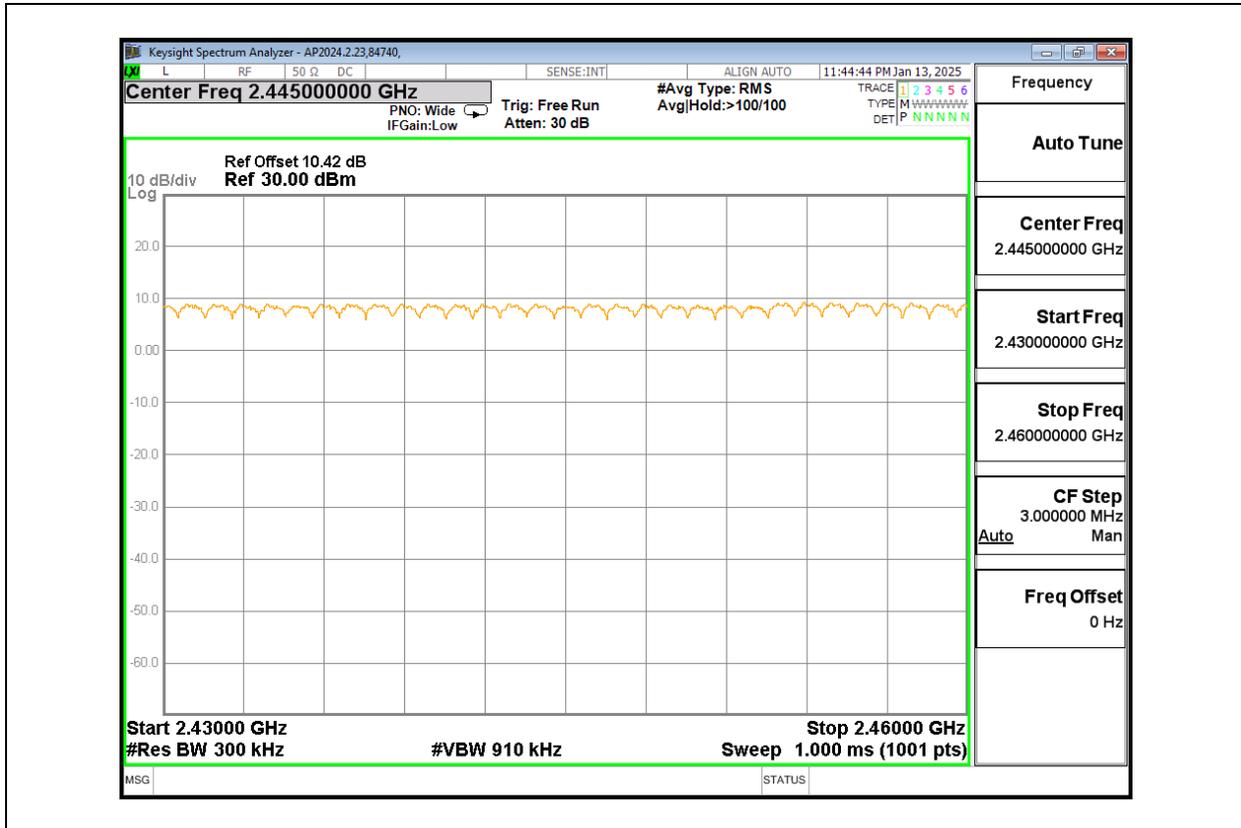
9.4.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION





9.4.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION





9.5. AVERAGE TIME OF OCCUPANCY

LIMITS

FCC §15.247 (a) (1) (iii)
 RSS-247 (5.1) (d)

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

TEST PROCEDURE

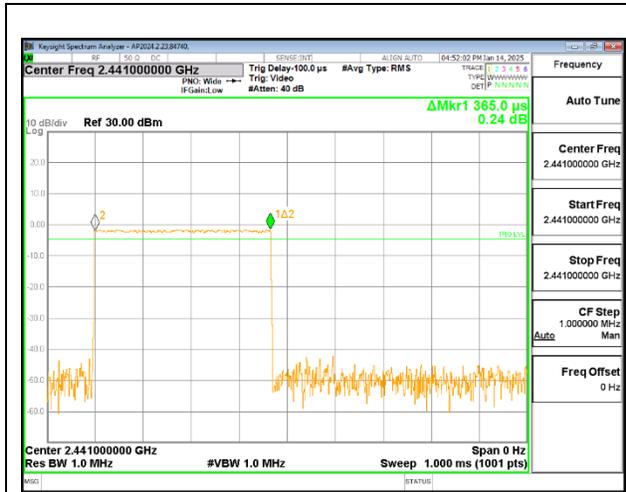
The transmitter output is connected to a spectrum analyzer. The span is set to 0 Hz, centered on a single, selected hopping channel. The width of a single pulse is measured in a fast scan. The number of pulses is measured in a 3.16 second scan, to enable resolution of each occurrence.

The average time of occupancy in the specified 3.16 second period (79 channels * 0.4 s) is equal to $10 * (\# \text{ of pulses in } 3.16 \text{ s}) * \text{ pulse width}$.

For AFH mode, the average time of occupancy in the specified 8 second period (20 channels * 0.4 seconds) is equal to $10 * (\# \text{ of pulses in } 0.8 \text{ s}) * \text{ pulse width}$.

9.5.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

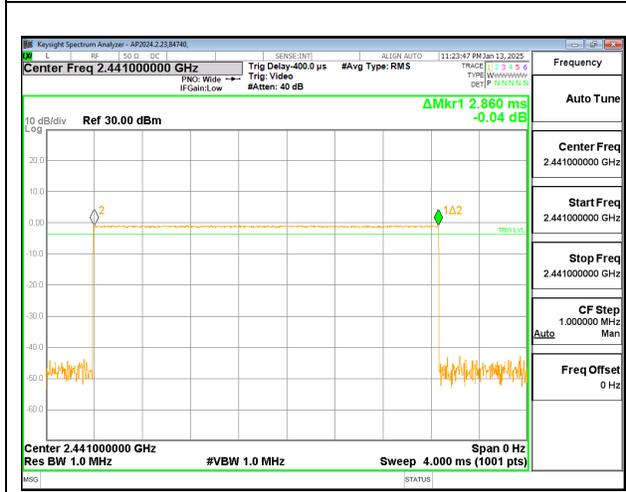
DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
GFSK Normal Mode					
DH1	0.365	31	0.1132	0.4	-0.2869
DH3	1.616	17	0.2747	0.4	-0.1253
DH5	2.86	10	0.2860	0.4	-0.1140
GFSK AFH Mode					
DH Packet	Pulse Width (sec)	Number of Pulses in 0.8 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
DH1	0.365	7.75	0.02829	0.4	-0.3717
DH3	1.616	4.25	0.06868	0.4	-0.3313
DH5	2.86	2.5	0.07150	0.4	-0.3285



PULSE WIDTH – DH1



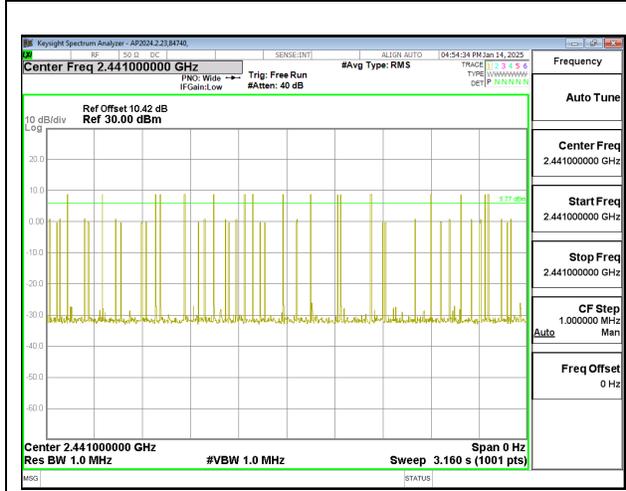
PULSE WIDTH – DH3



PULSE WIDTH – DH5



NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH1



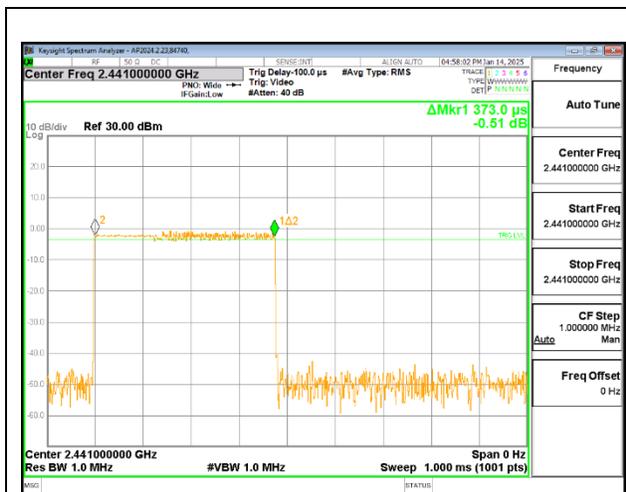
NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH3



NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH5

9.5.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION

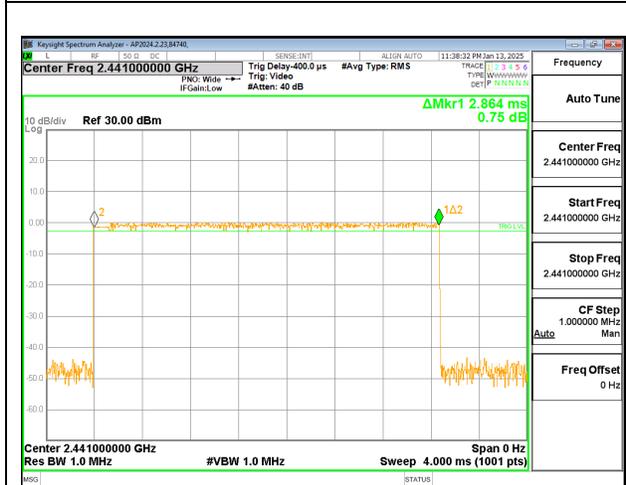
DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
GFSK Normal Mode					
DH1	0.373	32	0.1194	0.4	-0.2806
DH3	1.622	13	0.2109	0.4	-0.1891
DH5	2.864	12	0.3437	0.4	-0.0563
DH Packet	Pulse Width (sec)	Number of Pulses in 0.8 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
GFSK AFH Mode					
DH1	0.373	8	0.02984	0.4	-0.3702
DH3	1.622	3.25	0.05272	0.4	-0.3473
DH5	2.864	3	0.08592	0.4	-0.3141



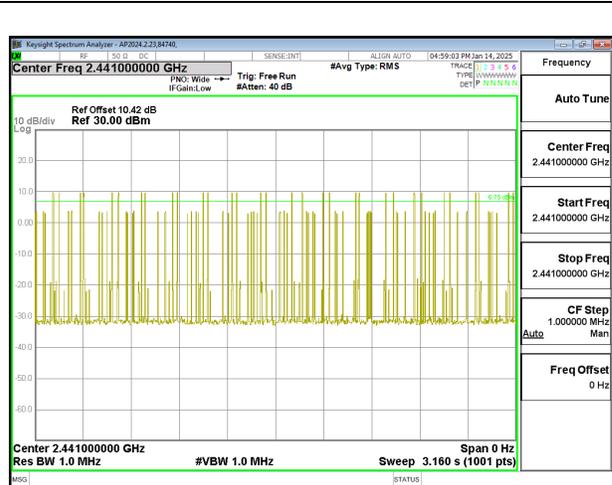
PULSE WIDTH – DH1



PULSE WIDTH – DH3



PULSE WIDTH – DH5



**NUMBER OF PULSES IN 3.16 SECOND
 OBSERVATION PERIOD – DH1**



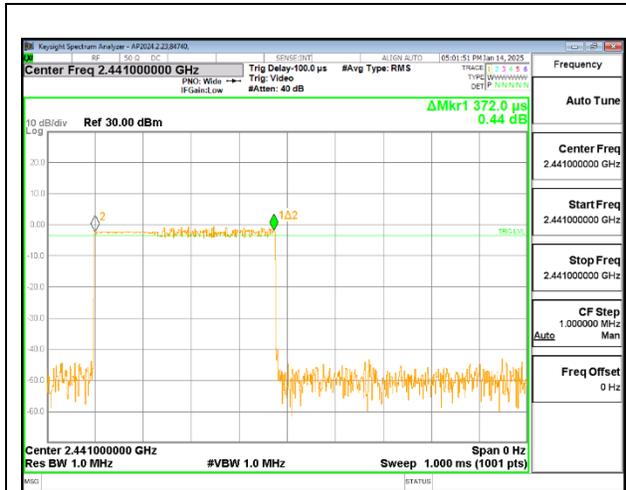
**NUMBER OF PULSES IN 3.16 SECOND
 OBSERVATION PERIOD – DH3**



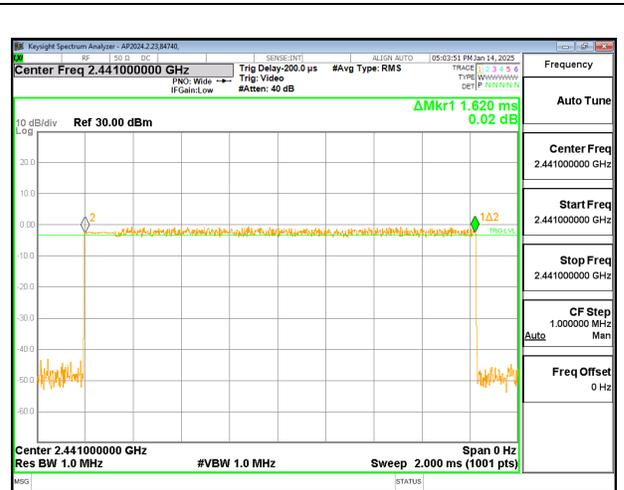
**NUMBER OF PULSES IN 3.16 SECOND
 OBSERVATION PERIOD – DH5**

9.5.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
8PSK Normal Mode					
DH1	0.372	32	0.1190	0.4	-0.2810
DH3	1.62	17	0.2754	0.4	-0.1246
DH5	2.868	11	0.3155	0.4	-0.0845
8PSK AFH Mode					
DH Packet	Pulse Width (sec)	Number of Pulses in 0.8 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
8PSK AFH Mode					
DH1	0.372	8	0.02976	0.4	-0.3702
DH3	1.62	4.25	0.06885	0.4	-0.3312
DH5	2.868	2.75	0.07887	0.4	-0.3211



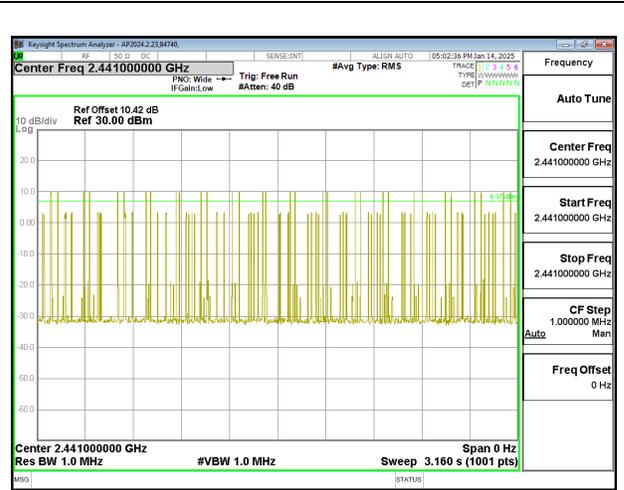
PULSE WIDTH – DH1



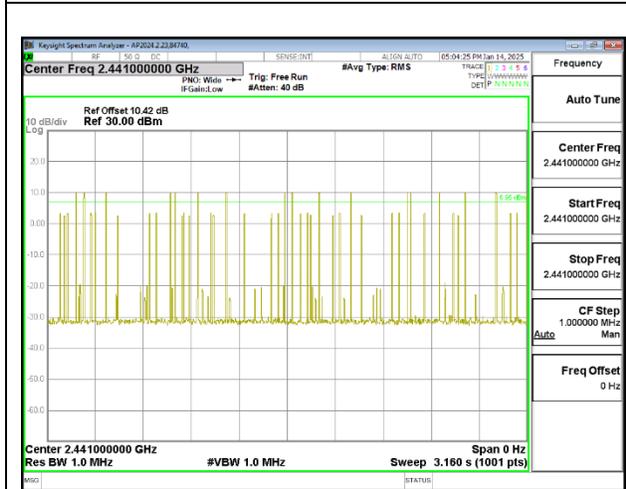
PULSE WIDTH – DH3



PULSE WIDTH – DH5



NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH1



NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH3



NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH5

9.6. OUTPUT POWER

LIMITS

§15.247 (b) (1)
RSS-247 (5.4) (b)

The maximum antenna gain is less than 6 dBi, therefore the limit is 30 dBm. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts

TEST PROCEDURE

Measurements performed using a wideband gated RF power meter.

The cable assembly insertion loss of 0.68 dB (including 0.68 dB cable) was entered as an offset in the power meter.

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

9.6.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

Tested By:	84740
Date:	2025-01-13

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	9.13	30	-20.87
Middle	2441	9.82	30	-20.18
High	2480	8.73	30	-21.27

9.6.2. BLUETOOTH ENHANCED DATA RATE DQPSK MODULATION

Tested By:	84740
Date:	2025-01-13

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	10.61	30	-19.39
Middle	2441	11.4	30	-18.6
High	2480	10.23	30	-19.77

9.6.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

Tested By:	84740
Date:	2025-01-13

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	10.5	20.969	-10.469
Middle	2441	11.14	20.969	-9.829
High	2480	10.11	20.969	-10.859

9.7. AVERAGE POWER

LIMITS

None; for reporting purposes only

TEST PROCEDURE

Measurements performed using a wideband gated RF power meter.

The cable assembly insertion loss of 0.68 dB (including 0.68 dB cable) was entered as an offset in the power meter.

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

9.7.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

Tested By:	84740
Date	2025-01-13

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	8.423
Middle	2441	9.133
High	2480	8.053

9.7.2. BLUETOOTH ENHANCED DATA RATE DQPSK MODULATION

Tested By:	84740
Date	2025-01-13

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	7.586
Middle	2441	8.362
High	2480	7.206

9.7.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

Tested By:	84740
Date	2025-01-13

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	7.358
Middle	2441	8.039
High	2480	6.961

9.8. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)
RSS-247 5.5

Limit = -20 dBc

TEST PROCEDURE

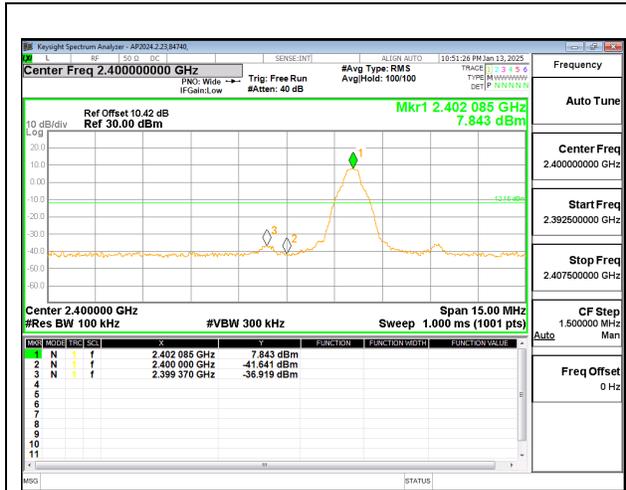
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

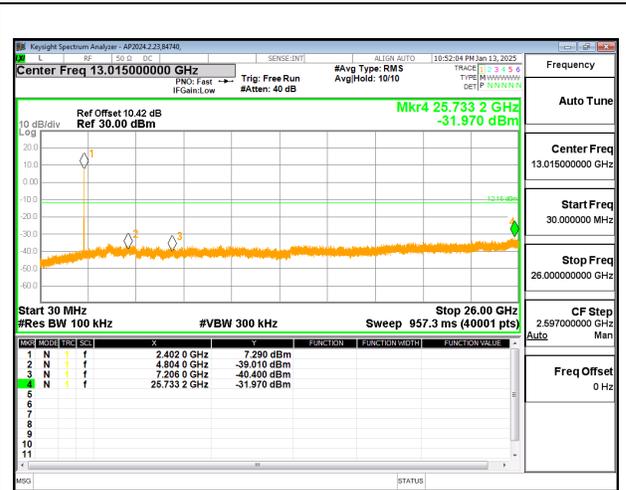
The bandedges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal hopping and hopping modes.

9.8.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

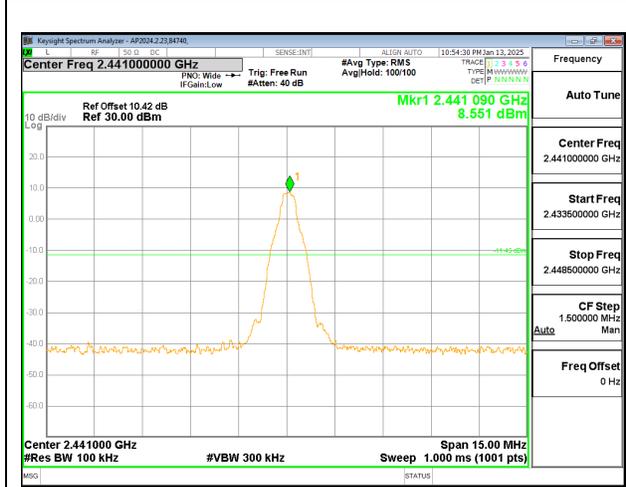
SPURIOUS EMISSIONS, NON-HOPPING



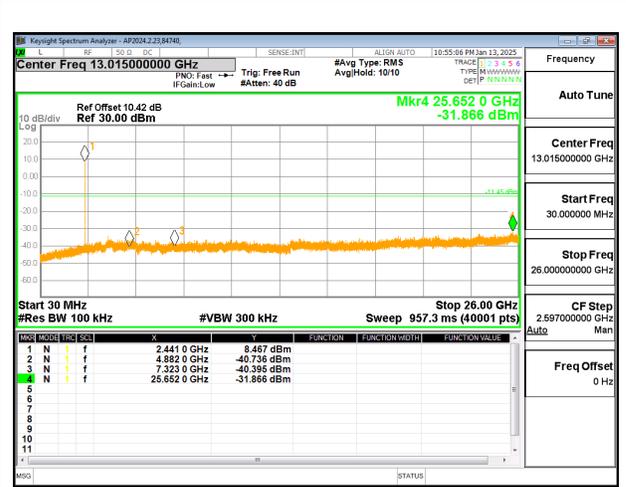
LOW CHANNEL BANDEDGE



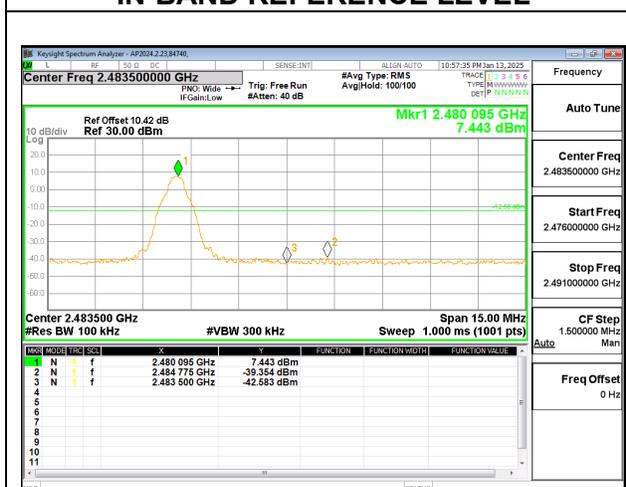
OUT-OF-BAND LOW CHANNEL



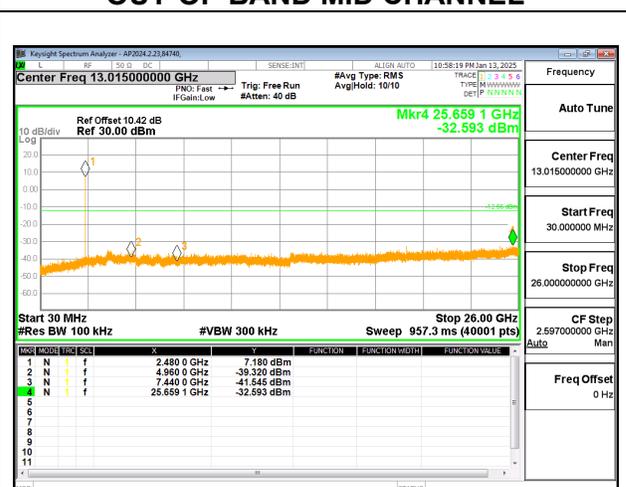
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



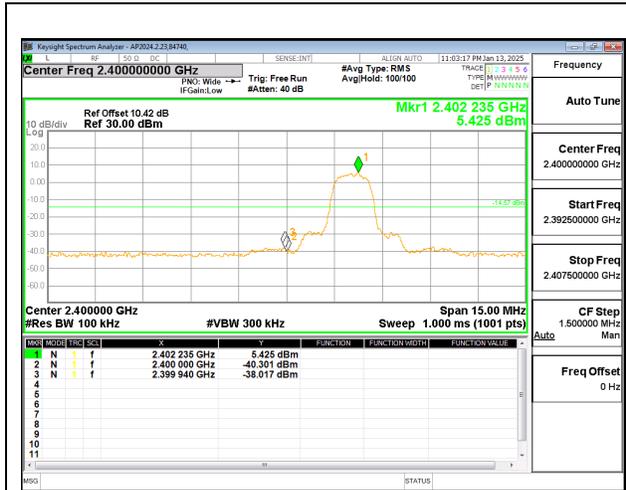
OUT-OF-BAND HIGH CHANNEL

SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

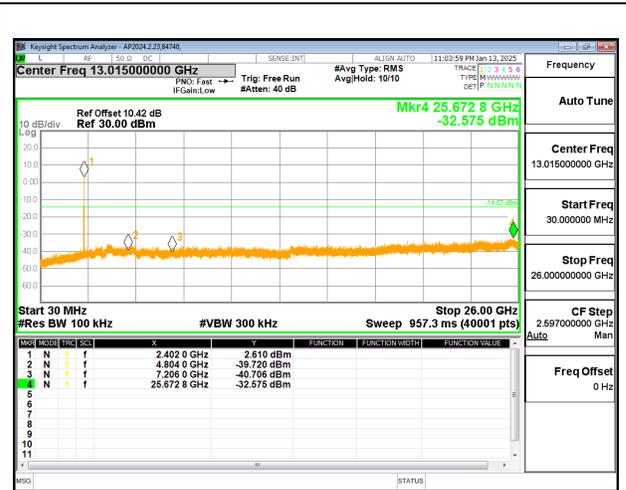


9.8.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION

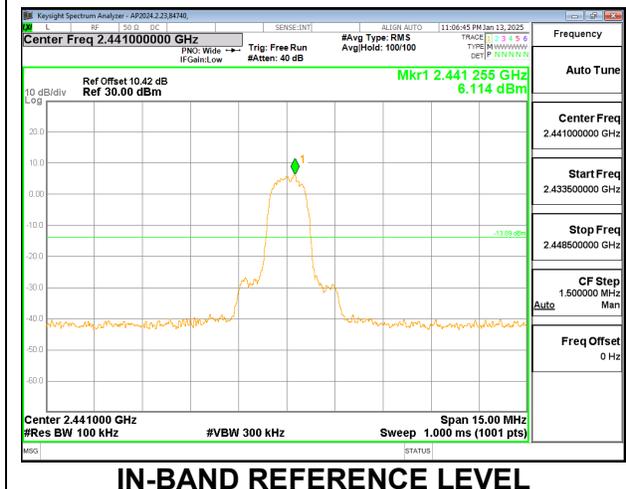
SPURIOUS EMISSIONS, NON-HOPPING



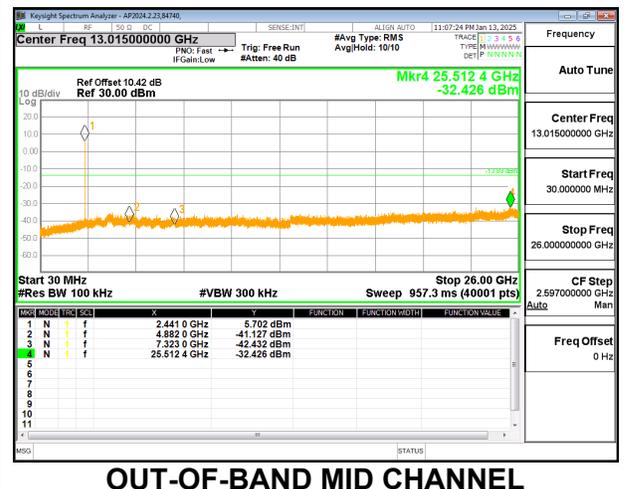
LOW CHANNEL BANDEDGE



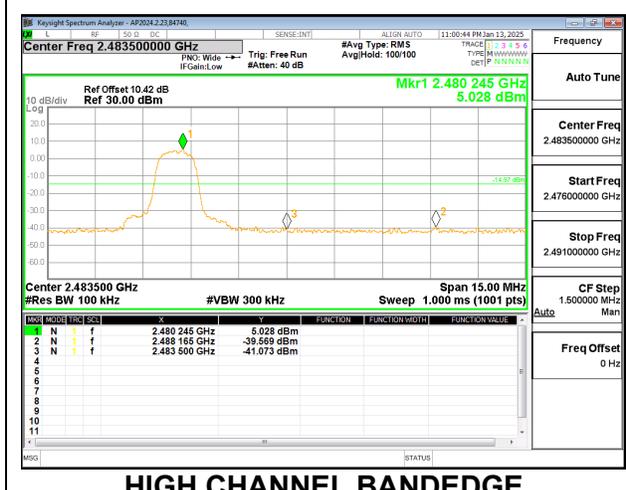
OUT-OF-BAND LOW CHANNEL



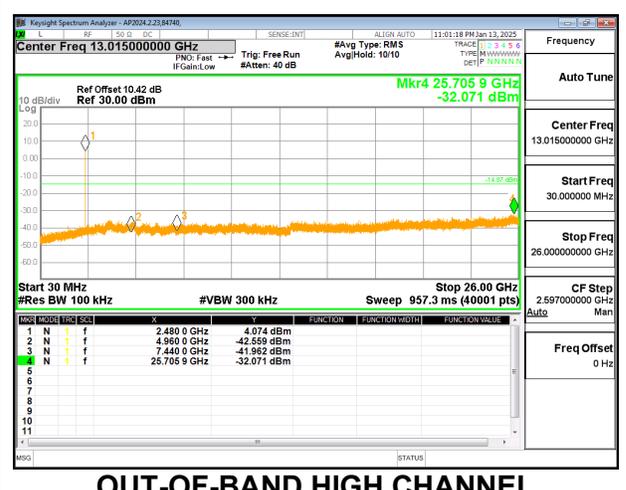
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



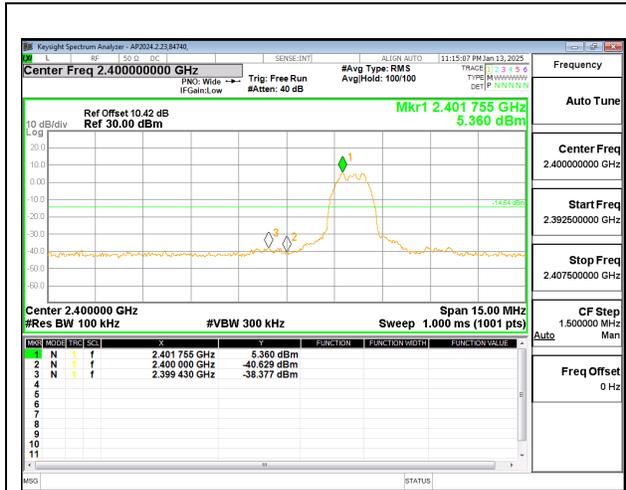
OUT-OF-BAND HIGH CHANNEL

SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

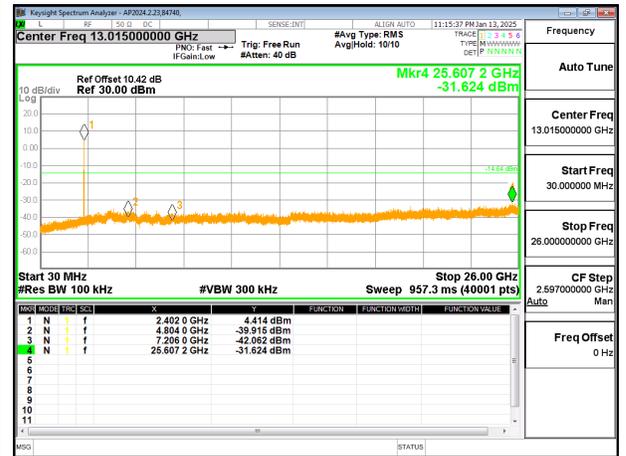


9.8.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

SPURIOUS EMISSIONS, NON-HOPPING



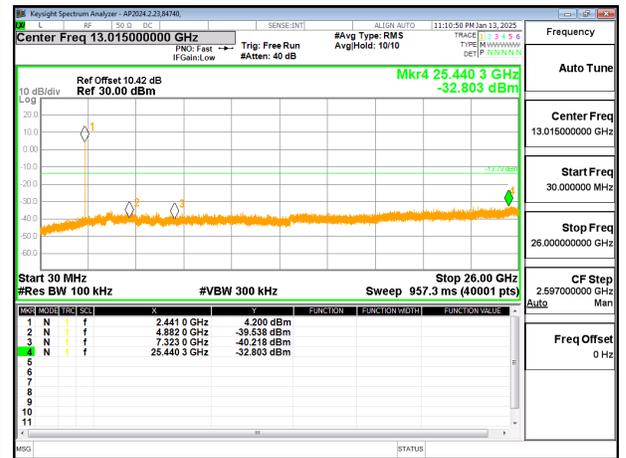
LOW CHANNEL BANDEDGE



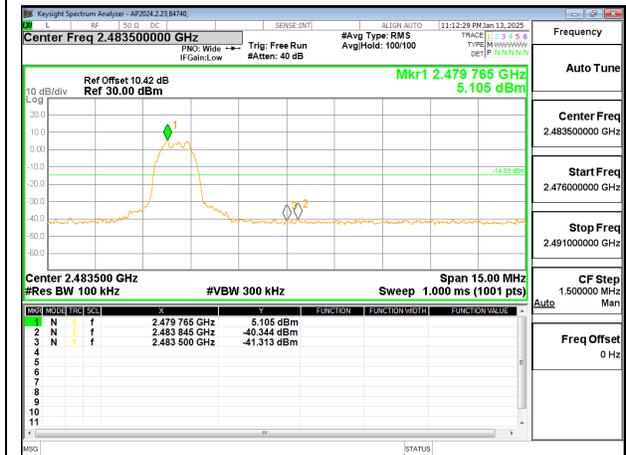
OUT-OF-BAND LOW CHANNEL



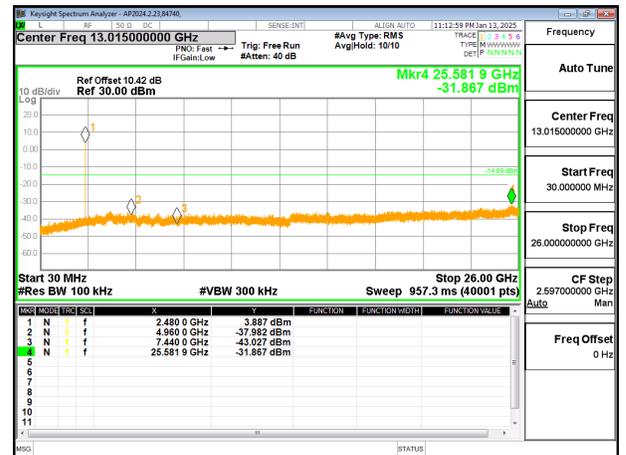
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



10. RADIATED TEST RESULTS

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

IC 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. Average measurements are calculated based on KDB 558074 D01 15.247 Meas Guidance v05r02.

The spectrum from 1 GHz to 18 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band. Below 1GHz and above 18GHz emissions, the channel with the highest output power 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.

KDB 558074 D01 15.247 Meas Guidance v05r02

Use of a duty cycle correction factor (DCCF) is permitted for calculating average radiated field strength emission levels for an FHSS device in 15.247. This DCCF can be applied when the field strength limit (e.g., within a Government Restricted band) and the conditions specified in Section 15.35(c) can be satisfied. The average radiated field strength is calculated by subtracting the DCCF from the maximum radiated field strength level as determined through measurement. The maximum radiated field strength level represents the worst-case (maximum amplitude) RMS measurement of the emission(s) during continuous transmission (i.e., not including any time intervals during which the transmitter is off or is transmitting at a reduced power level). It is also acceptable to apply the DCCF to a measurement performed with a peak detector instead of the specified RMS power averaging detector.

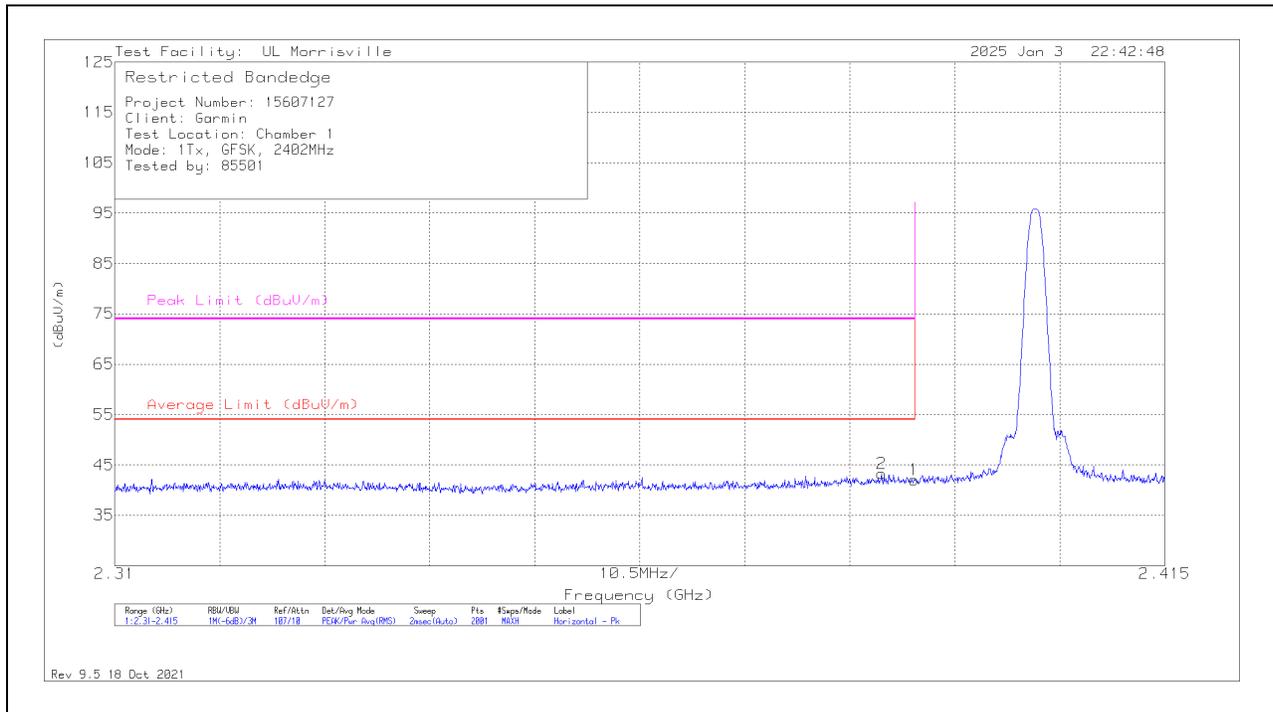
Note that Section 15.35(c) specifies that the DCCF shall represent the worst-case (greatest duty cycle) over any 100 msec transmission period.

10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	135143 (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	34.11	Pk	31.9	-24	0	42.01	-	-	74	-31.99	310	283	H
	*** 2.38996	34.11	Pk	31.9	-24	-24	18.01	54	-35.99	-	-	310	283	H
2	*** 2.3867	35.29	Pk	31.9	-23.9	0	43.29	-	-	74	-30.71	310	283	H
	*** 2.3867	35.29	Pk	31.9	-23.9	-24	19.29	54	-34.71	-	-	310	283	H

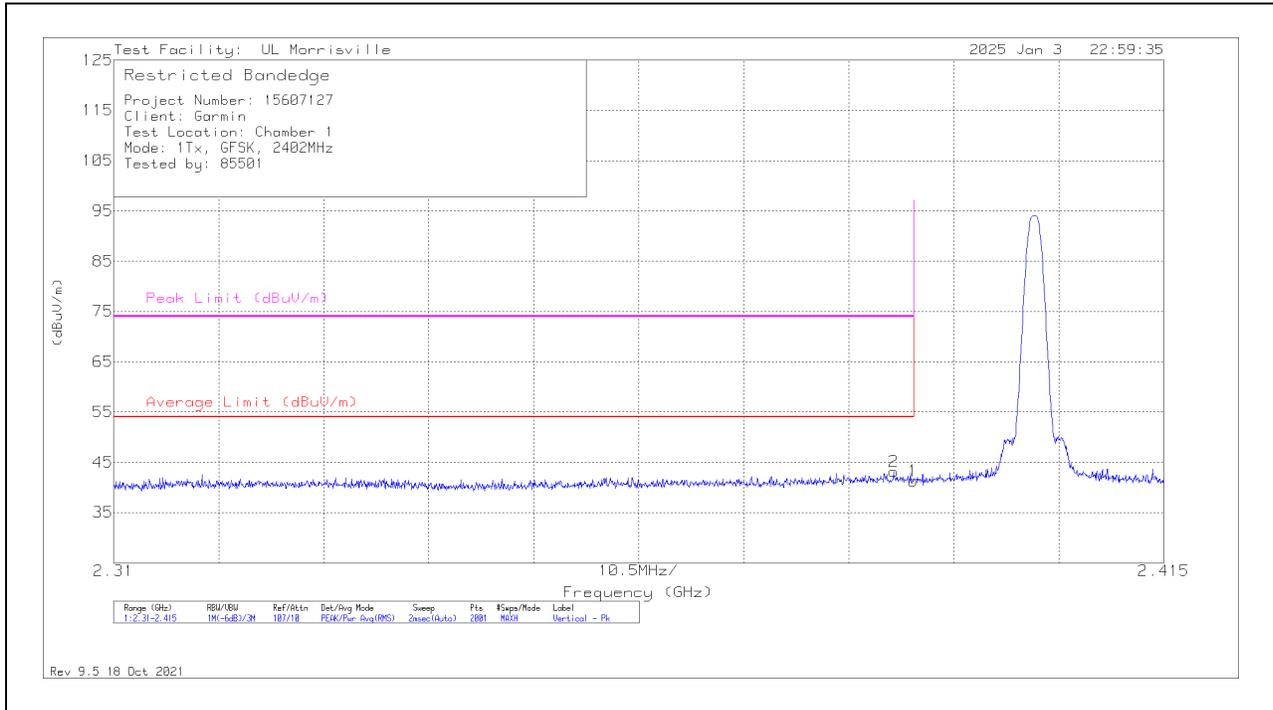
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

VERTICAL RESULT



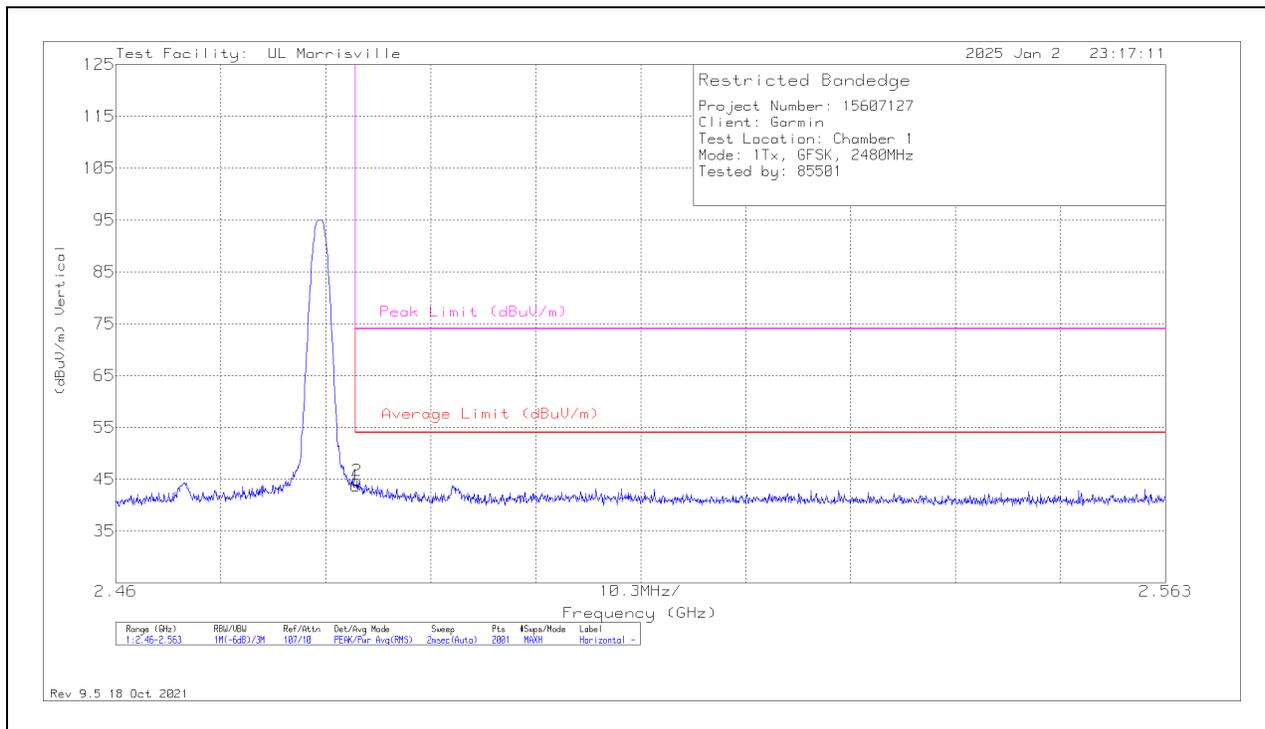
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	135143 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.38996	33.43	Pk	31.9	-24	0	41.33	-	-	74	-32.67	120	168	V
	* ** 2.38996	33.43	Pk	31.9	-24	-24	17.33	54	-36.67	-	-	120	168	V
2	* ** 2.38802	35.12	Pk	31.9	-23.9	0	43.12	-	-	74	-30.88	120	168	V
	* ** 2.38802	35.12	Pk	31.9	-23.9	-24	19.12	54	-34.88	-	-	120	168	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	135143 (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	35.17	Pk	32.2	-23.7	0	43.67	-	-	74	-30.33	333	332	H
	* ** 2.48354	35.17	Pk	32.2	-23.7	-24	19.67	54	-34.33	-	-	333	332	H
2	* ** 2.48369	36.21	Pk	32.2	-23.7	0	44.71	-	-	74	-29.29	333	332	H
	* ** 2.48369	36.21	Pk	32.2	-23.7	-24	20.71	54	-33.29	-	-	333	332	H

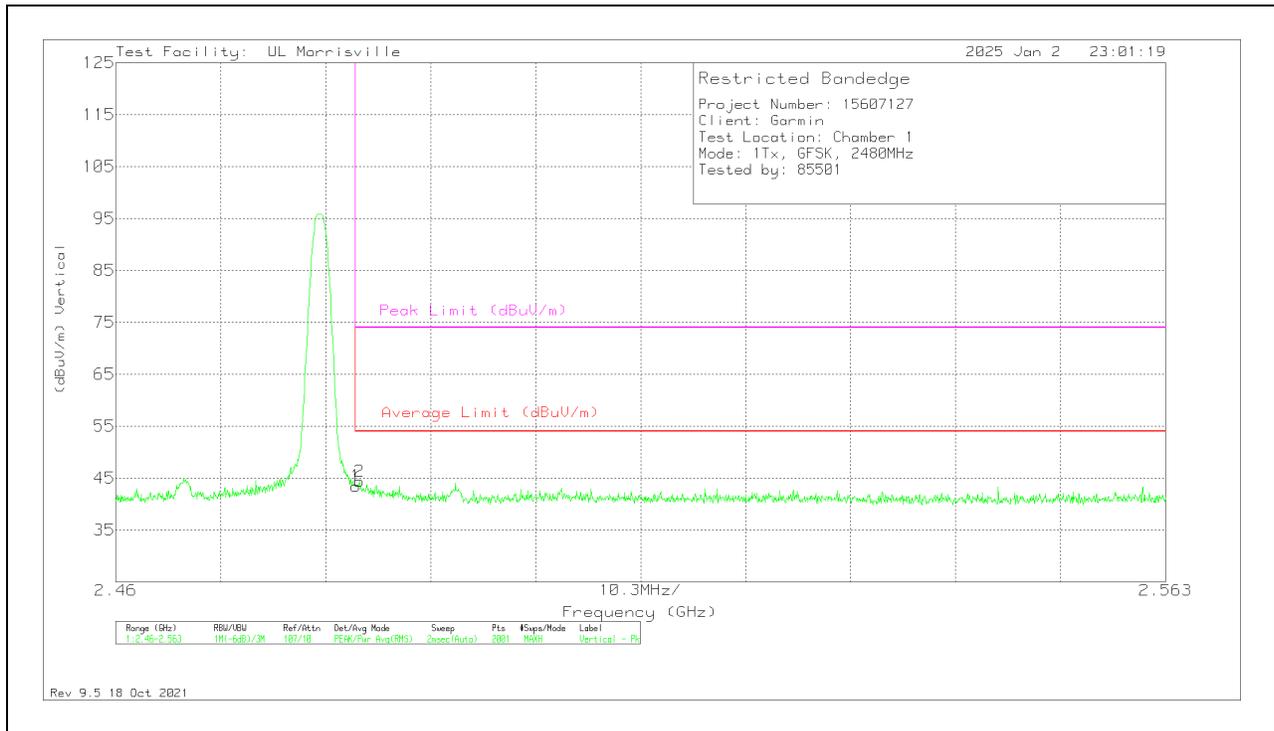
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

VERTICAL RESULT



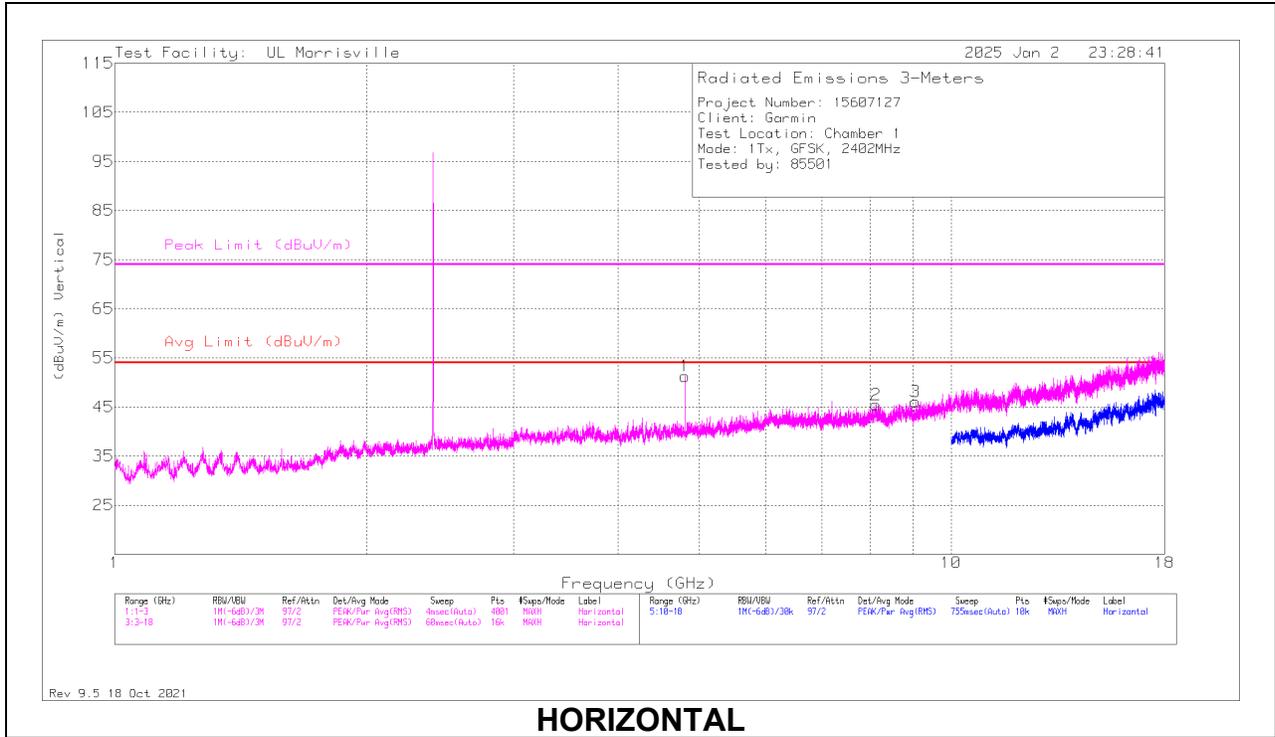
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	135143 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.48354	34.93	Pk	32.2	-23.7	0	43.43	-	-	74	-30.57	221	341	V
	* ** 2.48354	34.93	Pk	32.2	-23.7	-24	19.43	54	-34.57	-	-	221	341	V
2	* ** 2.4839	35.85	Pk	32.2	-23.7	0	44.35	-	-	74	-29.65	221	341	V
	* ** 2.4839	35.85	Pk	32.2	-23.7	-24	20.35	54	-33.65	-	-	221	341	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector

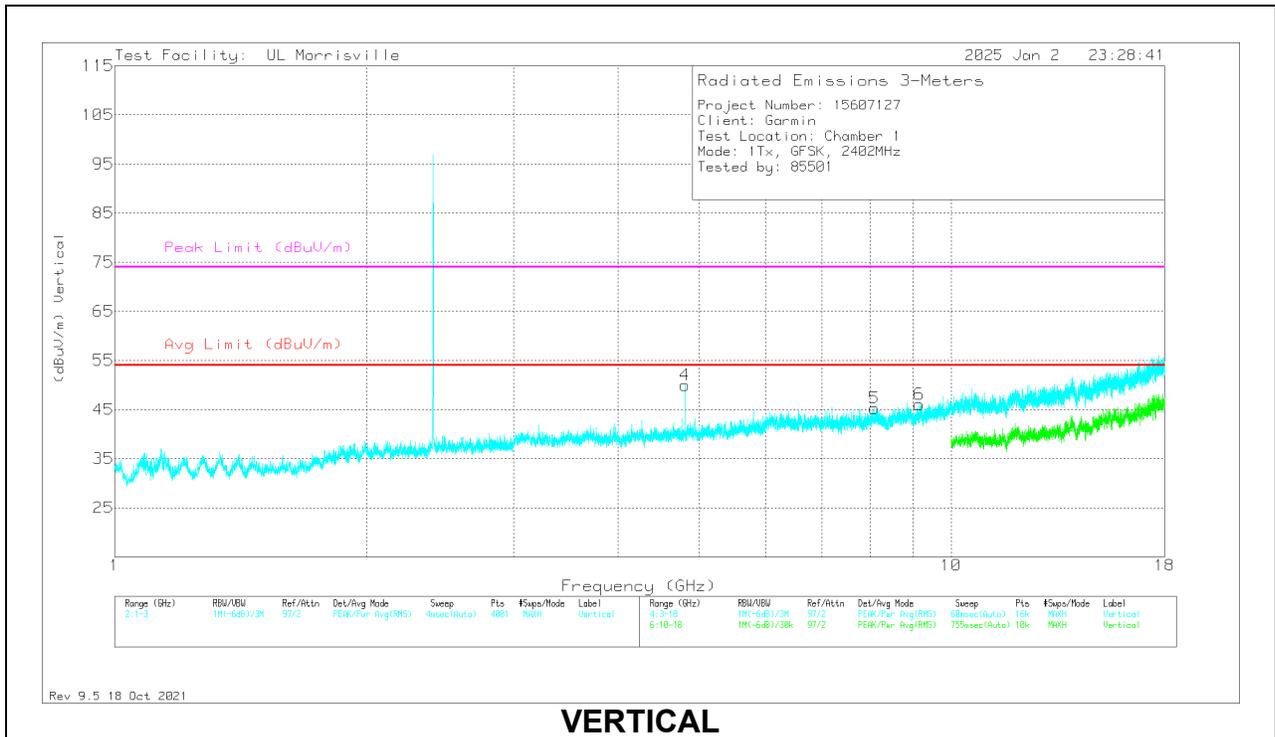
Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	135143 (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	*** 4.80372	63.96	PK2	33.9	-45.6	0	52.26	-	-	74	-21.74	165	155	H
	*** 4.80372	63.96	PK2	33.9	-45.6	-24	28.26	54	-25.74	-	-	165	155	H
2	*** 8.13188	50.64	Pk	35.9	-41.1	0	45.44	54	-8.56	74	-28.56	0-360	200	H
3	*** 9.06469	50.67	Pk	35.8	-40.4	0	46.07	54	-7.93	74	-27.93	0-360	101	H
4	*** 4.80363	58.15	PK2	33.9	-45.6	0	46.45	-	-	74	-27.55	204	169	V
	*** 4.80363	58.15	PK2	33.9	-45.6	-24	22.45	54	-31.55	-	-	204	169	V
5	*** 8.1	50.66	Pk	35.9	-41.3	0	45.26	54	-8.74	74	-28.74	0-360	200	V
6	*** 9.15656	50.33	Pk	35.9	-40.2	0	46.03	54	-7.97	74	-27.97	0-360	200	V

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

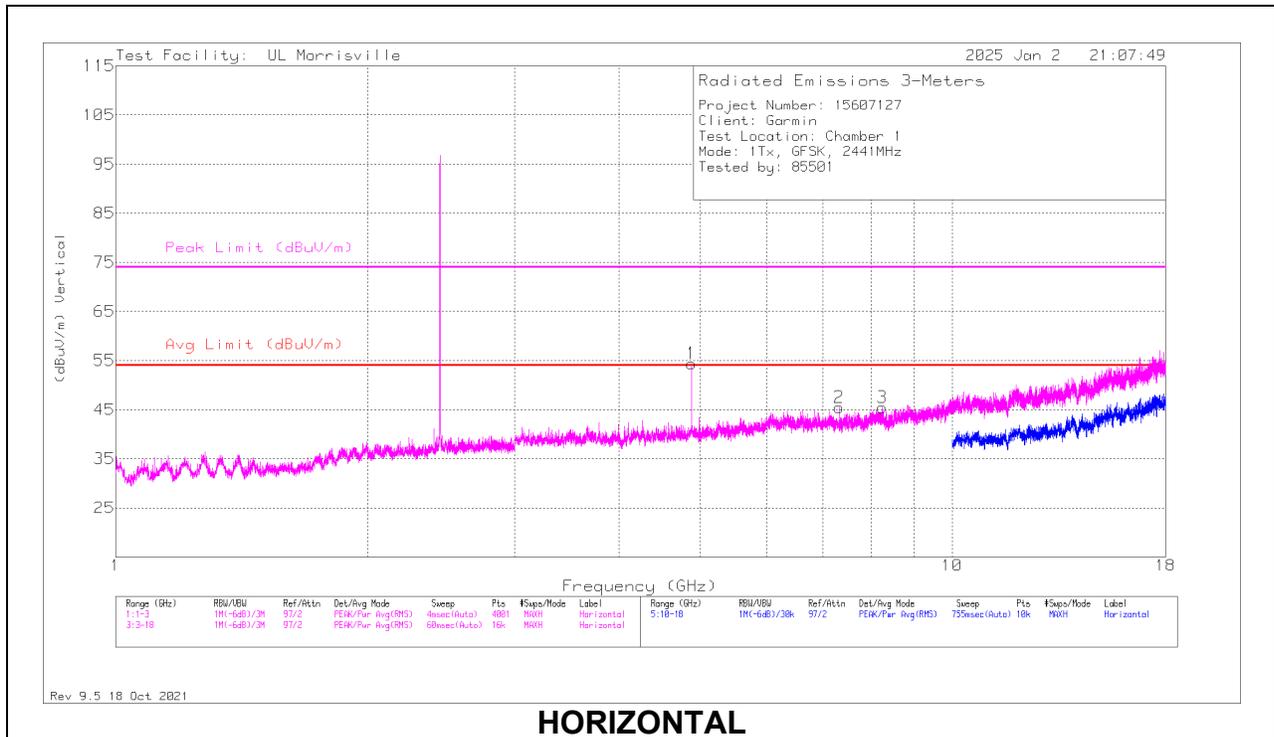
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

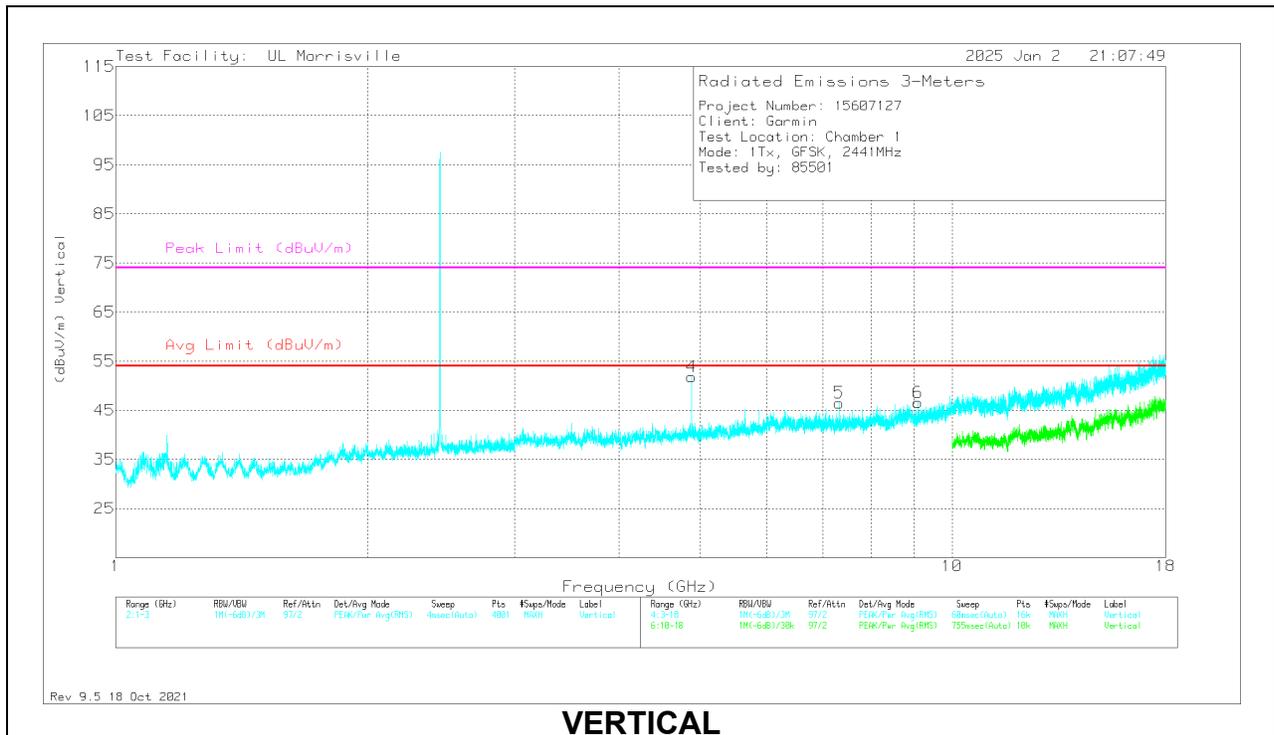
PK2 - Maximum Peak

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	135143 (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	*** 4.88228	66.87	PK2	34	-44.7	0	56.17	-	-	74	-17.83	163	152	H
	*** 4.88228	66.87	PK2	34	-44.7	-24	32.17	54	-21.83	-	-	163	152	H
2	*** 7.32281	51.96	Pk	35.4	-41.9	0	45.46	54	-8.54	74	-28.54	0-360	200	H
3	*** 8.25094	50.36	Pk	35.9	-40.8	0	45.46	54	-8.54	74	-28.54	0-360	101	H
4	*** 4.88172	65.71	PK2	34	-44.7	0	55.01	-	-	74	-18.99	198	173	V
	*** 4.88172	65.71	PK2	34	-44.7	-24	31.01	54	-22.99	-	-	198	173	V
5	*** 7.32281	53	Pk	35.4	-41.9	0	46.5	54	-7.5	74	-27.5	0-360	101	V
6	*** 9.10688	50.88	Pk	35.9	-40.2	0	46.58	54	-7.42	74	-27.42	0-360	101	V

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

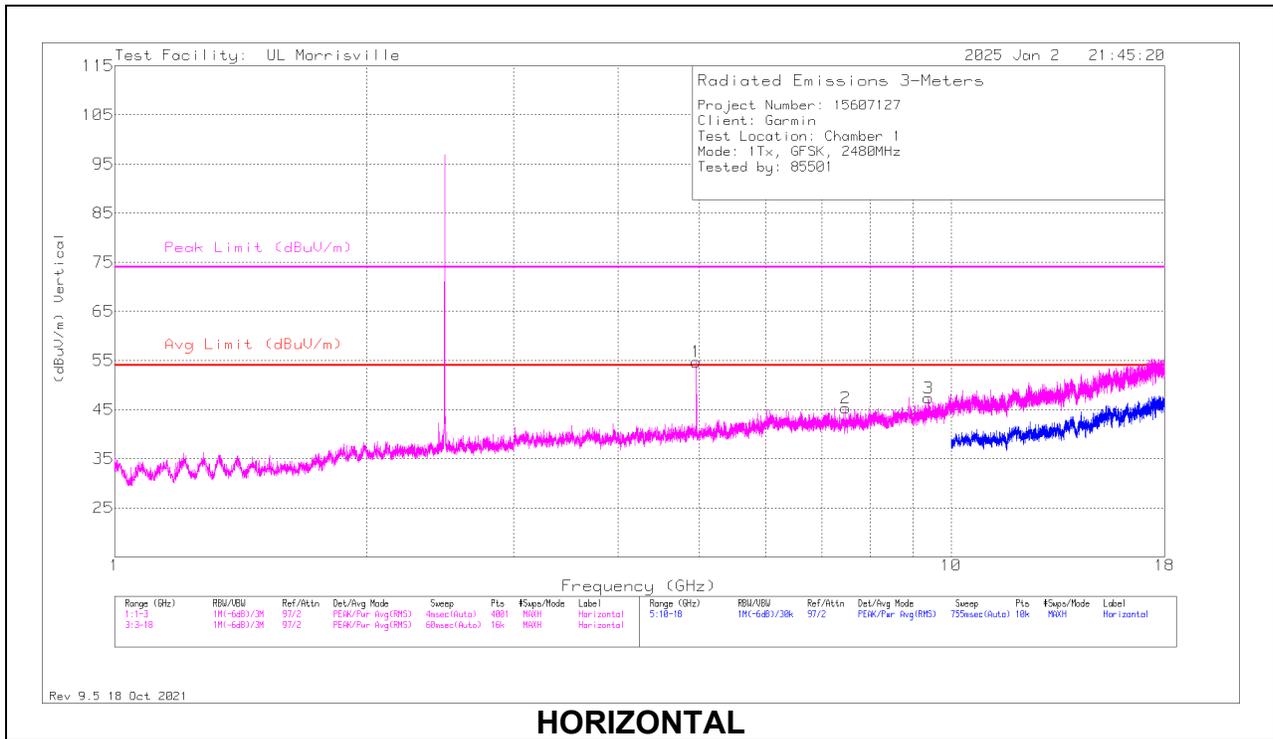
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

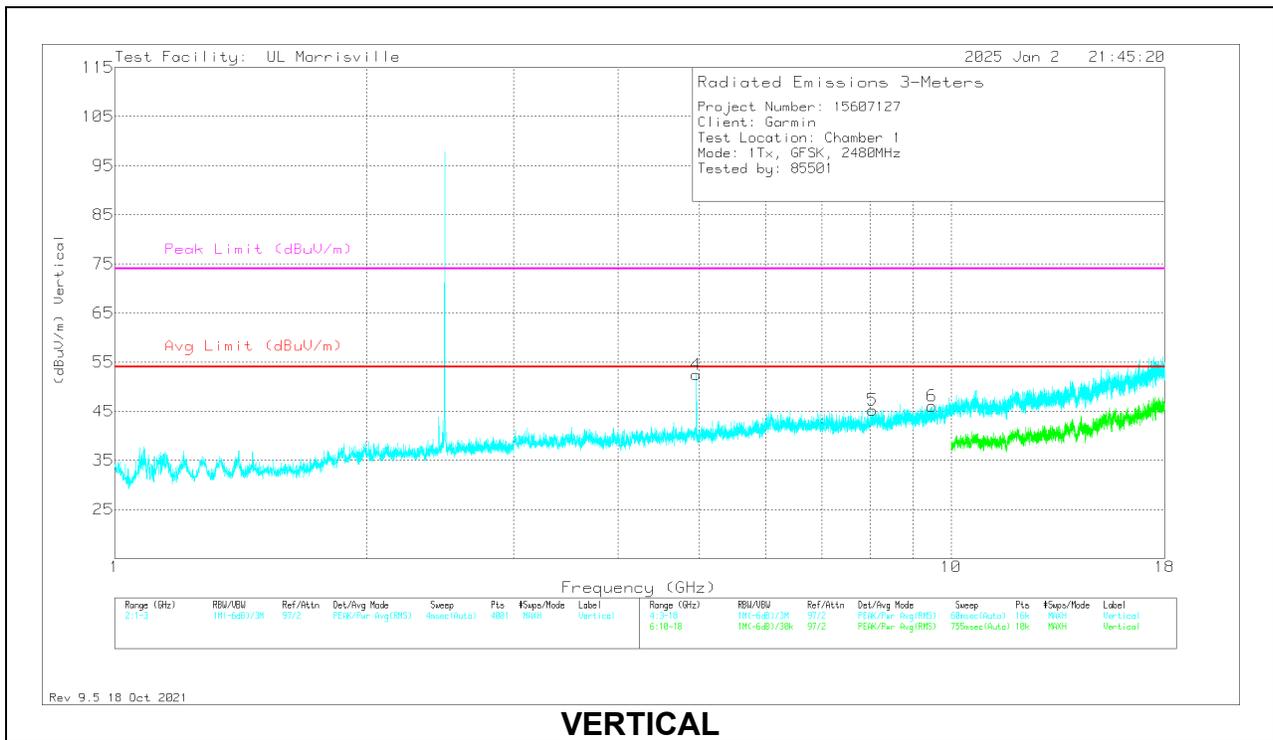
PK2 - Maximum Peak

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

Marker	Frequency (GHz)	Meter Reading (dBUV)	Det	135143 (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	*** 4.96027	67.34	PK2	34.2	-44.8	0	56.74	-	-	74	-17.26	167	110	H
	*** 4.96027	67.34	PK2	34.2	-44.8	-24	32.74	54	-21.26	-	-	167	110	H
2	*** 7.4775	50.99	Pk	35.5	-41.2	0	45.29	54	-8.71	74	-28.71	0-360	199	H
3	*** 9.39563	51.13	Pk	36.3	-40.1	0	47.33	54	-6.67	74	-26.67	0-360	101	H
4	*** 4.96034	64.23	PK2	34.2	-44.8	0	53.63	-	-	74	-20.37	163	262	V
	*** 4.96034	64.23	PK2	34.2	-44.8	-24	29.63	54	-24.37	-	-	163	262	V
5	** 8.055	50.03	Pk	35.9	-40.7	0	45.23	54	-8.77	74	-28.77	0-360	101	V
6	*** 9.4875	50.02	Pk	36.4	-40.4	0	46.02	54	-7.98	74	-27.98	0-360	200	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

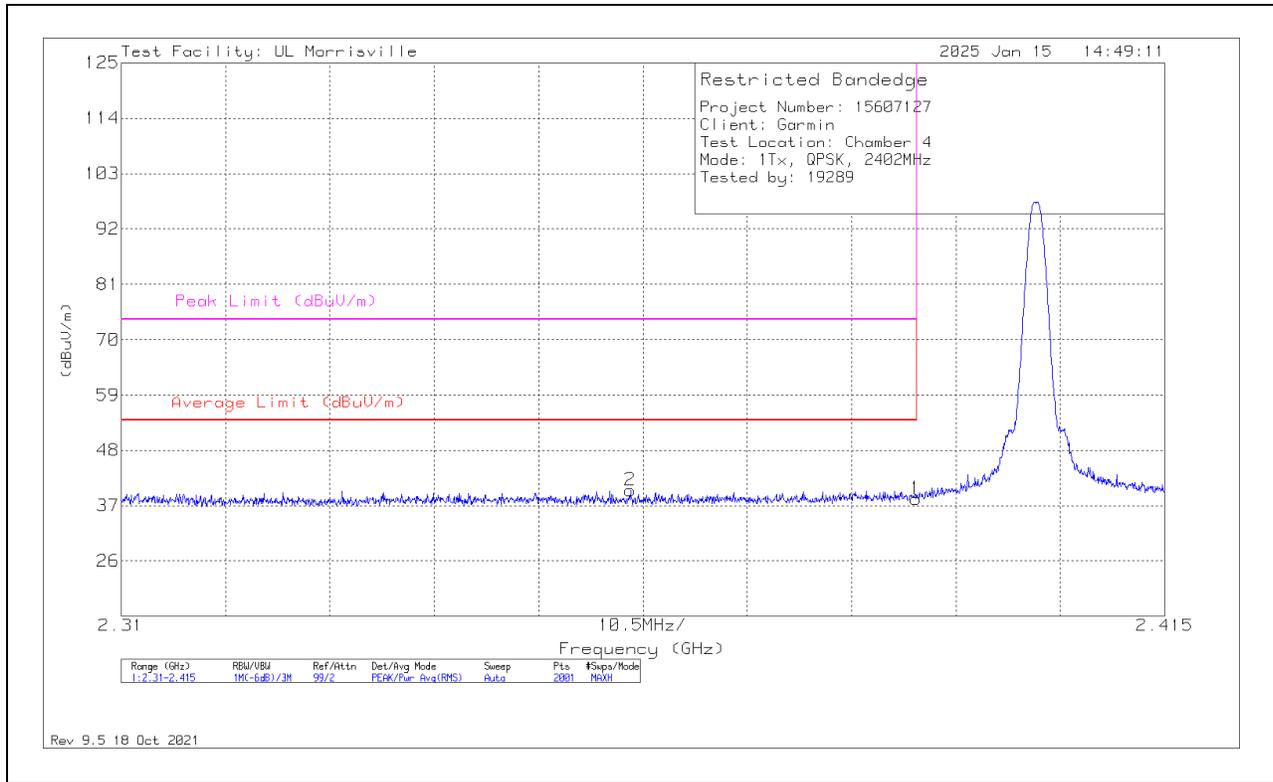
PK2 - Maximum Peak

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

10.1.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION

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	29.56	Pk	32	-23.2	0	38.36	-	-	74	-35.64	0	115	H
	*** 2.38996	29.56	Pk	32	-23.2	-24	14.36	54	-39.64	74	-35.64	0	115	H
2	*** 2.36124	31.14	Pk	31.9	-23	0	40.04	-	-	74	-33.96	0	115	H
	*** 2.36124	31.14	Pk	31.9	-23	-24	16.04	54	-37.96	74	-33.96	0	115	H

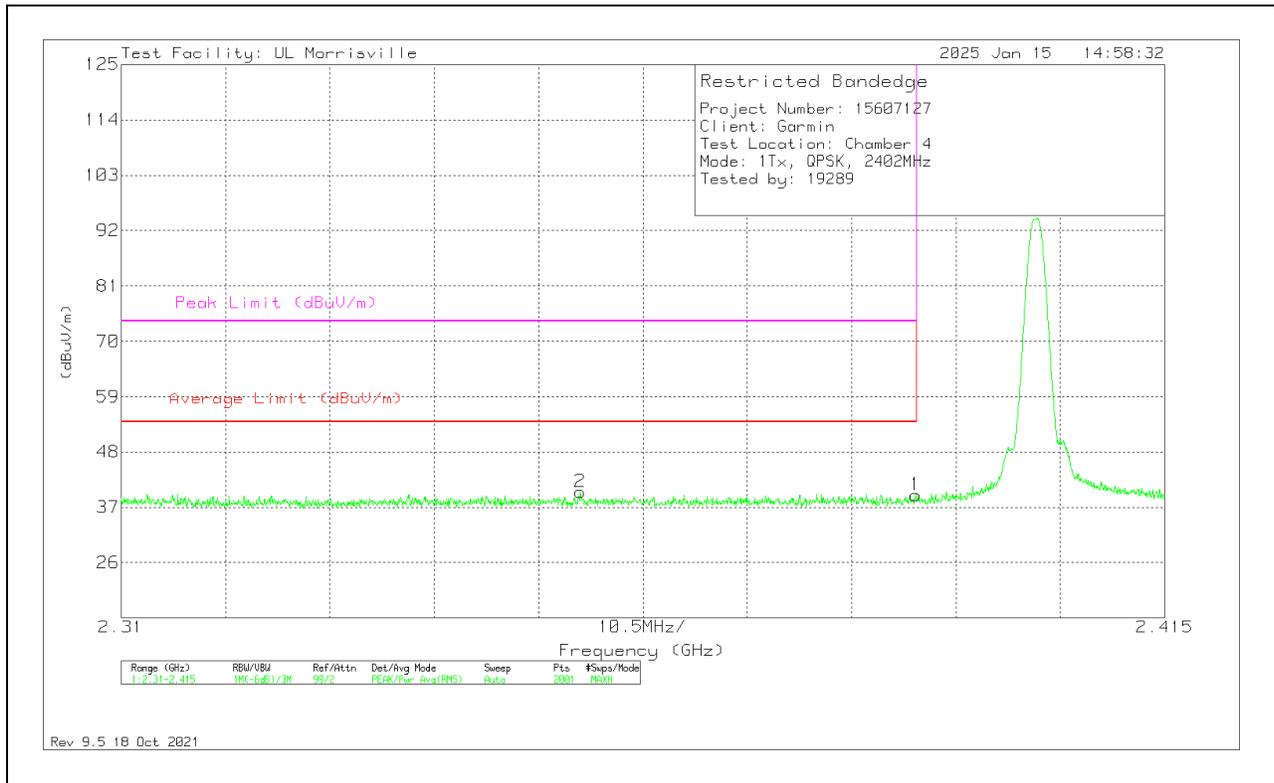
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

VERTICAL RESULT



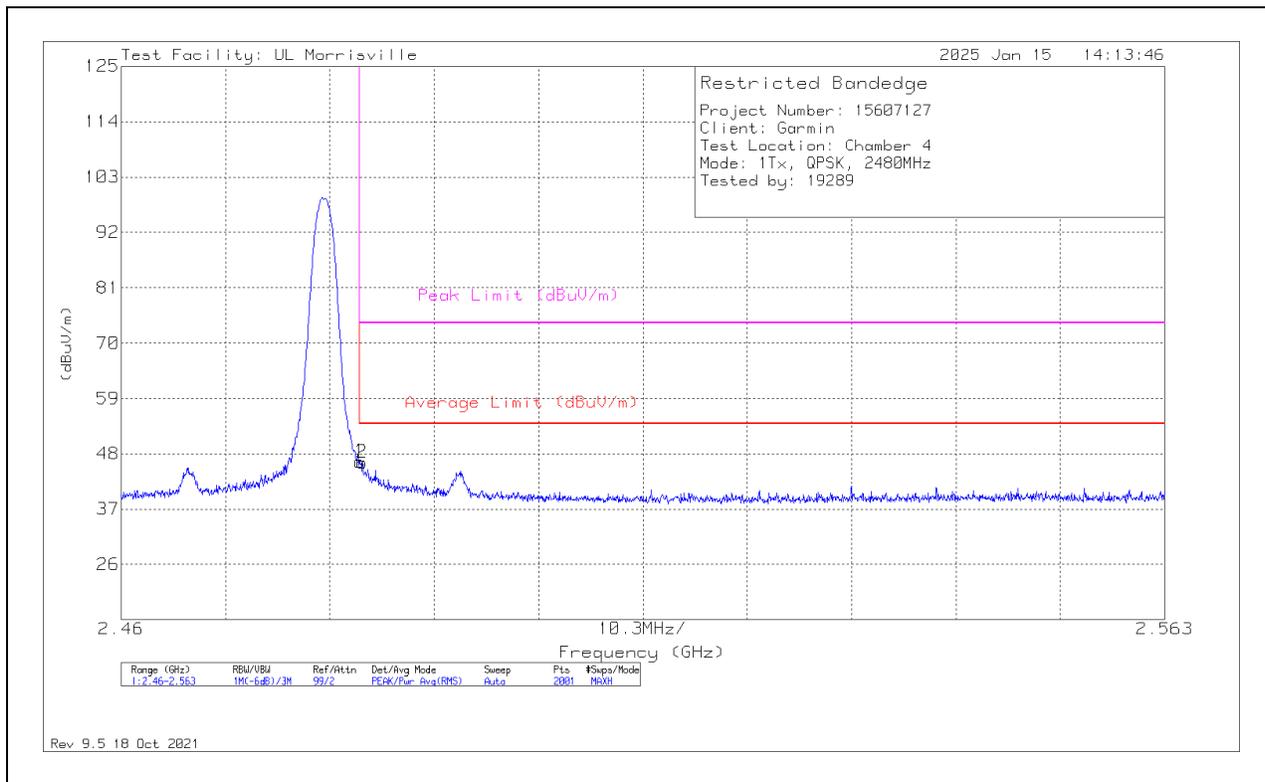
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.38996	30.69	Pk	32	-23.2	0	39.49	-	-	74	-34.51	22	106	V
	* ** 2.38996	30.69	Pk	32	-23.2	-24	15.49	54	-38.51	74	-34.51	22	106	V
2	* ** 2.3562	31.2	Pk	31.9	-23	0	40.1	-	-	74	-33.9	22	106	V
	* ** 2.3562	31.2	Pk	31.9	-23	-24	16.1	54	-37.9	74	-33.9	22	106	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

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	36.98	Pk	32.3	-22.8	0	46.48	-	-	74	-27.52	353	114	H
	* ** 2.48354	36.98	Pk	32.3	-22.8	-24	22.48	54	-31.52	74	-27.52	353	114	H
2	* ** 2.48379	36.8	Pk	32.3	-22.8	0	46.3	-	-	74	-27.7	353	114	H
	* ** 2.48379	36.8	Pk	32.3	-22.8	-24	22.3	54	-31.7	74	-27.7	353	114	H

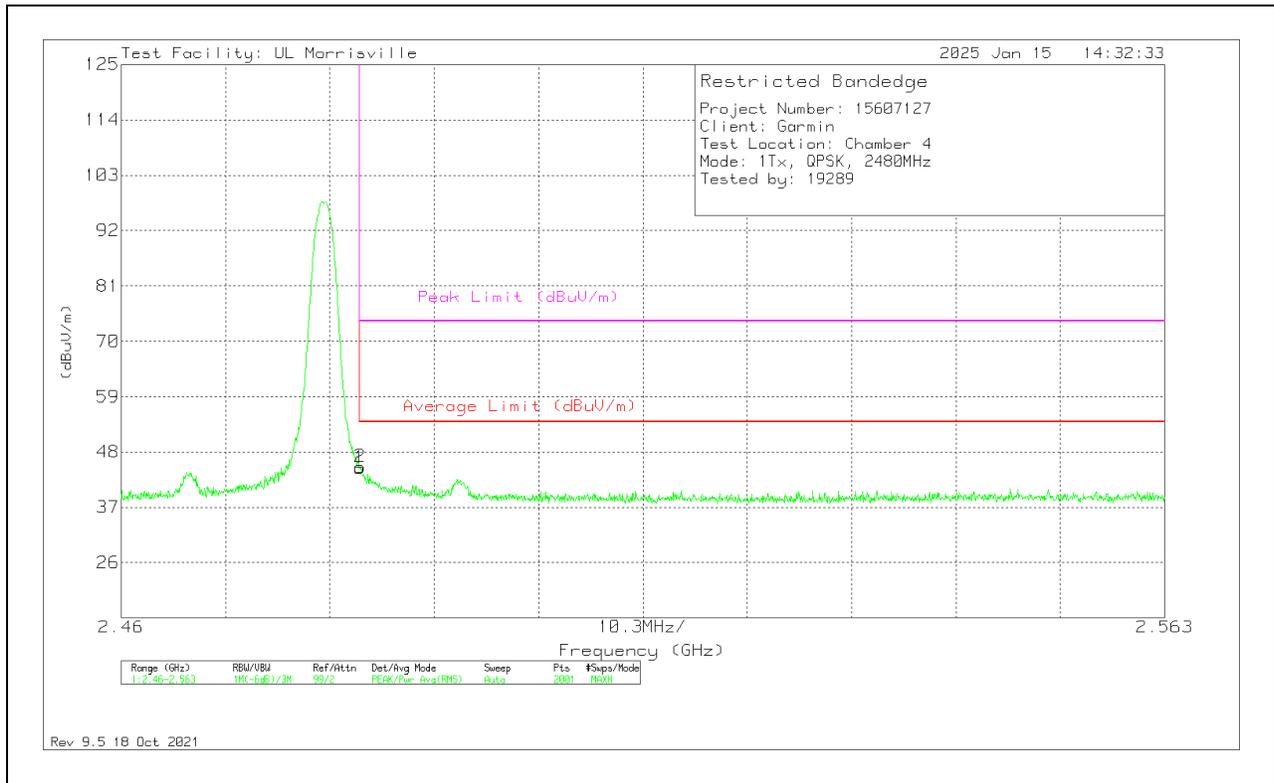
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

VERTICAL RESULT



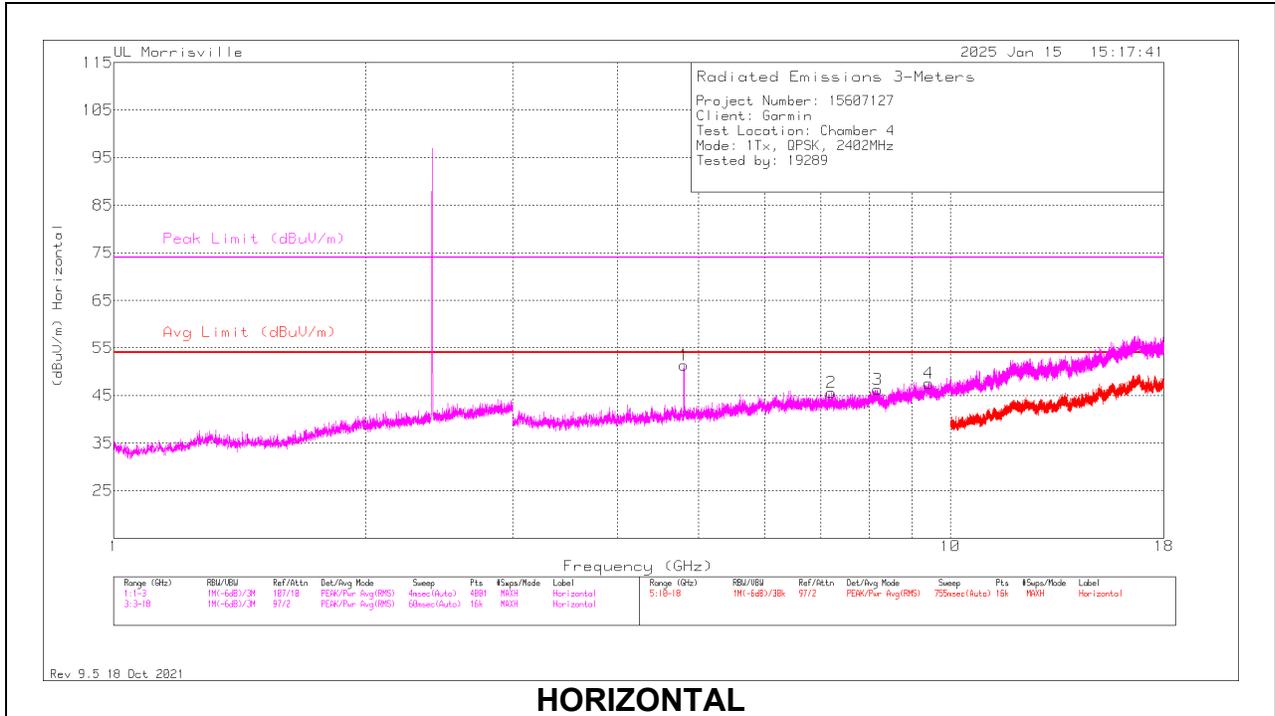
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.48354	35.3	Pk	32.3	-22.8	0	44.8	-	-	74	-29.2	196	131	V
	*** 2.48354	35.3	Pk	32.3	-22.8	-24	20.8	54	-33.2	74	-29.2	196	131	V
2	*** 2.48359	35.52	Pk	32.3	-22.8	0	45.02	-	-	74	-28.98	196	131	V
	*** 2.48359	35.52	Pk	32.3	-22.8	-24	21.02	54	-32.98	74	-28.98	196	131	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector

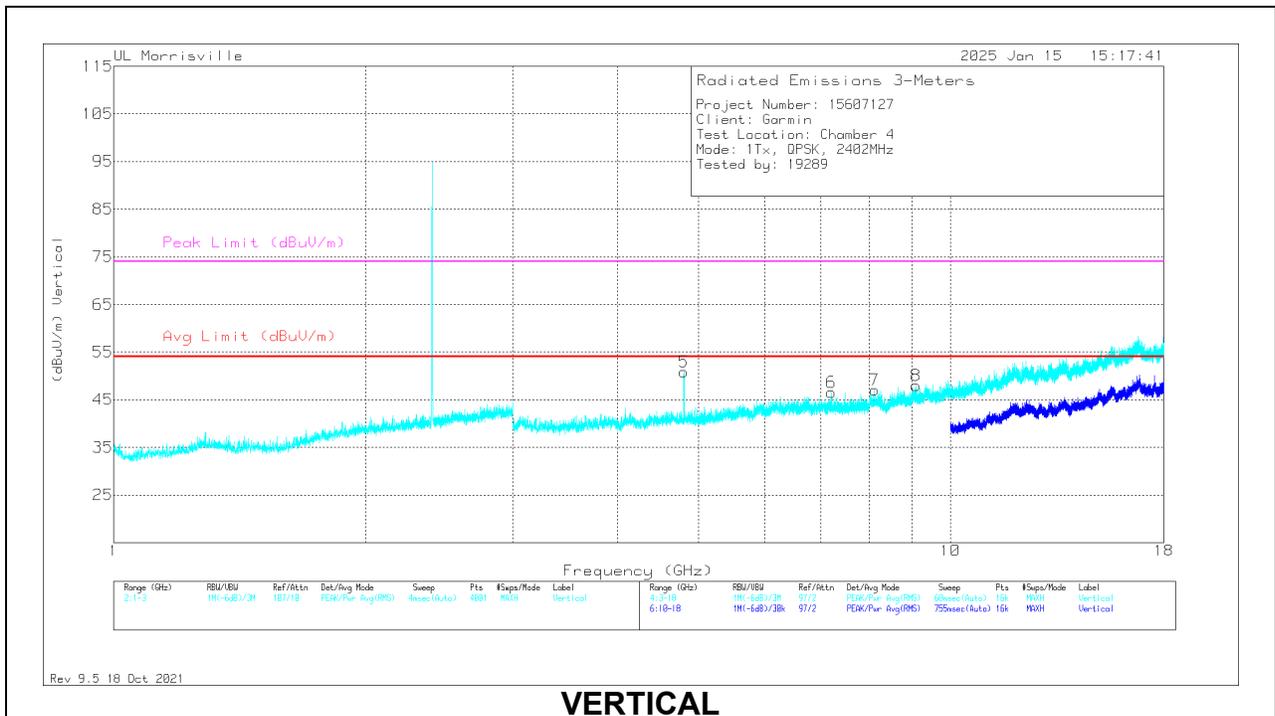
Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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	* ** 4.80435	50.88	PK2	34.1	-31.4	0	53.58	-	-	74	-20.42	68	114	H
	* ** 4.80435	50.88	PK2	34.1	-31.4	-24	29.58	54	-24.42	-	-	68	114	H
3	* ** 8.19188	36.65	Pk	35.8	-26.2	0	46.25	54	-7.75	74	-27.75	0-360	100	H
4	* ** 9.41625	36.12	Pk	36.6	-25.1	0	47.62	54	-6.38	74	-26.38	0-360	100	H
5	* ** 4.80363	48.27	PK2	34.1	-31.4	0	50.97	-	-	74	-23.03	257	163	V
	* ** 4.80363	48.27	PK2	34.1	-31.4	-24	26.97	54	-27.03	-	-	257	163	V
7	* ** 8.1225	38.07	Pk	35.8	-26.8	0	47.07	54	-6.93	74	-26.93	0-360	200	V
8	* ** 9.10969	36.19	Pk	36.3	-24.5	0	47.99	54	-6.01	74	-26.01	0-360	200	V
6	7.20563	38.63	Pk	35.6	-27.7	0	46.53	-	-	-	-	0-360	200	V
2	7.20656	37.87	Pk	35.6	-27.8	0	45.67	-	-	-	-	0-360	100	H

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

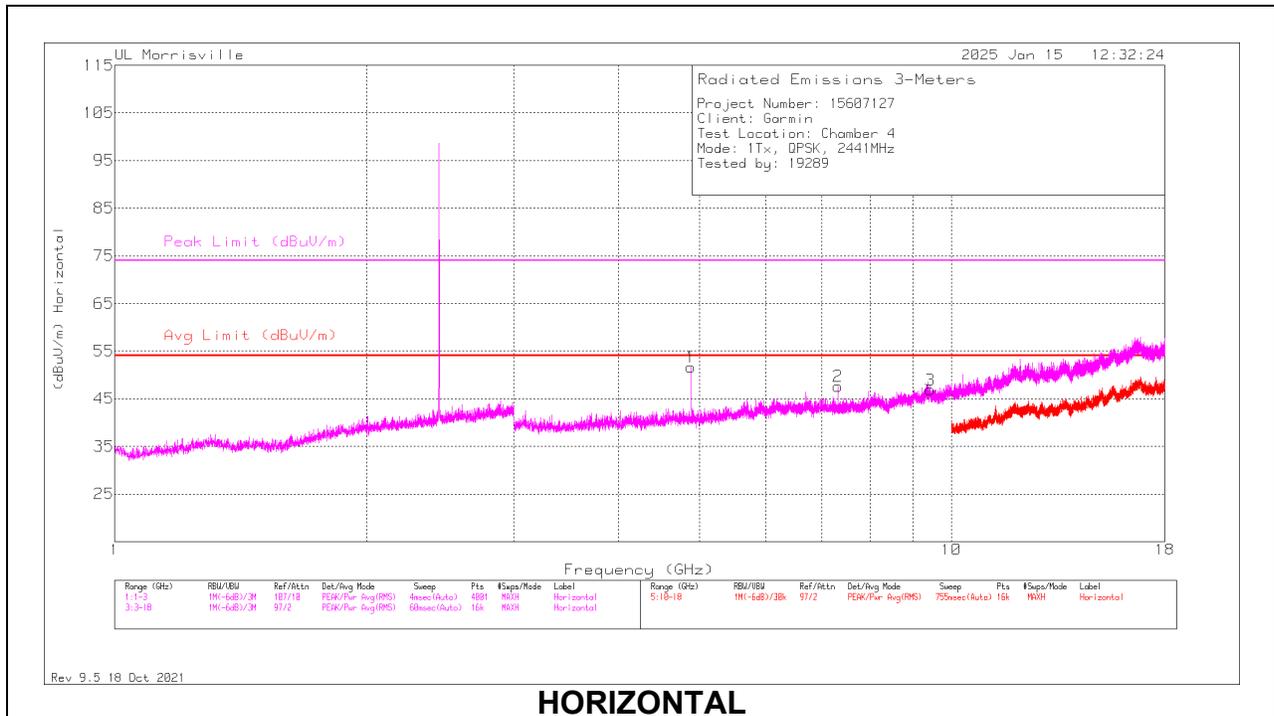
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

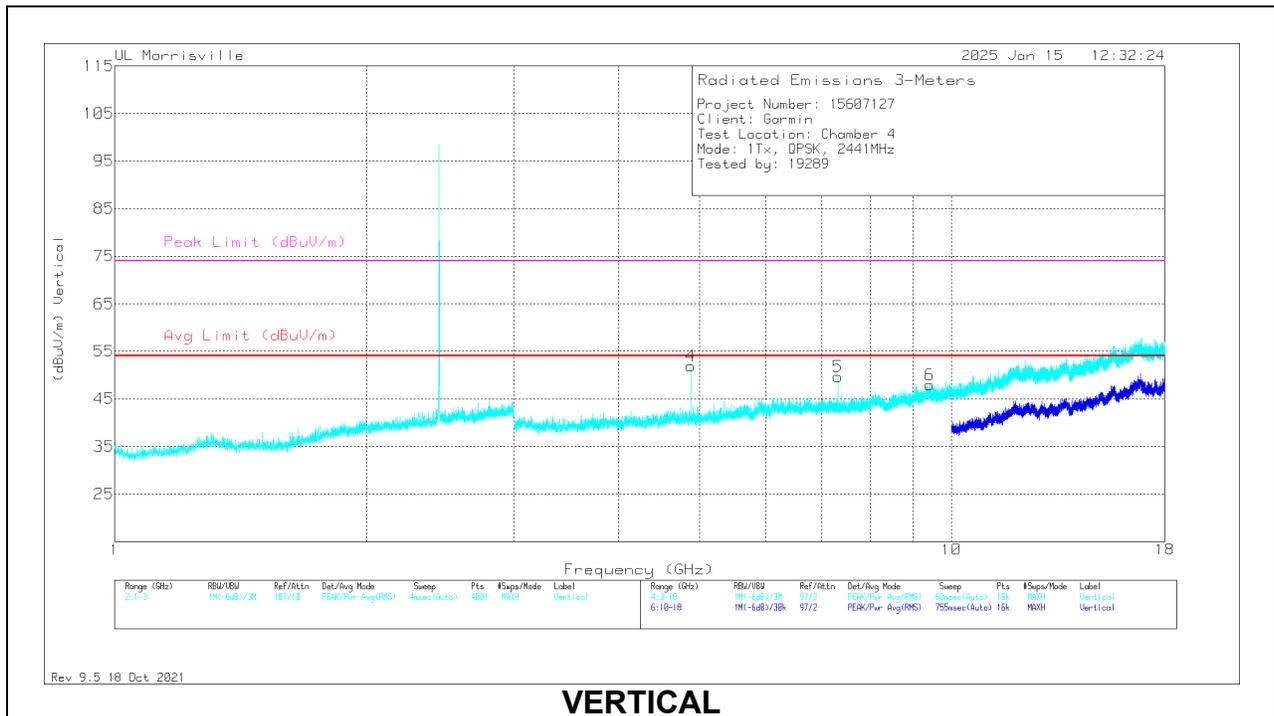
PK2 - Maximum Peak

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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	*** 4.88186	52.18	PK2	34	-31	0	55.18	-	-	74	-18.82	227	138	H
	*** 4.88186	52.18	PK2	34	-31	-24	31.18	54	-22.82	-	-	227	138	H
2	*** 7.32375	39.69	Pk	35.6	-27.7	0	47.59	54	-6.41	74	-26.41	0-360	100	H
3	*** 9.44344	35.27	PK	36.7	-25.1	0	46.87	54	-7.13	74	-27.13	0-360	100	H
4	*** 4.88179	49.41	PK2	34	-31	0	52.41	-	-	74	-21.59	258	185	V
	*** 4.88179	49.41	PK2	34	-31	-24	28.41	54	-25.59	-	-	258	185	V
5	*** 7.3234	43.71	PK2	35.6	-27.7	0	51.61	-	-	74	-22.39	4	124	V
	*** 7.3234	43.71	PK2	35.6	-27.7	-24	27.61	54	-26.39	-	-	4	124	V
6	*** 9.42978	36.9	PK2	36.7	-25.1	0	48.5	-	-	74	-25.5	77	170	V
	*** 9.42978	36.9	PK2	36.7	-25.1	-24	24.5	54	-29.5	-	-	77	170	V

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

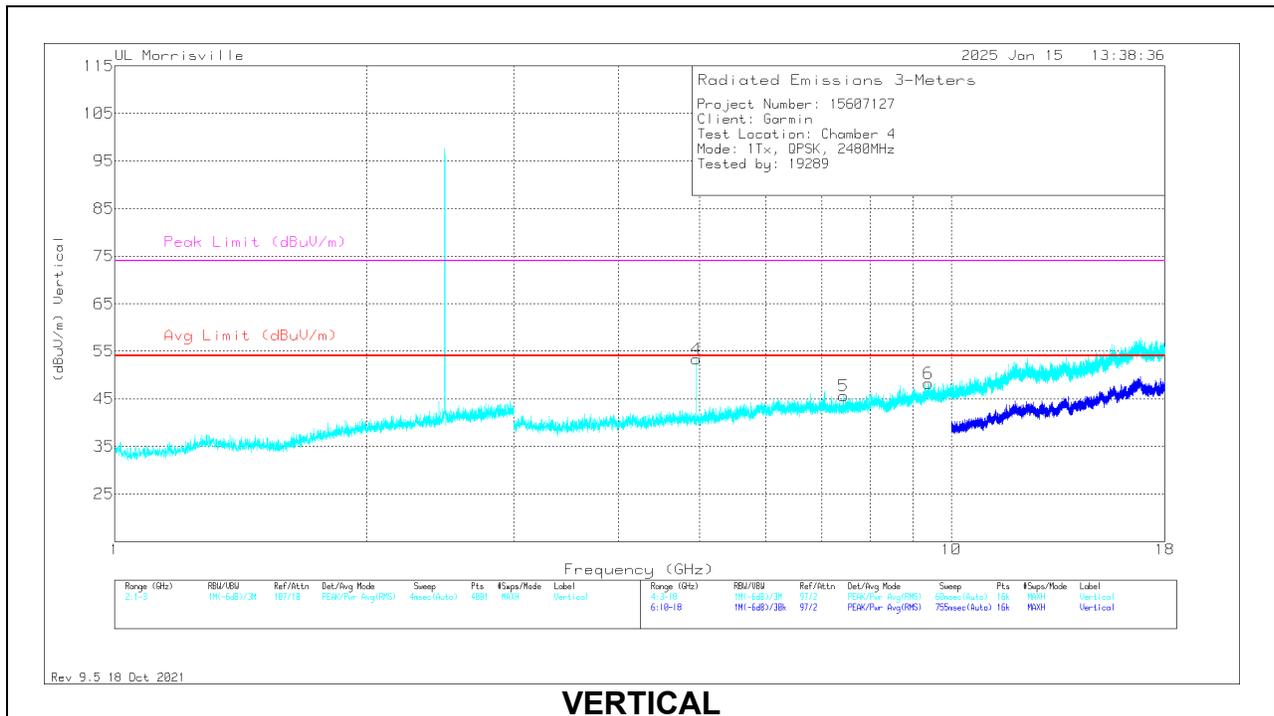
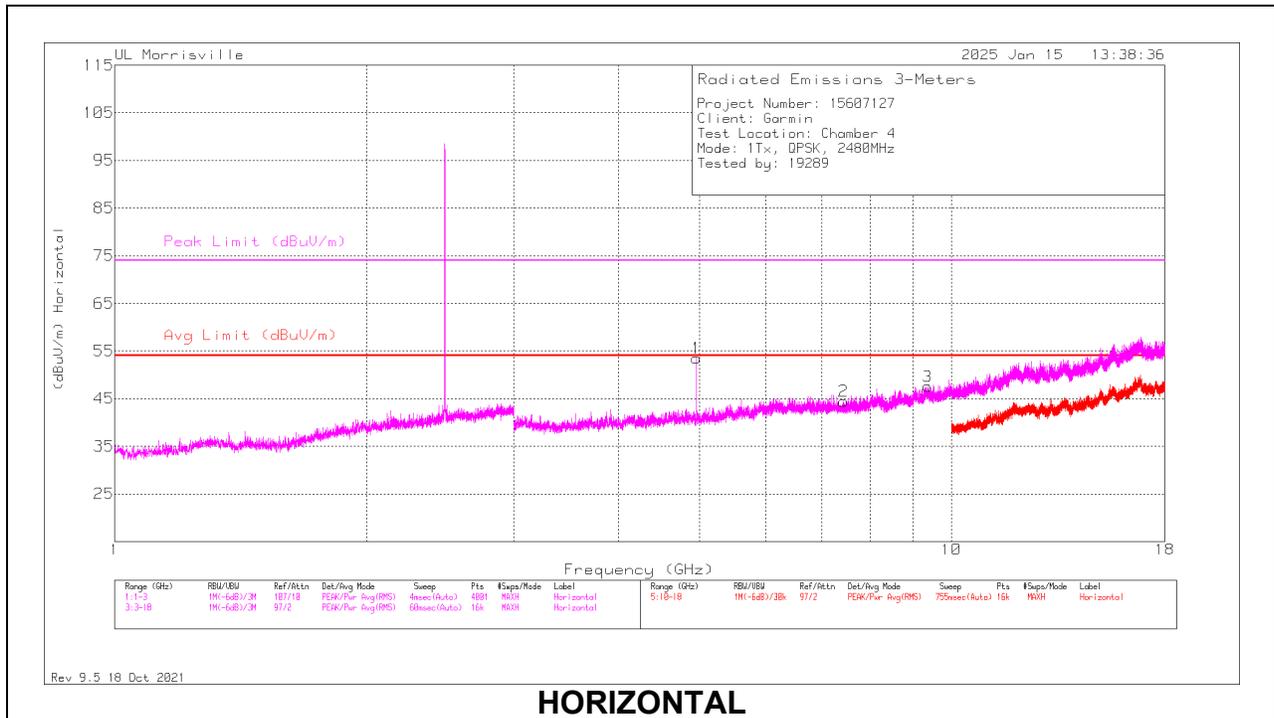
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

HIGH CHANNEL RESULTS



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	* ** 4.95981	52.38	PK2	33.9	-30.8	0	55.48	-	-	74	-18.52	215	119	H
	* ** 4.95981	52.38	PK2	33.9	-30.8	-24	31.48	54	-22.52	-	-	215	119	H
2	* ** 7.44094	36.68	Pk	35.7	-27.9	0	44.48	54	-9.52	74	-29.52	0-360	100	H
3	* ** 9.36656	35.63	Pk	36.5	-24.6	0	47.53	54	-6.47	74	-26.47	0-360	100	H
4	* ** 4.96029	52.45	PK2	33.9	-30.8	0	55.55	-	-	74	-18.45	229	110	V
	* ** 4.96029	52.45	PK2	33.9	-30.8	-24	31.55	54	-22.45	-	-	229	110	V
5	* ** 7.43906	37.79	Pk	35.7	-27.9	0	45.59	54	-8.41	74	-28.41	0-360	200	V
6	* ** 9.39351	37.05	PK2	36.6	-24.8	0	48.85	-	-	74	-25.15	60	281	V
	* ** 9.39351	37.05	PK2	36.6	-24.8	-24	24.85	54	-29.15	-	-	60	281	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

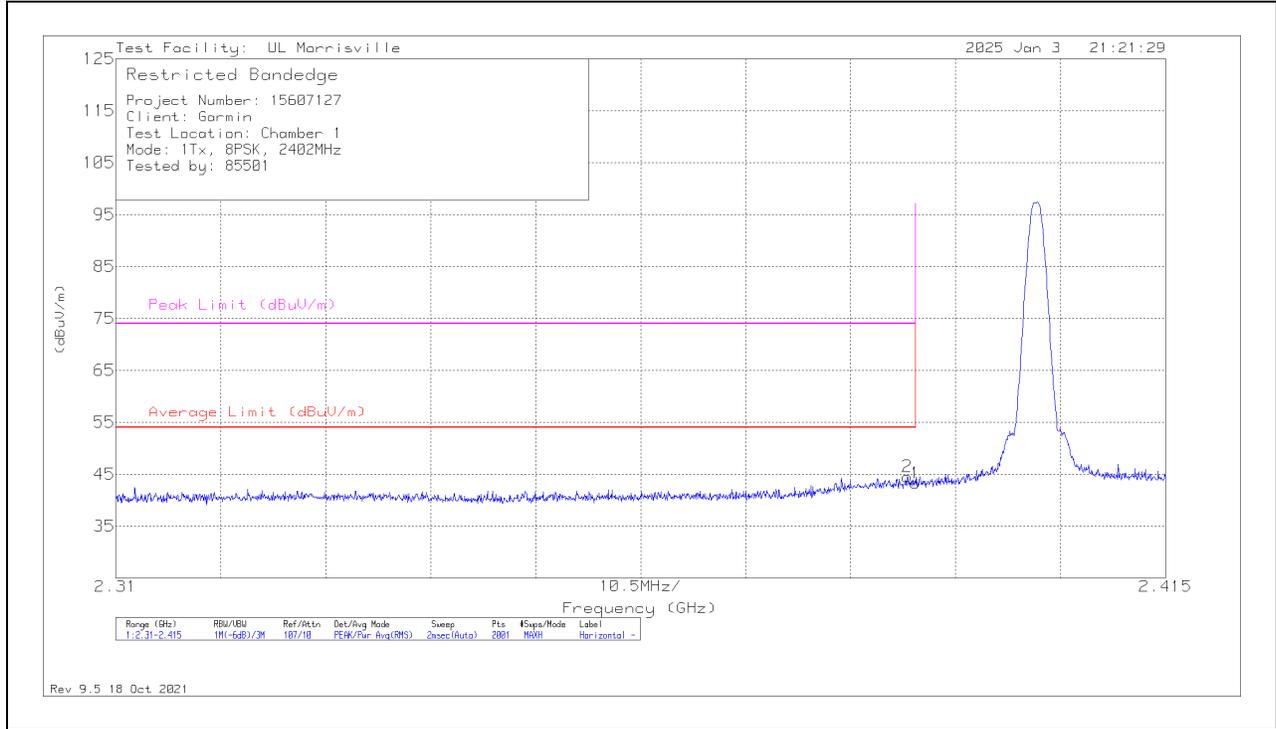
PK2 - Maximum Peak

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

10.1.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	135143 (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	35.39	Pk	31.9	-24	0	43.29	-	-	74	-30.71	306	156	H
	*** 2.38996	35.39	Pk	31.9	-24	-24	19.29	54	-34.71	-	-	306	156	H
2	*** 2.38917	36.62	Pk	31.9	-24	0	44.52	-	-	74	-29.48	306	156	H
	*** 2.38917	36.62	Pk	31.9	-24	-24	20.52	54	-33.48	-	-	306	156	H

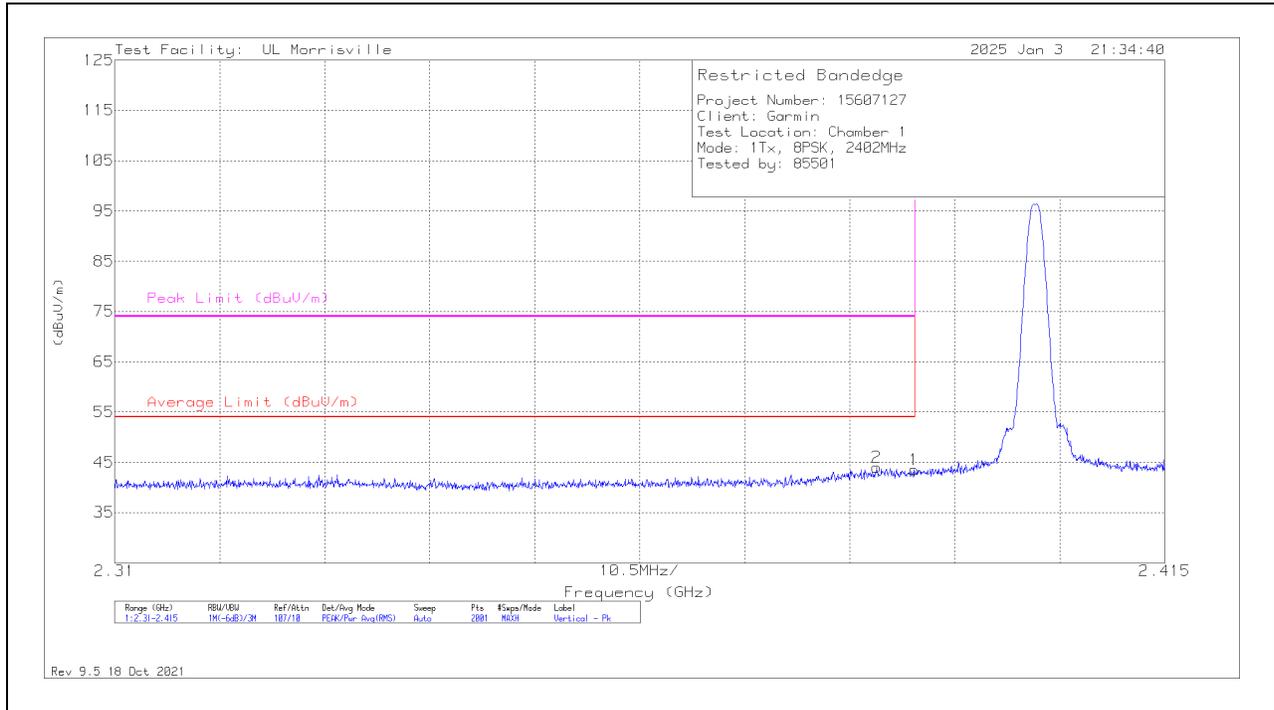
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

VERTICAL RESULT



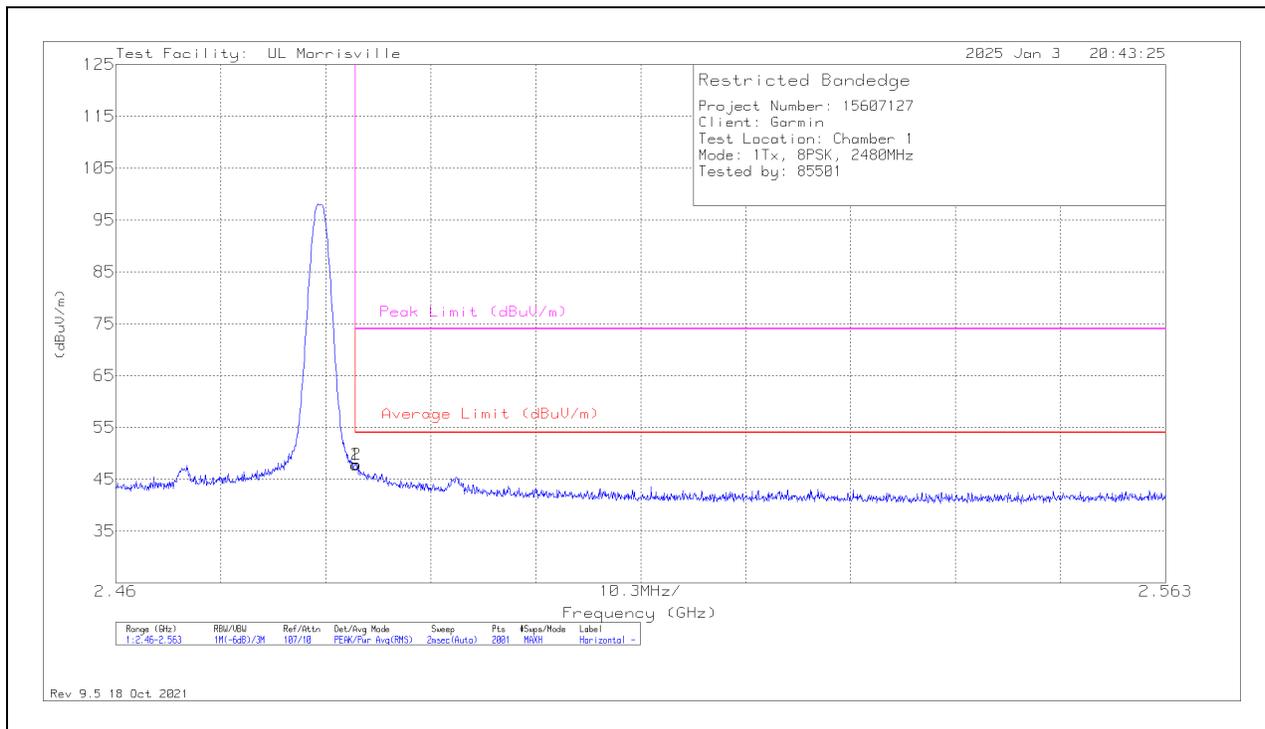
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	135143 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.38996	35.63	Pk	31.9	-24	0	43.53	-	-	74	-30.47	137	155	V
	*** 2.38996	35.63	Pk	31.9	-24	-24	19.53	54	-34.47	-	-	137	155	V
2	*** 2.38618	36.04	Pk	31.9	-23.9	0	44.04	-	-	74	-29.96	137	155	V
	*** 2.38618	36.04	Pk	31.9	-23.9	-24	20.04	54	-33.96	-	-	137	155	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	135143 (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	39.23	Pk	32.2	-23.7	0	47.73	-	-	74	-26.27	256	361	H
	* ** 2.48354	39.23	Pk	32.2	-23.7	-24	23.73	54	-30.27	-	-	256	361	H
2	* ** 2.48359	39.37	Pk	32.2	-23.7	0	47.87	-	-	74	-26.13	256	361	H
	* ** 2.48359	39.37	Pk	32.2	-23.7	-24	23.87	54	-30.13	-	-	256	361	H

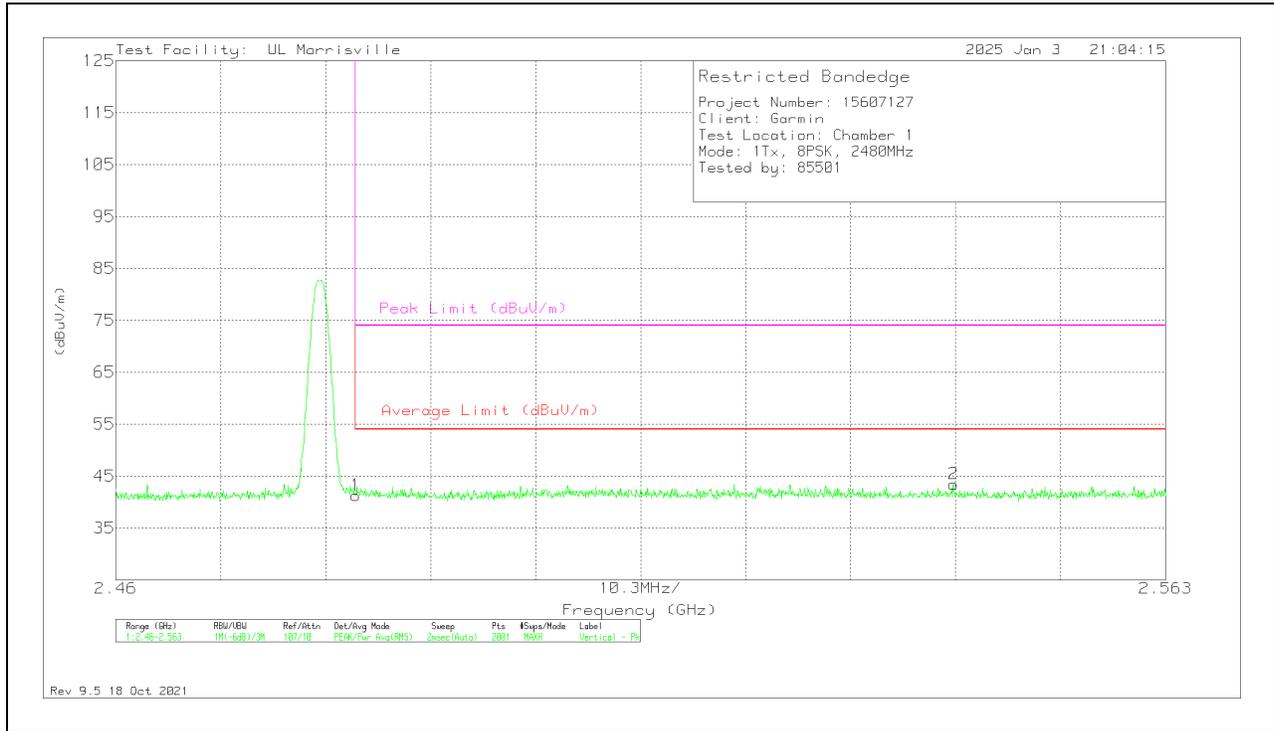
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	135143 (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	32.78	Pk	32.2	-23.7	0	41.28	-	-	74	-32.72	242	124	V
	* ** 2.48354	32.78	Pk	32.2	-23.7	-24	17.28	54	-36.72	-	-	242	124	V
2	** 2.54219	35.37	Pk	32.3	-24.2	0	43.47	-	-	74	-30.53	242	124	V
	** 2.54219	35.37	Pk	32.3	-24.2	-24	19.47	54	-34.53	-	-	242	124	V

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

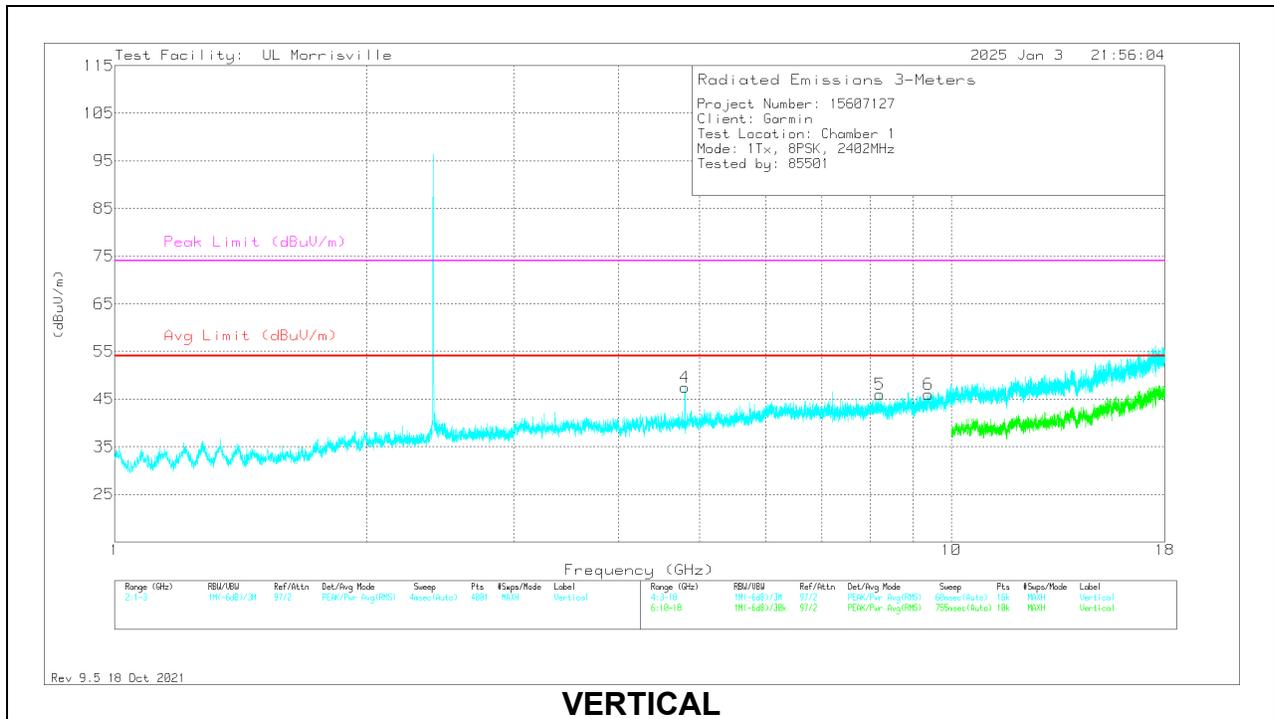
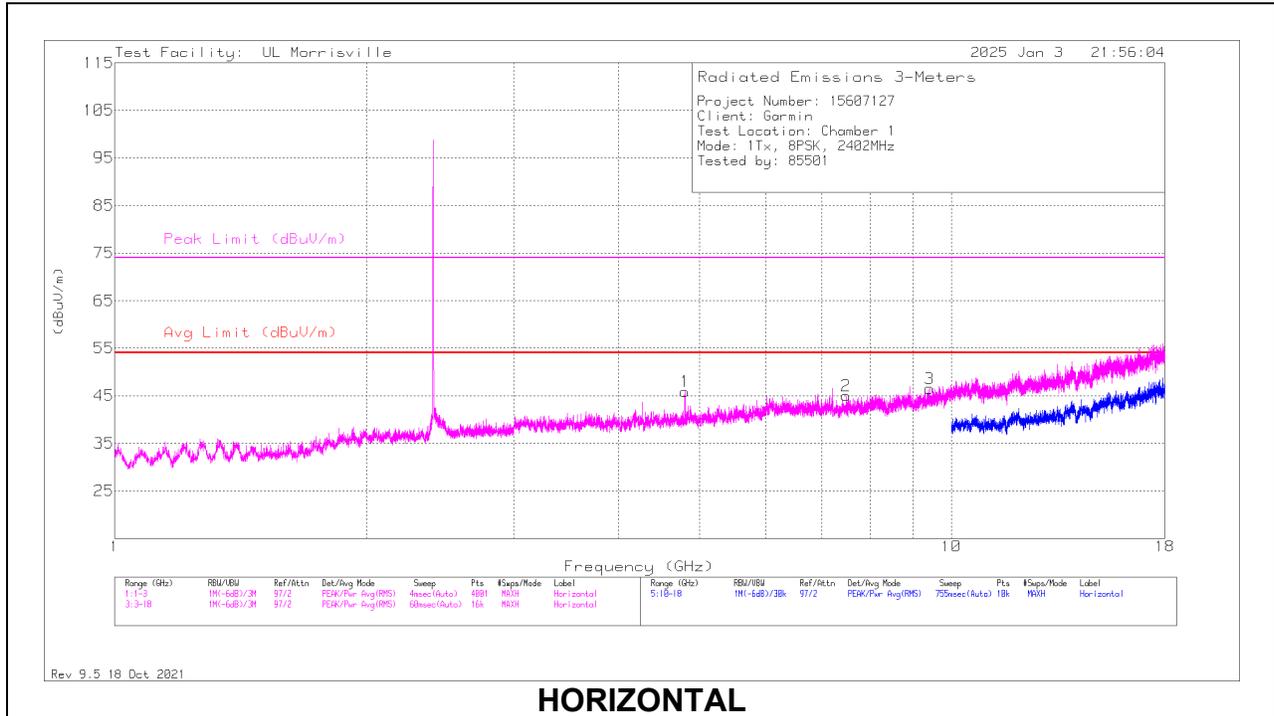
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



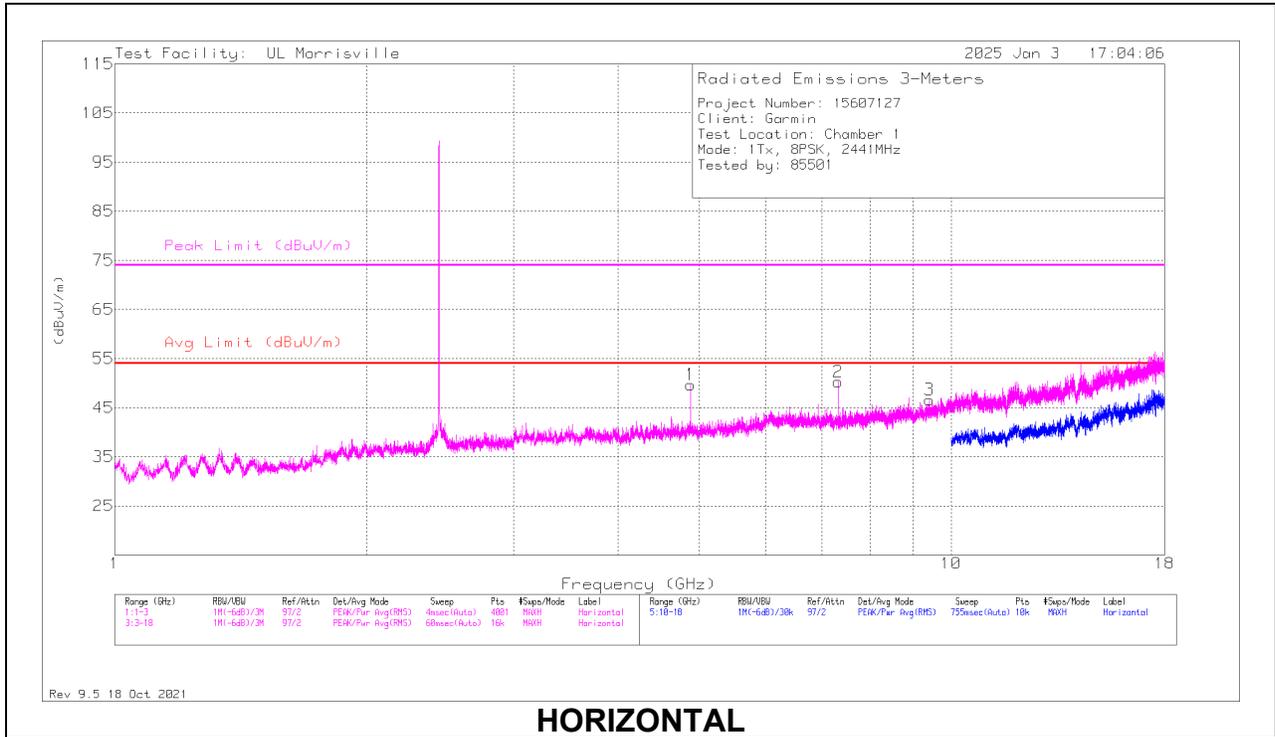
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	135143 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 4.80375	57.6	Pk	33.9	-45.6	0	45.9	54	-8.1	74	-28.1	0-360	200	H
2	* ** 7.49156	51.03	Pk	35.5	-41.5	0	45.03	54	-8.97	74	-28.97	0-360	101	H
3	* ** 9.41625	49.78	Pk	36.3	-39.6	0	46.48	54	-7.52	74	-27.52	0-360	200	H
4	* ** 4.80375	59.13	Pk	33.9	-45.6	0	47.43	54	-6.57	74	-26.57	0-360	101	V
5	* ** 8.21906	50.97	Pk	35.9	-40.8	0	46.07	54	-7.93	74	-27.93	0-360	101	V
6	* ** 9.38813	50.16	Pk	36.2	-40.3	0	46.06	54	-7.94	74	-27.94	0-360	101	V

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

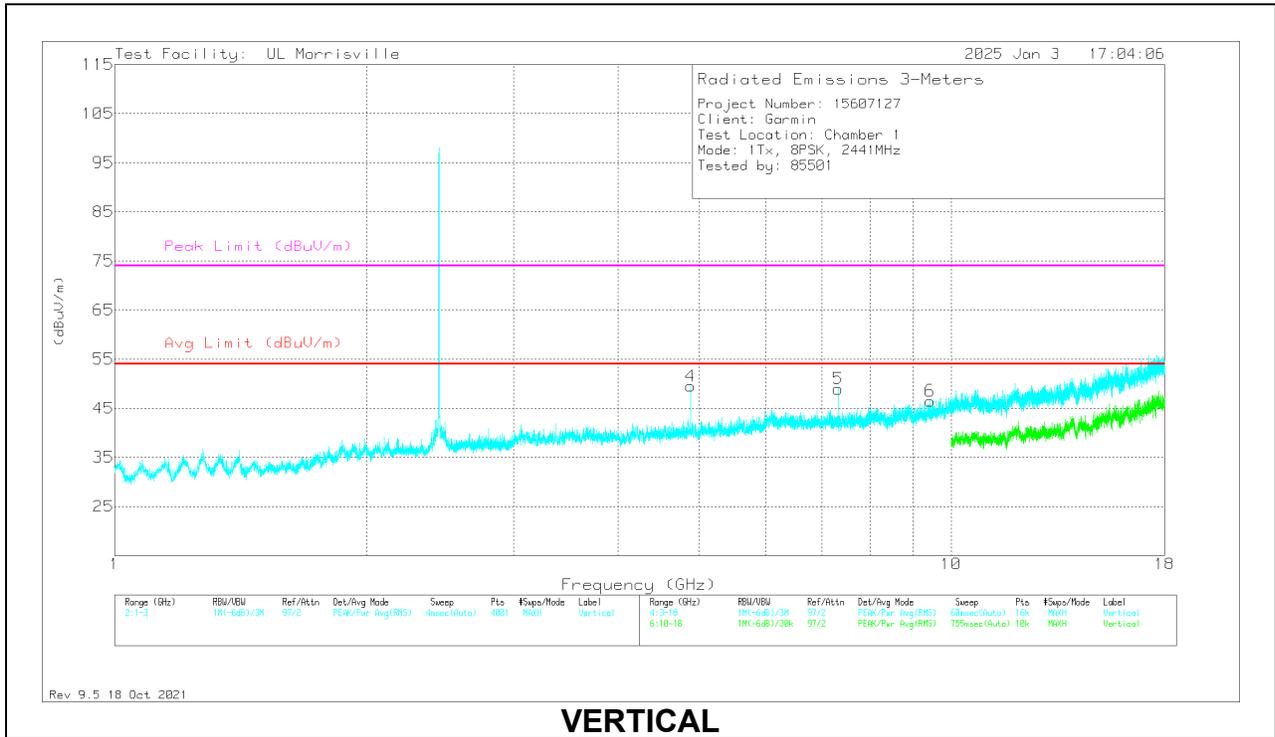
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	135143 (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	*** 4.8824	64.2	PK2	34	-44.8	0	53.4	-	-	74	-20.6	172	200	H
	*** 4.8824	64.2	PK2	34	-44.8	-24	29.4	54	-24.6	-	-	172	200	H
2	*** 7.32352	58.67	PK2	35.4	-42	0	52.07	-	-	74	-21.93	276	224	H
	*** 7.32352	58.67	PK2	35.4	-42	-24	28.07	54	-25.93	-	-	276	224	H
3	*** 9.42094	50.33	PK	36.3	-40	0	46.63	54	-7.37	74	-27.37	0-360	199	H
4	*** 4.88229	61.57	PK2	34	-44.7	0	50.87	-	-	74	-23.13	301	257	V
	*** 4.88229	61.57	PK2	34	-44.7	-24	26.87	54	-27.13	-	-	301	257	V
5	*** 7.32309	58.28	PK2	35.4	-41.9	0	51.78	-	-	74	-22.22	118	194	V
	*** 7.32309	58.28	PK2	35.4	-41.9	-24	27.78	54	-26.22	-	-	118	194	V
6	*** 9.435	50.47	PK	36.3	-40.3	0	46.47	54	-7.53	74	-27.53	0-360	200	V

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

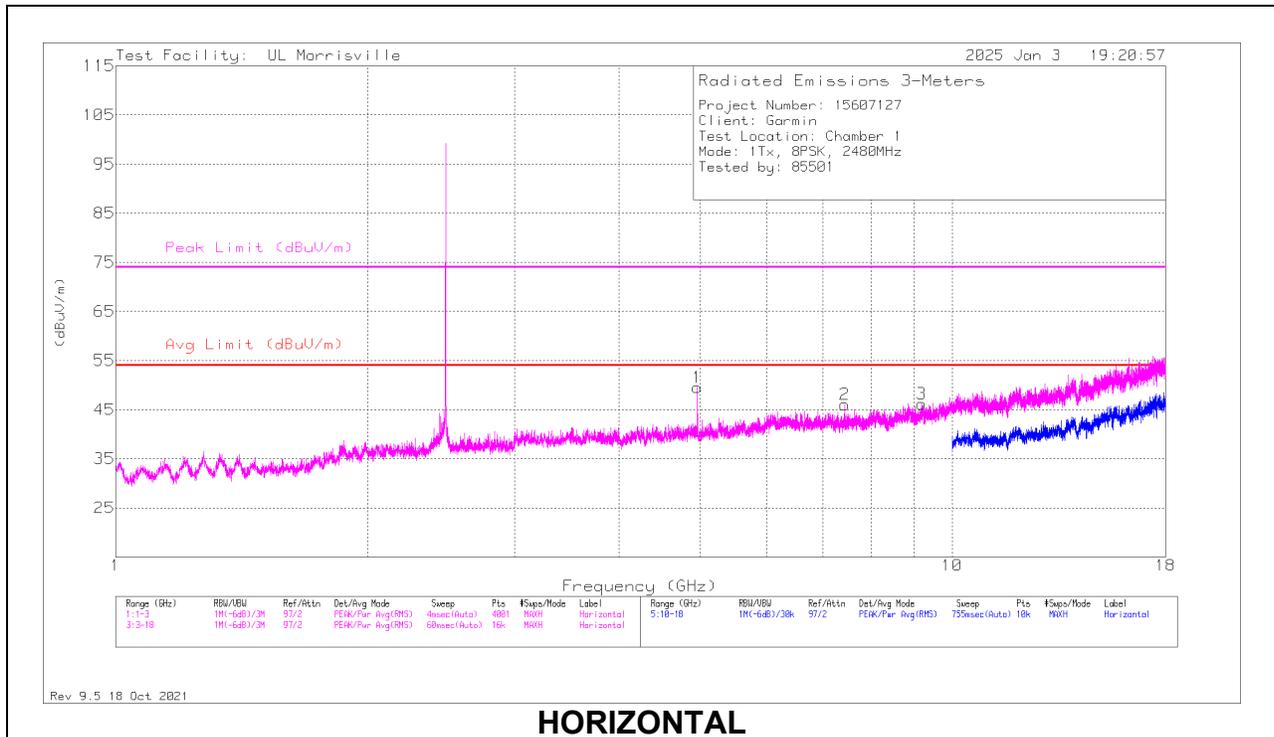
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

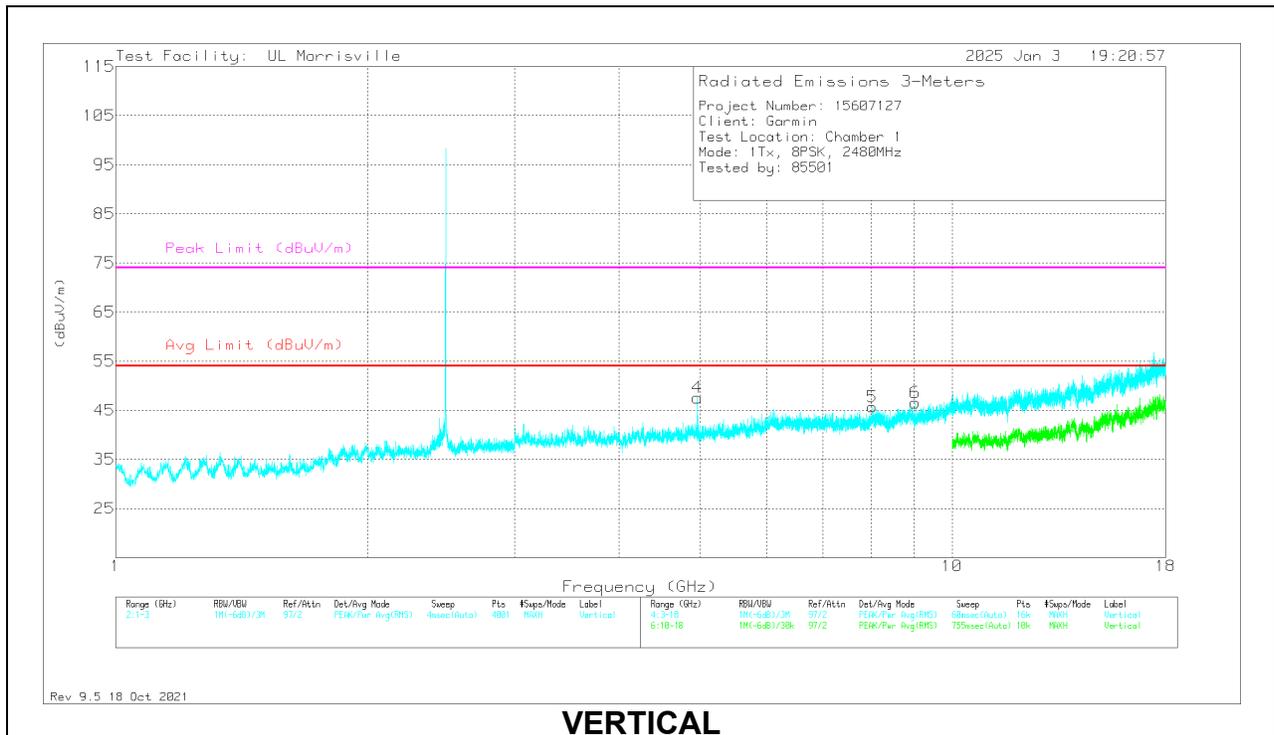
PK2 - Maximum Peak

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

Marker	Frequency (GHz)	Meter Reading (dBUV)	Det	135143 (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	*** 4.96025	62.11	PK2	34.2	-44.8	0	51.51	-	-	74	-22.49	172	222	H
	*** 4.96025	62.11	PK2	34.2	-44.8	-24	27.51	54	-26.49	-	-	172	222	H
2	*** 7.44	51.73	Pk	35.4	-41.1	0	46.03	54	-7.97	74	-27.97	0-360	101	H
3	*** 9.19125	49.75	Pk	36	-39.6	0	46.15	54	-7.85	74	-27.85	0-360	101	H
4	*** 4.96031	58.15	Pk	34.2	-44.8	0	47.55	54	-6.45	74	-26.45	0-360	101	V
5	*** 8.03156	50.97	Pk	35.9	-41.2	0	45.67	54	-8.33	74	-28.33	0-360	101	V
6	*** 9.03281	50.05	Pk	35.8	-39.3	0	46.55	54	-7.45	74	-27.45	0-360	200	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

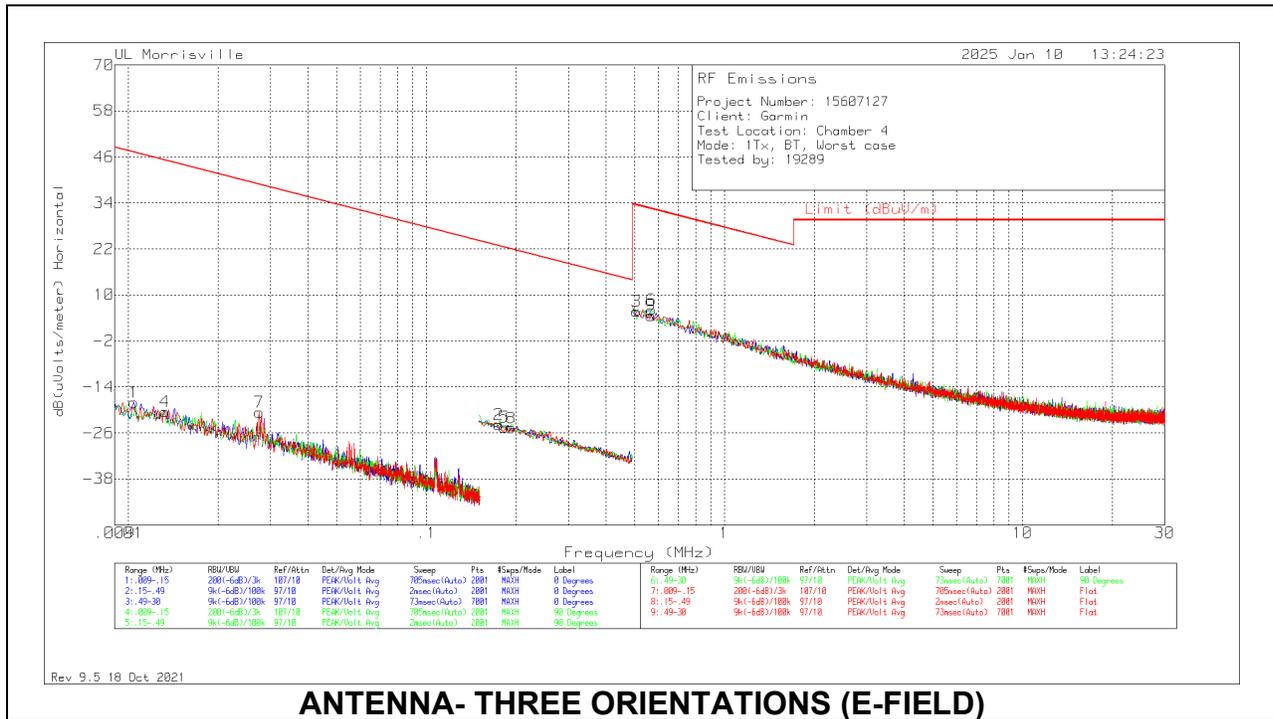
Pk - Peak detector

PK2 - Maximum Peak

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

10.2. WORST CASE SPURIOUS BELOW 30MHZ

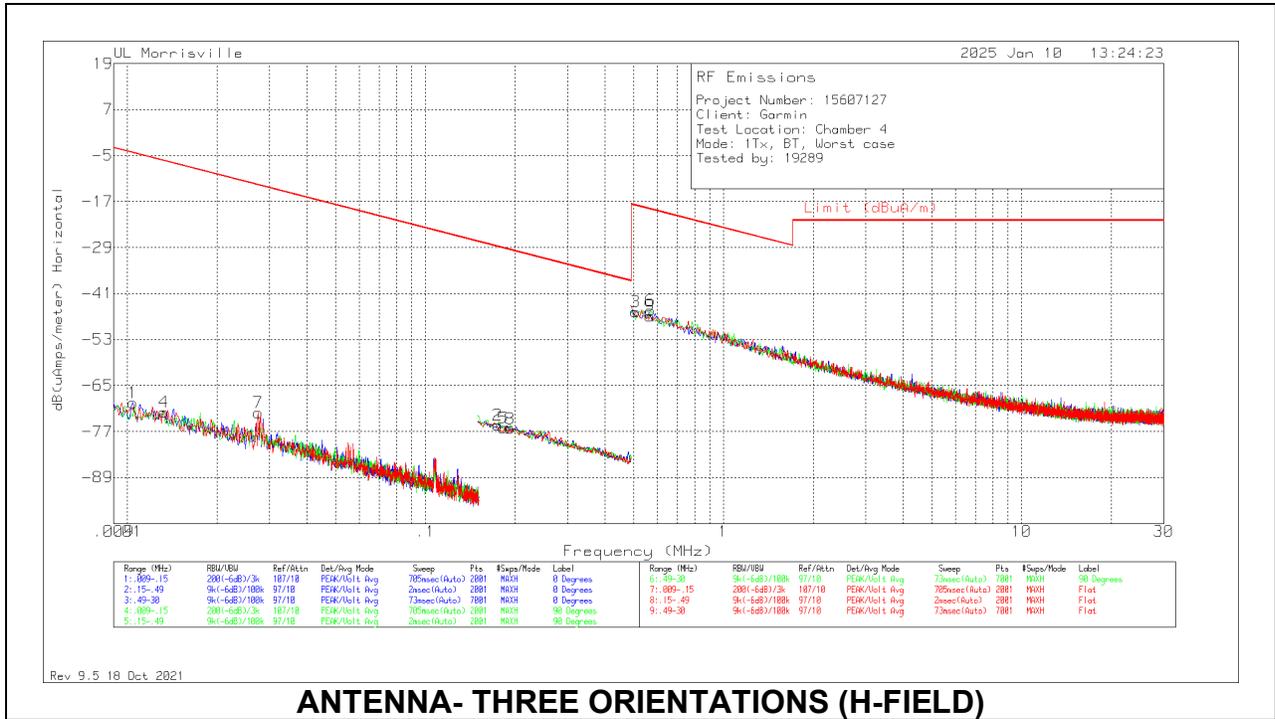
Note: All measurements were made at a test distance of 3 m. The measured data was extrapolated from the test distance (3m) to the specification distance (300 m from 9-490 kHz and 30 m from 490 kHz – 30 MHz) to clearly show the relative levels of fundamental and spurious emissions and demonstrate compliance 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).



ANTENNA- THREE ORIENTATIONS (E-FIELD)

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	135144 (dB/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uVolts/meter)	Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
1	.01042	43.93	Pk	18	.1	-80	-17.97	47.25	-65.22	0-360	0 degs
4	.01326	42.71	Pk	16.8	.1	-80	-20.39	45.15	-65.54	0-360	90 degs
7	.02746	46.01	Pk	13.3	.1	-80	-20.59	38.83	-59.42	0-360	Flat
2	.17482	45.11	Pk	11	.1	-80	-23.79	22.75	-46.54	0-360	0 degs
5	.1829	44.33	Pk	11	.1	-80	-24.57	22.36	-46.93	0-360	90 degs
8	.19225	44.16	Pk	11	.1	-80	-24.74	21.93	-46.67	0-360	Flat
3	.50686	34.68	Pk	11	.1	-40	5.78	33.51	-27.73	0-360	0 degs
9	.56589	33.51	Pk	11	.1	-40	4.61	32.55	-27.94	0-360	Flat
6	.5701	34.94	Pk	11	.1	-40	6.04	32.48	-26.44	0-360	90 degs

Pk - Peak detector

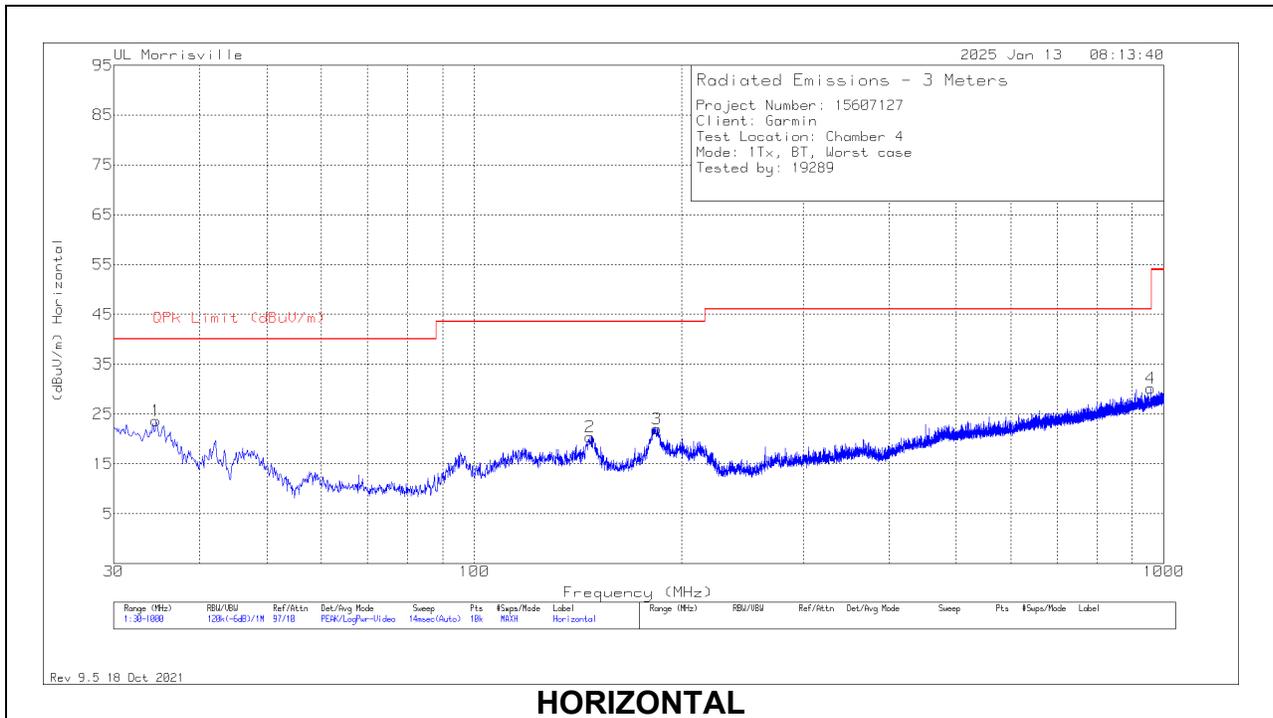


ANTENNA- THREE ORIENTATIONS (H-FIELD)

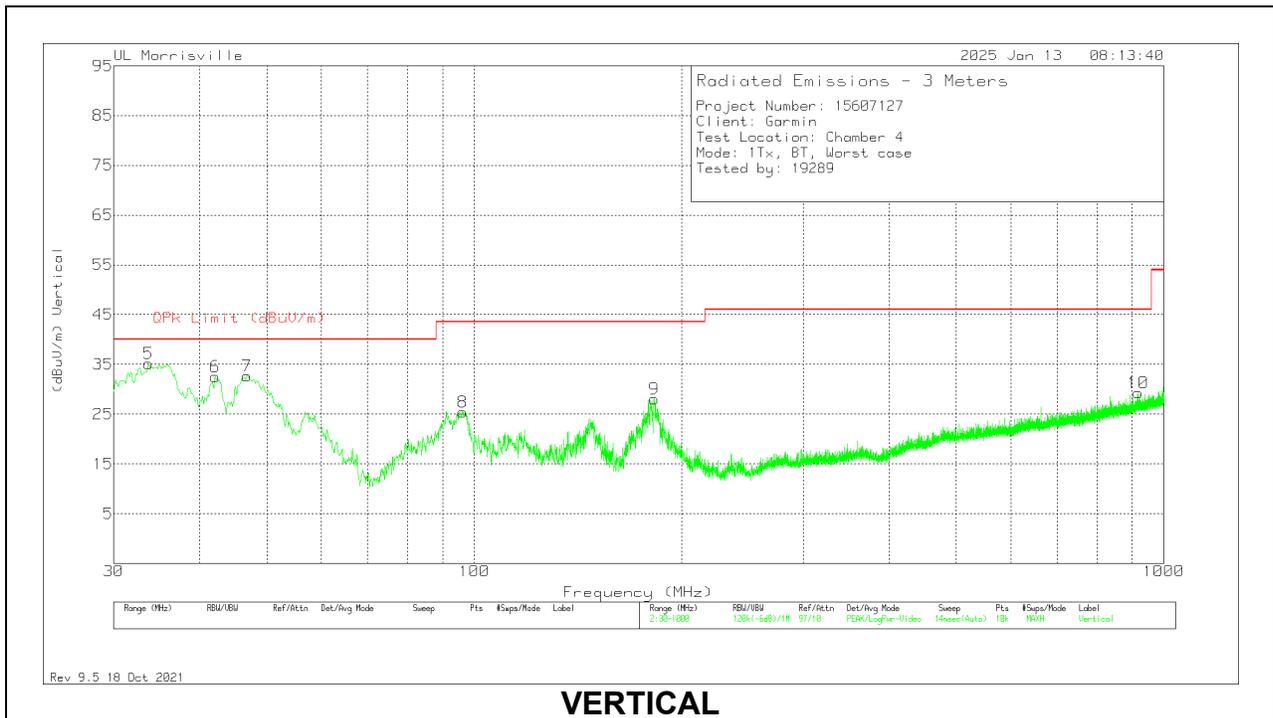
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	135144 (dB/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uAmps/meter)	Limit (dBuA/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
1	.01042	43.93	Pk	-33.5	.1	-80	-69.47	-4.25	-65.22	0-360	0 degs
4	.01326	42.71	Pk	-34.7	.1	-80	-71.89	-6.35	-65.54	0-360	90 degs
7	.02746	46.01	Pk	-38.2	.1	-80	-72.09	-12.67	-59.42	0-360	Flat
2	.17482	45.11	Pk	-40.5	.1	-80	-75.29	-28.75	-46.54	0-360	0 degs
5	.1829	44.33	Pk	-40.5	.1	-80	-76.07	-29.14	-46.93	0-360	90 degs
8	.19225	44.16	Pk	-40.5	.1	-80	-76.24	-29.57	-46.67	0-360	Flat
3	.50686	34.68	Pk	-40.5	.1	-40	-45.72	-17.99	-27.73	0-360	0 degs
9	.56589	33.51	Pk	-40.5	.1	-40	-46.89	-18.95	-27.94	0-360	Flat
6	.5701	34.94	Pk	-40.5	.1	-40	-45.46	-19.02	-26.44	0-360	90 degs

Pk - Peak detector

10.3. WORST CASE SPURIOUS 30-1000MHZ



HORIZONTAL



VERTICAL

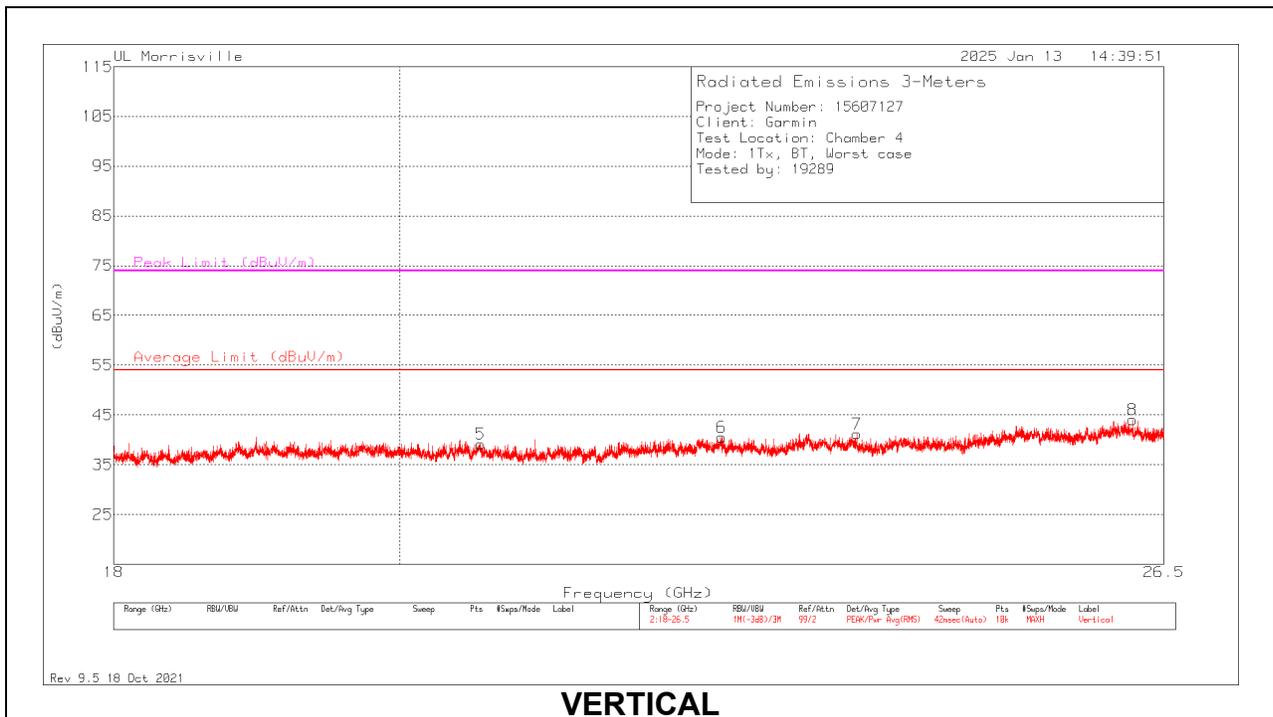
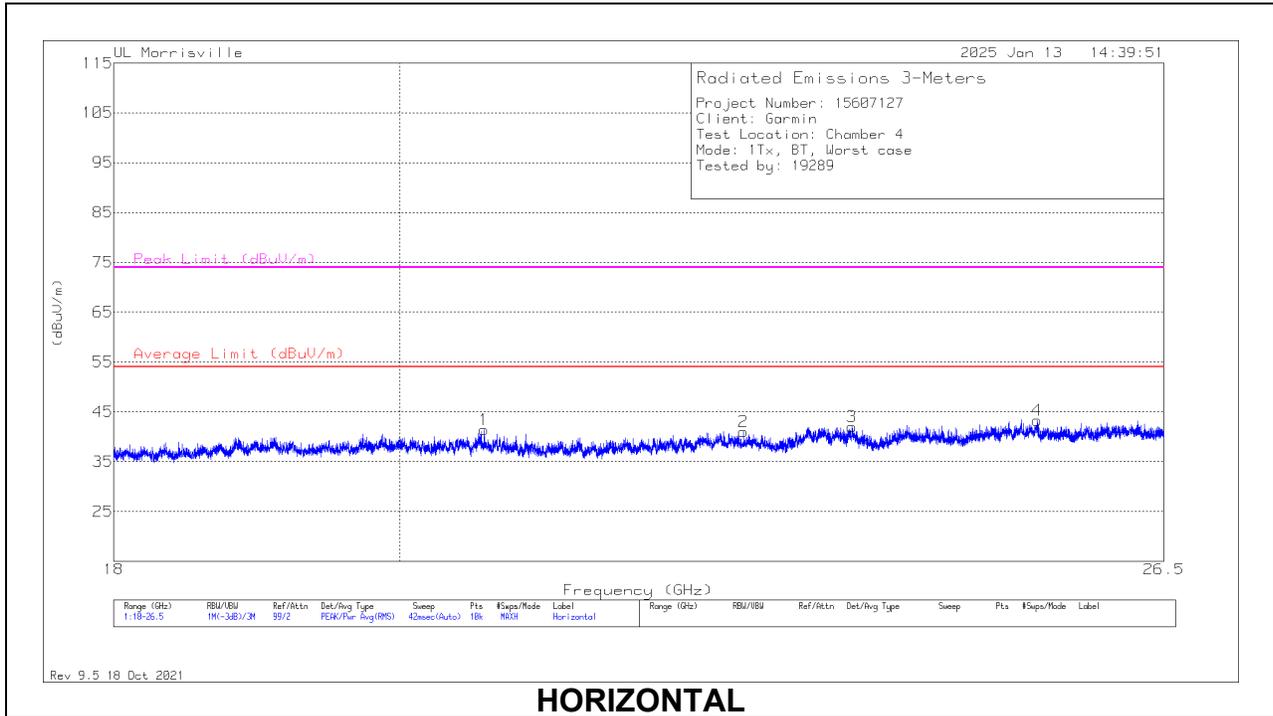
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90628 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	35.679	41.83	Qp	23.1	-32.1	32.83	40	-7.17	285	102	V
1	34.559	31.91	Pk	23.8	-32.1	23.61	40	-16.39	0-360	200	H
6	42.125	45.92	Pk	18.5	-31.9	32.52	40	-7.48	0-360	100	V
7	46.781	49.16	Pk	15.5	-32	32.66	40	-7.34	0-360	100	V
8	96.154	41.39	Pk	15.4	-31.4	25.39	43.52	-18.13	0-360	100	V
2	147.079	32.73	Pk	18.7	-31	20.43	43.52	-23.09	0-360	100	H
9	182.29	41.68	Pk	17.2	-30.8	28.08	43.52	-15.44	0-360	100	V
3	183.939	35.68	Pk	17.1	-30.8	21.98	43.52	-21.54	0-360	100	H
10	917.647	27.99	Pk	28.4	-27.1	29.29	46.02	-16.73	0-360	100	V
4	956.835	27.91	Pk	28.8	-26.5	30.21	46.02	-15.81	0-360	200	H

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

10.4. WORST CASE SPURIOUS 18-26GHz



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	*** 20.63219	48.48	Pk	33.7	-40.8	41.38	54	-12.62	74	-32.62	0-360	100	H
2	*** 22.69918	46.49	Pk	34.1	-39.6	40.99	54	-13.01	74	-33.01	0-360	100	H
3	*** 23.62644	45.82	Pk	34.6	-38.4	42.02	54	-11.98	74	-31.98	0-360	100	H
5	*** 20.60414	46.04	Pk	33.7	-40.6	39.14	54	-14.86	74	-34.86	0-360	300	V
6	*** 22.51475	46.07	Pk	34.2	-39.7	40.57	54	-13.43	74	-33.43	0-360	150	V
7	*** 23.66638	44.91	Pk	34.5	-38.2	41.21	54	-12.79	74	-32.79	0-360	150	V
4	25.29312	43.89	Pk	35.7	-36.3	43.29	-	-	-	-	0-360	100	H
8	26.19573	44.03	Pk	35.3	-35.3	44.03	-	-	-	-	0-360	150	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)
RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

TEST PROCEDURE

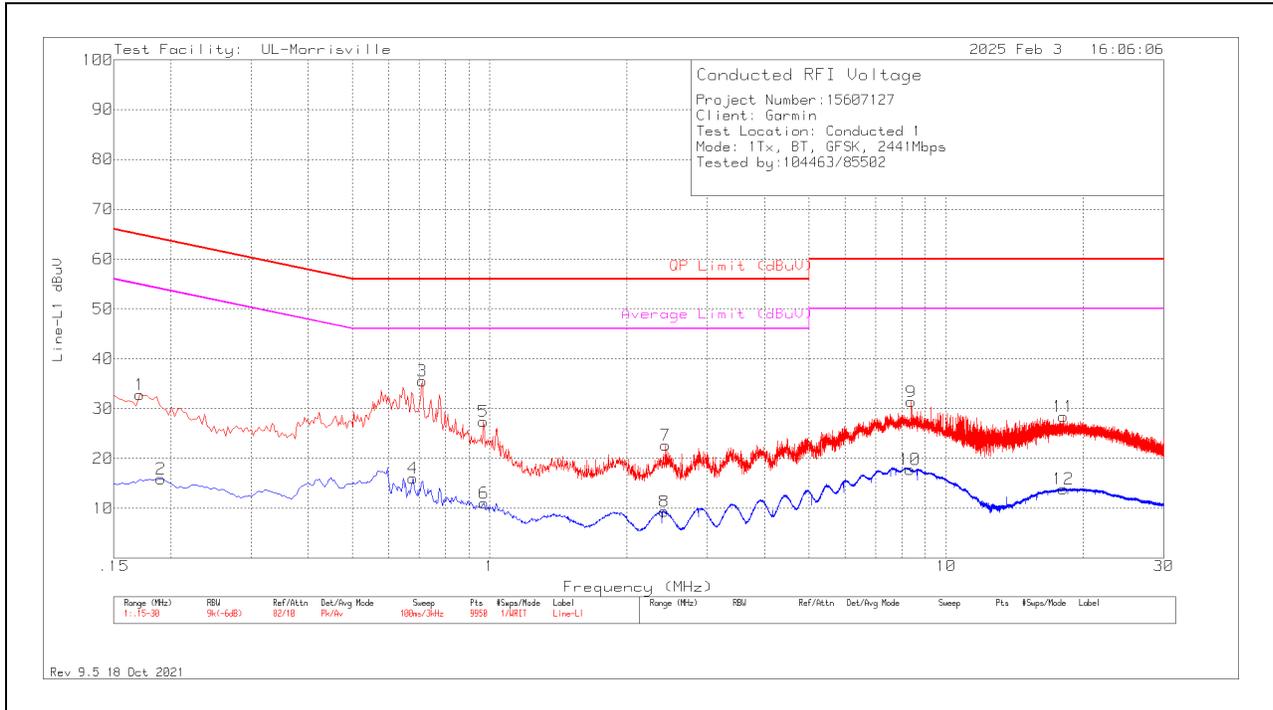
The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both lines.

11.1. AC POWER LINE

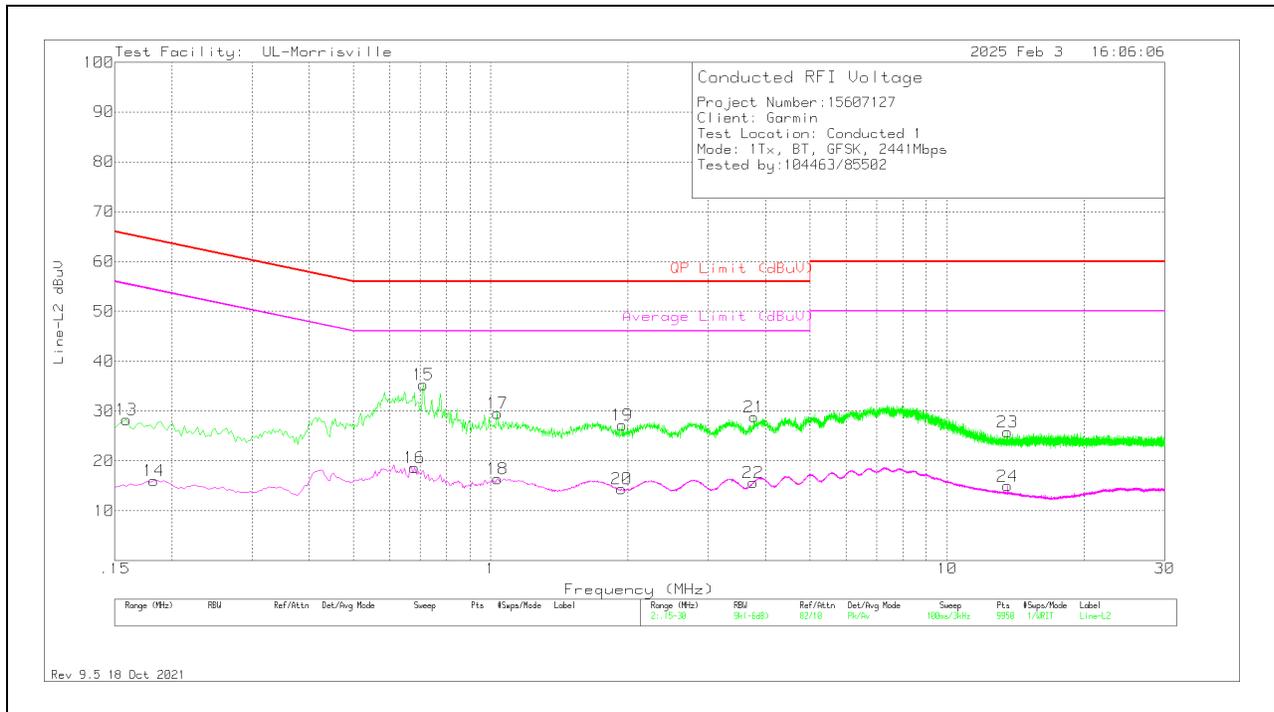
LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VDF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
1	.171	22.75	Pk	.2	9.8	32.75	64.91	-32.16	-	-
2	.1905	5.9	Av	.2	9.8	15.9	-	-	54.01	-38.11
4	.678	6.2	Av	0	9.8	16	-	-	46	-30
3	.711	25.76	Pk	0	9.8	35.56	56	-20.44	-	-
5	.969	17.65	Pk	0	9.8	27.45	56	-28.55	-	-
6	.972	1.24	Av	0	9.8	11.04	-	-	46	-34.96
8	2.412	-.47	Av	0	9.8	9.33	-	-	46	-36.67
7	2.424	12.83	Pk	0	9.8	22.63	56	-33.37	-	-
10	8.331	7.64	Av	.1	10	17.74	-	-	50	-32.26
9	8.391	21.25	Pk	.1	10	31.35	60	-28.65	-	-
12	18.057	3.56	Av	.2	10.1	13.86	-	-	50	-36.14
11	18.087	18.07	Pk	.2	10.1	28.37	60	-31.63	-	-

Pk - Peak detector
 Av - Average detection

LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VDF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
13	.159	18.24	Pk	.2	9.8	28.24	65.52	-37.28	-	-
14	.183	6.05	Av	.2	9.8	16.05	-	-	54.35	-38.3
16	.681	8.87	Av	0	9.8	18.67	-	-	46	-27.33
15	.711	25.45	Pk	0	9.8	35.25	56	-20.75	-	-
17	1.035	19.71	Pk	0	9.8	29.51	56	-26.49	-	-
18	1.035	6.6	Av	0	9.8	16.4	-	-	46	-29.6
20	1.938	4.54	Av	0	9.8	14.34	-	-	46	-31.66
19	1.941	17.35	Pk	0	9.8	27.15	56	-28.85	-	-
22	3.759	5.78	Av	0	9.9	15.68	-	-	46	-30.32
21	3.777	18.94	Pk	0	9.9	28.84	56	-27.16	-	-
23	13.563	15.67	Pk	.1	10	25.77	60	-34.23	-	-
24	13.563	4.85	Av	.1	10	14.95	-	-	50	-35.05

PK - Peak detector
 Av - Average detection

12. SETUP PHOTOS

Please refer to R15607127-EP1 for setup photos.

END OF TEST REPORT