

TEST REPORT

Report Number: 14523772-E5V2

Applicant : APPLE, INC.
1 APPLE PARK WAY
CUPERTINO, CA 95014, U.S.A

Model : A3105 (Full Test Model)
A3106, A3108 (Variant Models)

Brand : APPLE

FCC ID : BCG-E8440A (Full Test Model)
BCG-E8441A, BCG-E8442A (Variant Model)

IC : 579C-E8440A (Full Test Model)
579C-E8441A, 579C-E8442A (Variant Model)

EUT Description : SMARTPHONE

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
ISED RSS-247 ISSUE 2
ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:

August 30, 2023

Prepared by:

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	08/24/2023	Initial Issue	Chin Pang
V2	08/30/2023	Address TCB questions sections 8, 9	Chris Xiong

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	5
2. TEST SUMMARY	7
3. TEST METHODOLOGY	7
4. FACILITIES AND ACCREDITATION	8
5. DECISION RULES AND MEASUREMENT UNCERTAINTY	8
5.1. METROLOGICAL TRACEABILITY	8
5.2. DECISION RULES	8
5.3. MEASUREMENT UNCERTAINTY	9
5.4. SAMPLE CALCULATION	9
6. EQUIPMENT UNDER TEST	10
6.1. EUT DESCRIPTION	10
6.2. MAXIMUM OUTPUT POWER	10
6.3. DESCRIPTION OF AVAILABLE ANTENNAS	10
6.4. SOFTWARE AND FIRMWARE	10
6.5. WORST-CASE CONFIGURATION AND MODE	11
6.6. DESCRIPTION OF TEST SETUP	12
7. MEASUREMENT METHOD	16
8. TEST AND MEASUREMENT EQUIPMENT	17
9. ANTENNA PORT TEST RESULTS	18
9.1. ON TIME AND DUTY CYCLE	18
9.2. 99% BANDWIDTH	19
9.2.1. HIGH POWER	20
9.3. 6 dB BANDWIDTH	21
9.3.1. HIGH POWER	22
9.4. OUTPUT POWER	23
9.4.1. HIGH POWER	24
9.4.2. LOW POWER	25
9.5. AVERAGE POWER	26
9.5.1. HIGH POWER	27
9.5.2. LOW POWER	28
9.6. POWER SPECTRAL DENSITY	29
9.6.1. HIGH POWER	30
9.7. CONDUCTED SPURIOUS EMISSIONS	31

9.7.1.	HIGH POWER	32
9.7.2.	LOW POWER	34
10.	RADIATED TEST RESULTS	36
10.1.	TRANSMITTER ABOVE 1 GHz.....	38
10.1.1.	ANT 4, 802.15.4 HIGH POWER.....	38
10.1.2.	ANT 3, 802.15.4 HIGH POWER.....	42
10.1.3.	ANT 4, 802.15.4 LOW POWER.....	46
10.1.4.	ANT 3, 802.15.4 LOW POWER.....	50
10.1.5.	ANT 4, 802.15.4 HIGH POWER HARMONICS AND SPURIOUS EMISSIONS.....	54
10.1.6.	ANT 4, 802.15.4 LOW POWER HARMONICS AND SPURIOUS EMISSIONS.....	60
10.1.7.	ANT 3, 802.15.4 HIGH POWER HARMONIC AND SPURIOUS EMISSIONS	66
10.1.8.	ANT 3, 802.15.4 LOW POWER HARMONIC AND SPURIOUS EMISSIONS.....	72
10.2.	WORST CASE BELOW 1 GHz.....	78
10.3.	WORST CASE 18-26 GHz.....	80
11.	AC POWER LINE CONDUCTED EMISSIONS	82
11.1.	AC Power Line With AC/DC Adapter.....	83
11.2.	AC Power Line with Laptop	85
12.	SETUP PHOTOS	87

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: APPLE INC.
1 APPLE PARK WAY
CUPERTINO, CA 95014, U.S.A

EUT DESCRIPTION: SMARTPHONE

MODEL: A3105 (Full Test Model)
A3106, A3108 (Variant Model)

BRAND: APPLE

SERIAL NUMBER: JKX4322779 (CONDUCTED)
CW34G74L6C, DWP17WGX91 (RADIATED)

SAMPLE RECEIPT DATE: MARCH 23, 2023

DATE TESTED: MAY 3, 2023-AUGUST 24, 2023

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

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested can demonstrate 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 considered unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, any agency of the Federal Government, or any agency of the U.S. government.

Approved & Released For
UL Verification Services Inc. By:



Senior Lab Engineer
Consumer Technology Division
UL Verification Services Inc.

Prepared By:



Tony Li
Senior Test Engineer
Consumer Technology Division
UL Verification Services Inc.

2. TEST SUMMARY

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	Complies	None.
15.247 (b) (3)	RSS-247 5.4 (d)	Output Power	Complies	None.
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	Complies	None.
15.247 (d)	RSS-247 5.5	Conducted Spurious Emissions	Complies	None.
15.209, 15.205	RSS-GEN 8.9, 8.10	Radiated Emissions	Complies	None.
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions	Complies	None.

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 C63.10-2013, KDB 558074 D01 DTS Meas Guidance v05r02, RSS-247 Issue 2, KDB 414788 D01 Radiated Test Site v01r01, KDB 662911, RSS-GEN Issue 5 + A1 + A2.

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, 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 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☒	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☒	Building 3: 843 Auburn Court, Fremont, CA 94538 USA			
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538 USA			
☐	Building 5: 47670 Kato Rd, Fremont, CA 94538 USA			

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	U _{LAB}
Conducted Antenna Port Emission Measurement	1.94 dB
Power Spectral Density	2.466 dB
Time Domain Measurements Using SA	3.39dB
RF Power Measurement Direct Method Using Power Meter	0.450 dB (Peak), 1.3 dB(Ave)
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.2%
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 dB

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

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

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

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Final Voltage (dBuV)} &= \text{Measured Voltage (dBuV)} + \text{Cable Loss (dB)} + \text{Limiter Factor (dB)} + \\ &\text{LISN Insertion Loss.} \\ 36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} &= 46.6 \text{ dBuV} \end{aligned}$$

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The Apple iPhone is a smartphone with cellular GSM, GPRS, EGPRS, UMTS, LTE, 5G NR1, IEEE 802.11a/b/g/n/ac/ax, Bluetooth (BT), Ultra-Wideband (UWB), GPS, NFC, NB UNII, 802.15.4, 802.15.4ab-NB and MSS technologies. The rechargeable battery is not user accessible.

The Model and FCC/IC ID covered by this report includes:

Full Test Model: A3105, FCC ID: BCG-E8440A, IC ID: 579C-E8440A

Variant Model: A3106, FCC ID: BCG-E8441A, IC ID: 579C-E8441A
A3108, FCC ID: BCG-E8442A, IC ID: 579C-E8442A

6.2. MAXIMUM OUTPUT POWER

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

Antenna	Configuration	Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
ANT 4	High Power	2405 - 2475	Thread	21.72	148.59
	Low Power			11.39	13.77
ANT 3	High Power	2405 - 2475	Thread	21.80	151.36
	Low Power			13.35	21.63

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna(s) gain and type, as provided by the manufacturer' are as follows:
Cable loss is 2.1dB.

Frequency Range (GHz)	ANT 4 (dBi)	ANT 3 (dBi)
2.4	-1.1	-0.9

6.4. SOFTWARE AND FIRMWARE

The EUT firmware version installed during testing was 21.1.306.2344.

6.5. WORST-CASE CONFIGURATION AND MODE

The EUT was investigated in three orthogonal orientations X, Y and Z on ANT 4, and ANT 3. It was determined that Z (portrait) was the worst-case orientation for ANT 4 and Y (landscape) for ANT 3.

Radiated band edge, harmonic, and spurious emissions from 1GHz to 18GHz were performed with the EUT was set to transmit at highest power on Low/Middle/High channels.

Radiated emissions below 1GHz, 18-26GHz and power line conducted emissions were performed with the EUT transmits at the channel with the highest output power as worst-case scenario. There were no emissions found below 30MHz within 20dB of the limit.

For below 1GHz tests were performed with EUT connected to AC power adapter as the worst case; and for above 1GHz, the worst-case configuration reported was tested with EUT only. For AC line conducted emission, test was investigated with AC power adapter and with laptop.

For simultaneous transmission of multiple channels in the 2.4GHz and 5GHz bands. No noticeable emission was found.

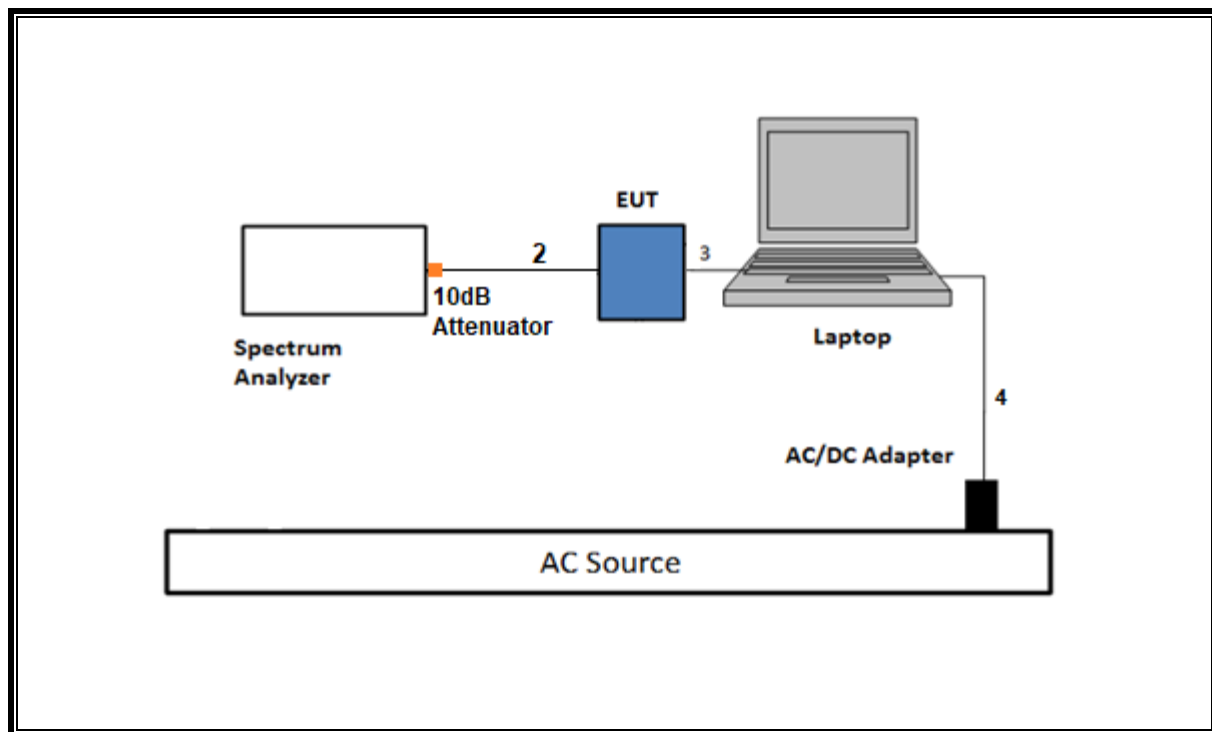
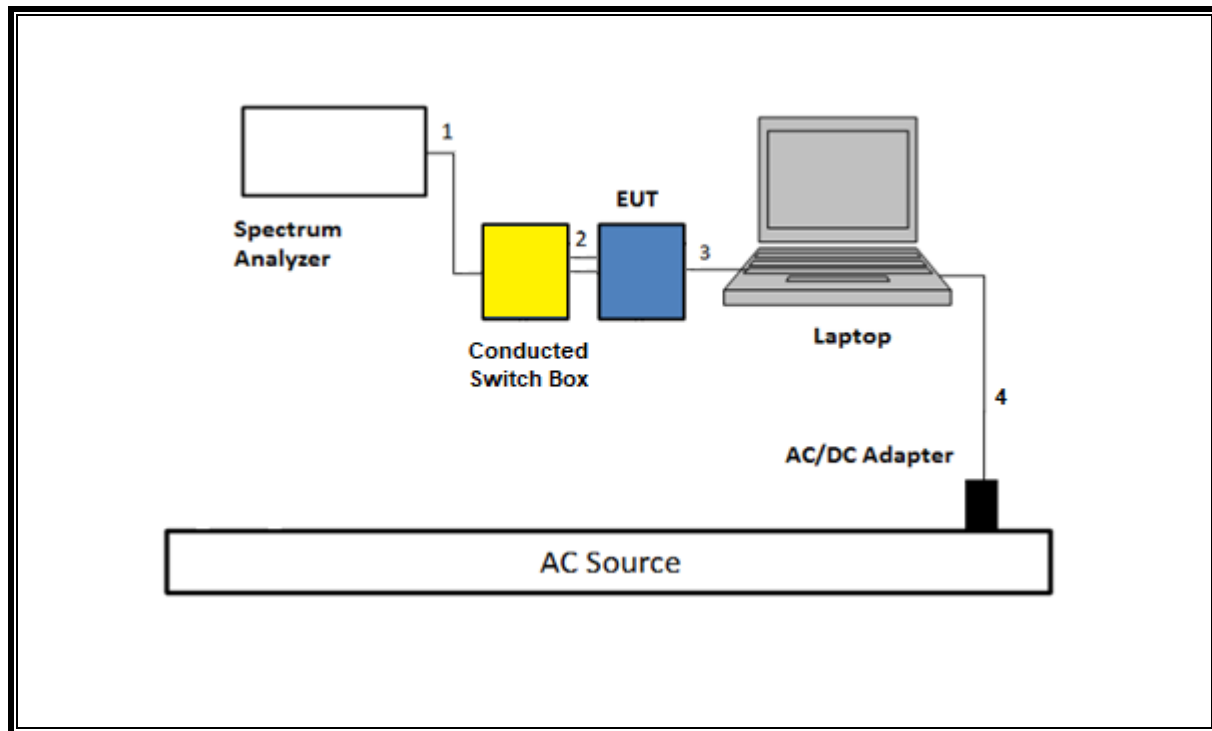
Note: In the Radiated Plots and emissions data, ANT0=ANT4 and ANT1=ANT 3.

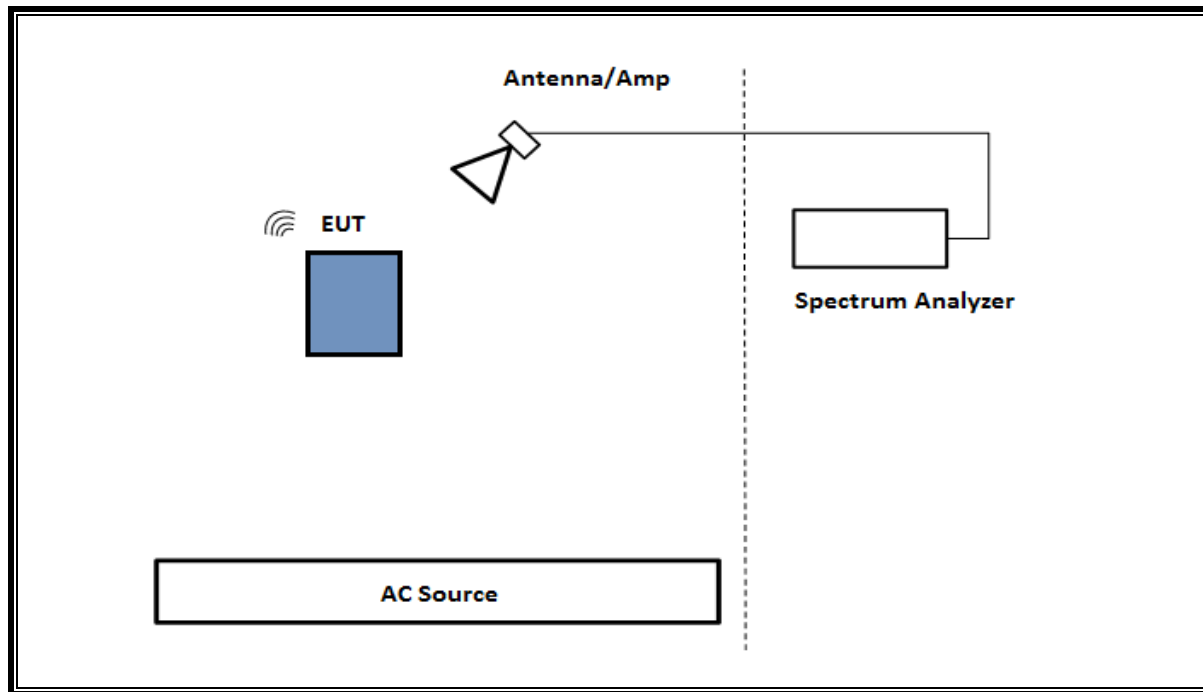
6.6. DESCRIPTION OF TEST SETUP

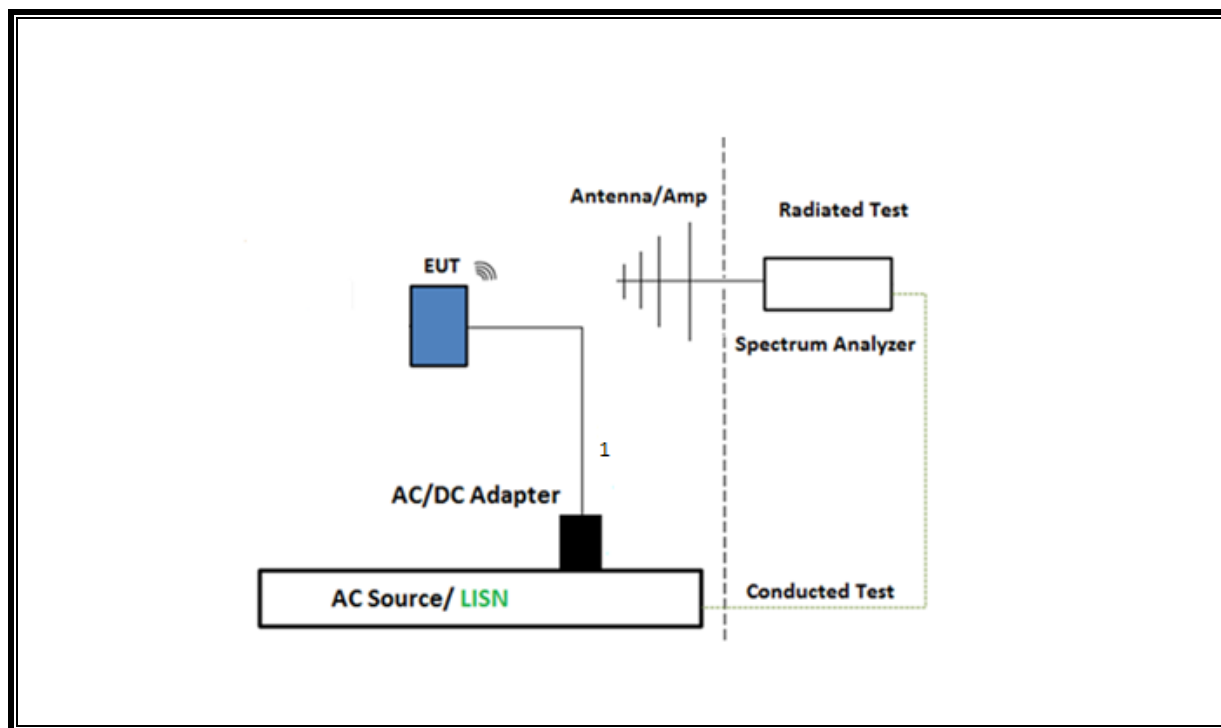
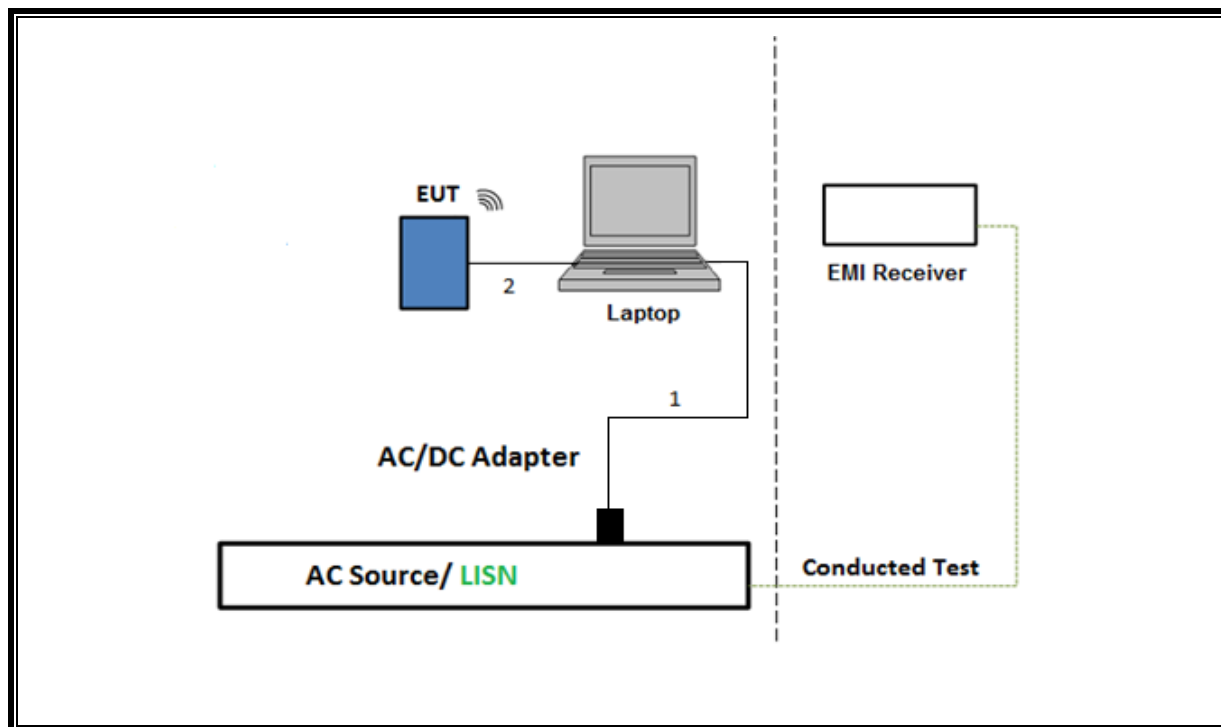
SUPPORT TEST EQUIPMENT						
Description		Manufacturer	Model	Serial Number	FCC ID/ DoC	
Laptop		Apple	Macbook Pro	C02VD7SAHV22	BCGA1708	
Laptop AC/DC adapter		Liteon Technology	A1424	NSW25679	DoC	
EUT AC/DC adapter		Apple	A1720	C3D8417A7R93KVPA8	DoC	
Conducted Switch Box		UL	n/a	208281	N/A	
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz		Pasternack Enterprises	PE7024-10	236358	N/A	
I/O CABLES (RF CONDUCTED TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	SMA	1	SMA	Shielded	0.75	To spectrum Analyzer
2	Antenna	2	SMA	Un-shielded	0.2	To Conducted Switch Box
3	USB-C	1	USB-C	Shielded	1.0	N/A
4	AC	1	AC	Un-shielded	2	N/A
I/O CABLES (RF RADIATED AND AC LINE CONDUCTED TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	AC	Un-shielded	2	N/A
2	USB	1	USB	Shielded	1	N/A

TEST SETUP

The EUT setup is shown as below. Test software exercised the radio card.

SETUP DIAGRAM FOR CONDUCTED TESTS

SETUP DIAGRAM FOR RADIATED TESTS Above 1 GHz

SETUP DIAGRAM FOR Below 1GHz and AC LINE CONDUCTED TEST**TEST SETUP- AC LINE CONDUCTED: LAPTOP CONFIGURATION**

7. MEASUREMENT METHOD

On Time and Duty Cycle: KDB 558074 D01 v05r02, Section 6.

6 dB BW: ANSI C63.10 Subclause -11.8.1 RBW $\geq$ DTS BW

Occupied BW (99%): ANSI C63.10-2013 Section 6.9.3

Output Power: ANSI C63.10 Subclause -11.9.1.3 Method PKPM1 Peak-reading power meter

Output Power: ANSI C63.10 Subclause -11.9.2.3.2 Measurement using gated average power meter.

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

Radiated emissions restricted frequency bands: ANSI C63.10 Subclause -11.12.1 & Clause 13

Conducted emissions in restricted frequency bands: ANSI C63.10 Subclause -11.12.2

Band-edge: ANSI C63.10 Subclause -11.13.3.2 & Clause 13: Integration method -Peak detection

Band-edge: ANSI C63.10 Subclause -11.13.3.3 & Clause 13: Integration method -Trace averaging with continuous transmission at full power

AC Power Line Conducted Emissions: ANSI C63.10-2013, Section 6.2.

Radiated emissions non-restricted frequency bands ANSI C63.10 Subclause -11.11 & Clause 13

Radiated Spurious Emissions Below 30MHz: ANSI C63.10-2013 Section 6.4 & 13

8. TEST AND MEASUREMENT EQUIPMENT

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

Description	Manufacturer	Model	ID Num	Cal Due	Last Cal
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201499	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	226673	01/09/2024	01/09/2023
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	Frankenstein	231249	02/29/2024	02/29/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	170063	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	206807	02/28/2024	02/28/2023
Filter Box, 1-18GHz 12 Port	UL-FR1	Frankenstein	216812	09/17/2023	09/17/2022
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	226672	01/09/2024	01/09/2023
RF Filter Box, 1-18GHz, 17 Ports	UL-FR1	RATS 2	226781	04/30/2024	04/30/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	169935	02/29/2024	02/29/2023
Antenna, Broadband Hybrid 30 MHz - 3 GHz	SUNOL SCIENCES CORP.	JB3	230635	01/31/2024	01/31/2023
Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	172363	01/31/2024	01/31/2023
Amplifier Assembly, 18-26.5GHz, 60dB Gain	AMPLICAL	AMP18G26.5-60	171583	02/29/2024	02/29/2023
Amplifier, 9KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	204041	08/24/2023	08/24/2022
Spectrum Analyzer, PSA, 3Hz to 26.5GHz	Keysight Technologies Inc	E4440A	81311	02/29/2024	02/29/2023
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	80397	02/28/2024	02/28/2023
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	85214	02/28/2024	02/28/2023
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A-544	87738	02/28/2024	02/28/2023
*Conducted Switch Box	N/A	CSB	221008	06/21/2023	06/21/2022
Conducted Switch Box	N/A	CSB	208281	04/30/2024	04/30/2023
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz	Pasternack Enterprises	PE7024-10	236358	Verified/Characterized before use	
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz	Pasternack Enterprises	PE7024-10	236355	Verified/Characterized before use	
Power Meter, P-series single channel	Keysight Technologies Inc	N1911A	90756	01/31/2024	01/31/2023
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight Technologies Inc	N1921A	90389	01/31/2024	01/31/2023
*Antenna, Passive Loop 100KHz to 30MHz	ETS-Lindgren	EM-6872	170015	07/28/2023	07/28/2022
*Antenna, Passive Loop 30Hz to 1MHz	Electro-Metrics	EM-6871	170013	07/28/2023	07/28/2022
AC Line Conducted					
Description	Manufacturer	Model	ID Num	Cal Due	Last Cal
EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESR	93091	02/29/2024	02/29/2023
LISN for Conducted Emissions CISPR-16	FISCHER CUSTOM COMMUNICATIONS	FCC-LISN-50/250-25-2-01-480V	175764	01/31/2024	01/31/2023
**Transient Limiter	TE	TBFL1	207996	08/15/2023	07/15/2022
UL AUTOMATION SOFTWARE					
Radiated Software	UL	UL EMC	Ver 9.5, May 1, 2023		
Conducted Software	UL	UL EMC	2020.8.16		
AC Line Conducted Software	UL	UL EMC	Ver 9.5, Mar 3, 2023		

*Testing was completed before equipment calibration date

**Cal Due date should be 07/15/2023 and according to internal quality system, it was extended to 08/15/2023.

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

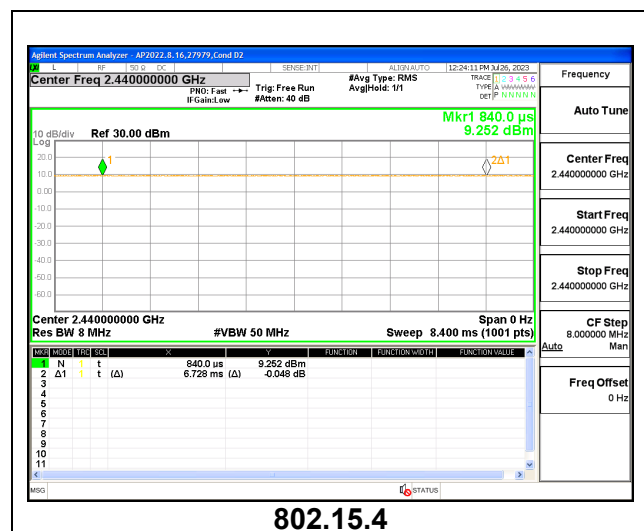
PROCEDURE

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						
802.15.4, 2440MHz	840.00	840.00	1.000	100.00%	0.00	0.010

DUTY CYCLE PLOTS



9.2. 99% BANDWIDTH**LIMITS**

None; for reporting purposes only.

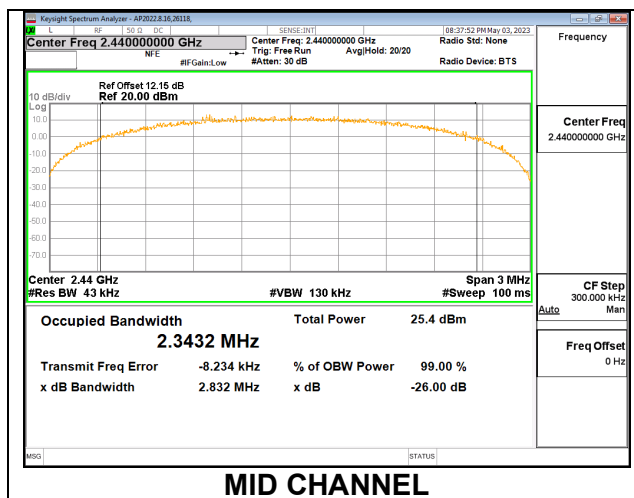
RESULTS

Only High Power modes result is reported, it covers all Low Power modes. Only Mid channel plot is reported to show setting parameter complies with testing method/procedure.

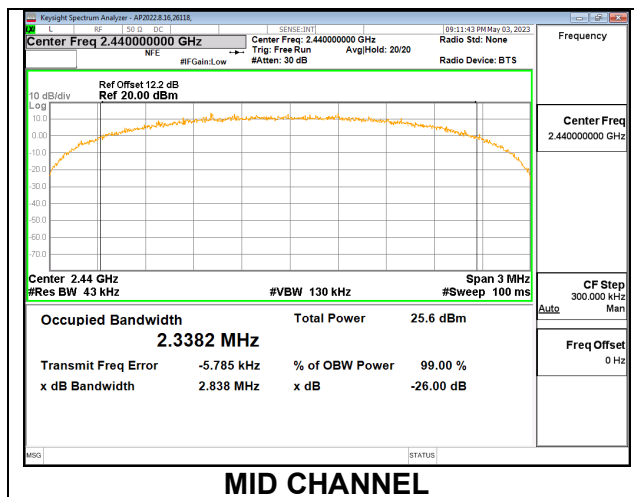
9.2.1. HIGH POWER

ANT 4

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2405	2.3332
Middle	2440	2.3432
High	2475	2.3519

ANT 3

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2405	2.3417
Middle	2440	2.3382
High	2475	2.3439



9.3. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

RSS-247 5.2 (a)

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

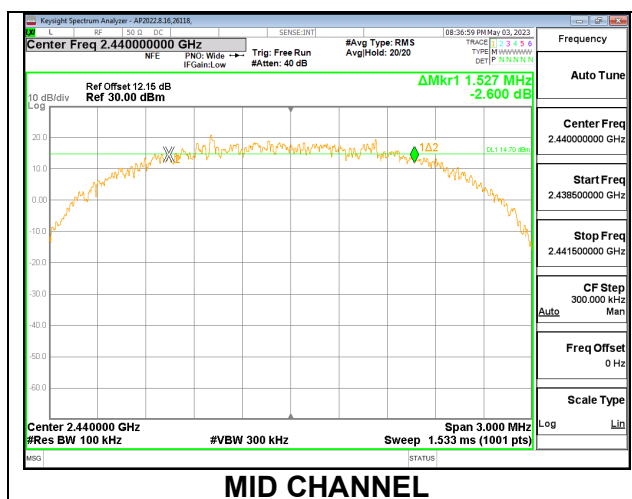
RESULTS

Only High-Power modes result is reported, it covers all Low Power modes. Only Mid channel plot is reported to show setting parameter complies with testing method/procedure.

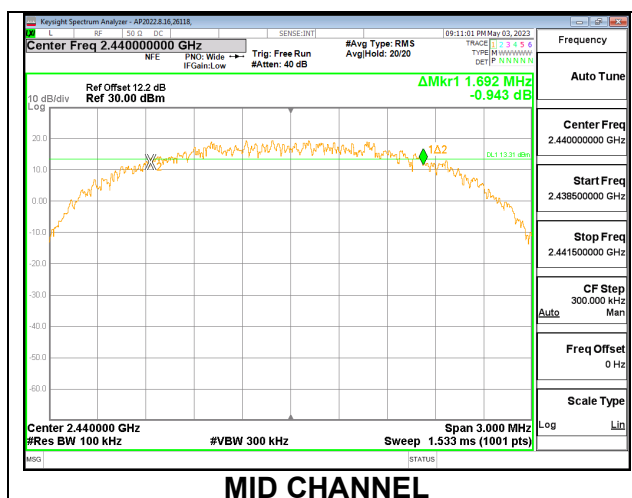
9.3.1. HIGH POWER

ANT 4

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2405	1.710	0.5
Middle	2440	1.527	0.5
High	2475	1.689	0.5

ANT 3

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2405	1.569	0.5
Middle	2440	1.692	0.5
High	2475	1.713	0.5



9.4. 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

Measurements perform using a wideband RF power meter.

The power output was measured on the EUT antenna port using SMA cable with 10dB attenuator connected to a power meter via wideband peak power sensor. Peak output power was read directly from the power meter.

DIRECTIONAL ANTENNA GAIN

For 1 TX:

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

9.4.1. **HIGH POWER****ANT 4**

Tested By:	26118
Date:	5/6/2023

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2405	21.72	30	-8.28
Middle	2440	21.69	30	-8.31
High	2475	21.51	30	-8.49

ANT 3

Tested By:	26118
Date:	5/6/2023

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2405	21.60	30	-8.40
Middle	2440	21.80	30	-8.20
High	2475	21.68	30	-8.32

9.4.2. **LOW POWER****ANT 4**

Tested By:	26118
Date:	5/6/2023

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2405	11.18	30	-18.82
Middle	2440	11.39	30	-18.61
High	2475	11.22	30	-18.78

ANT 3

Tested By:	26118
Date:	5/6/2023

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2405	13.35	30	-16.65
Middle	2440	13.10	30	-16.90
High	2475	13.04	30	-16.96

9.5. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband RF power meter.

The power output was measured on the EUT antenna port using SMA cable with 10dB attenuator connected to a power meter via wideband average power sensor. Gated average output power was read directly from power meter.

RESULTS

9.5.1. **HIGH POWER****ANT 4**

Tested By:	26118
Date:	5/6/2023

Channel	Frequency (MHz)	AV power (dBm)
Low	2405	20.86
Middle	2440	20.93
High	2475	20.79

ANT 3

Tested By:	26118
Date:	5/6/2023

Channel	Frequency (MHz)	AV power (dBm)
Low	2405	20.90
Middle	2440	20.9
High	2475	20.84

9.5.2. **LOW POWER****ANT 4**

Tested By:	26118
Date:	5/6/2023

Channel	Frequency (MHz)	AV power (dBm)
Low	2405	10.40
Middle	2440	10.39
High	2475	10.47

ANT 3

Tested By:	26118
Date:	5/6/2023

Channel	Frequency (MHz)	AV power (dBm)
Low	2405	12.35
Middle	2440	12.38
High	2475	12.31

9.6. 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

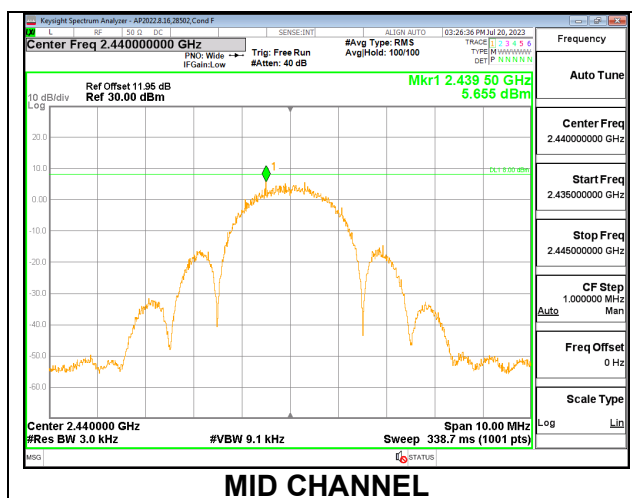
Only Mid channel plot is reported to show setting parameter complies with testing method/procedure.

Only High-Power modes result is reported, it covers all Low Power modes.

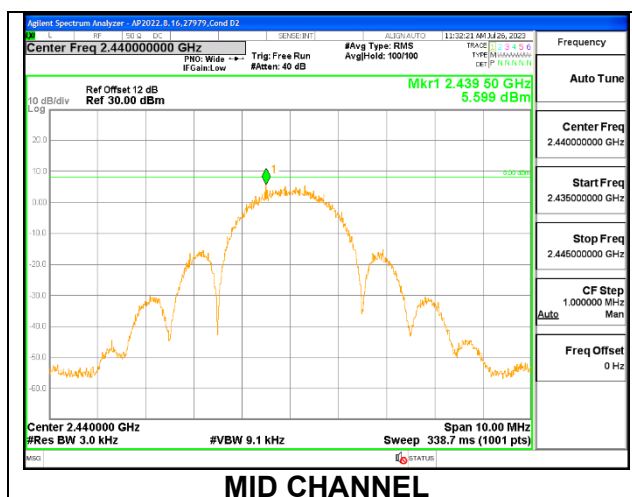
9.6.1. HIGH POWER

ANT 4

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2405	5.960	8	-2.04
Middle	2440	5.655	8	-2.35
High	2475	5.407	8	-2.59

**ANT 3**

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2405	5.566	8	-2.43
Middle	2440	5.599	8	-2.40
High	2475	5.798	8	-2.20



9.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

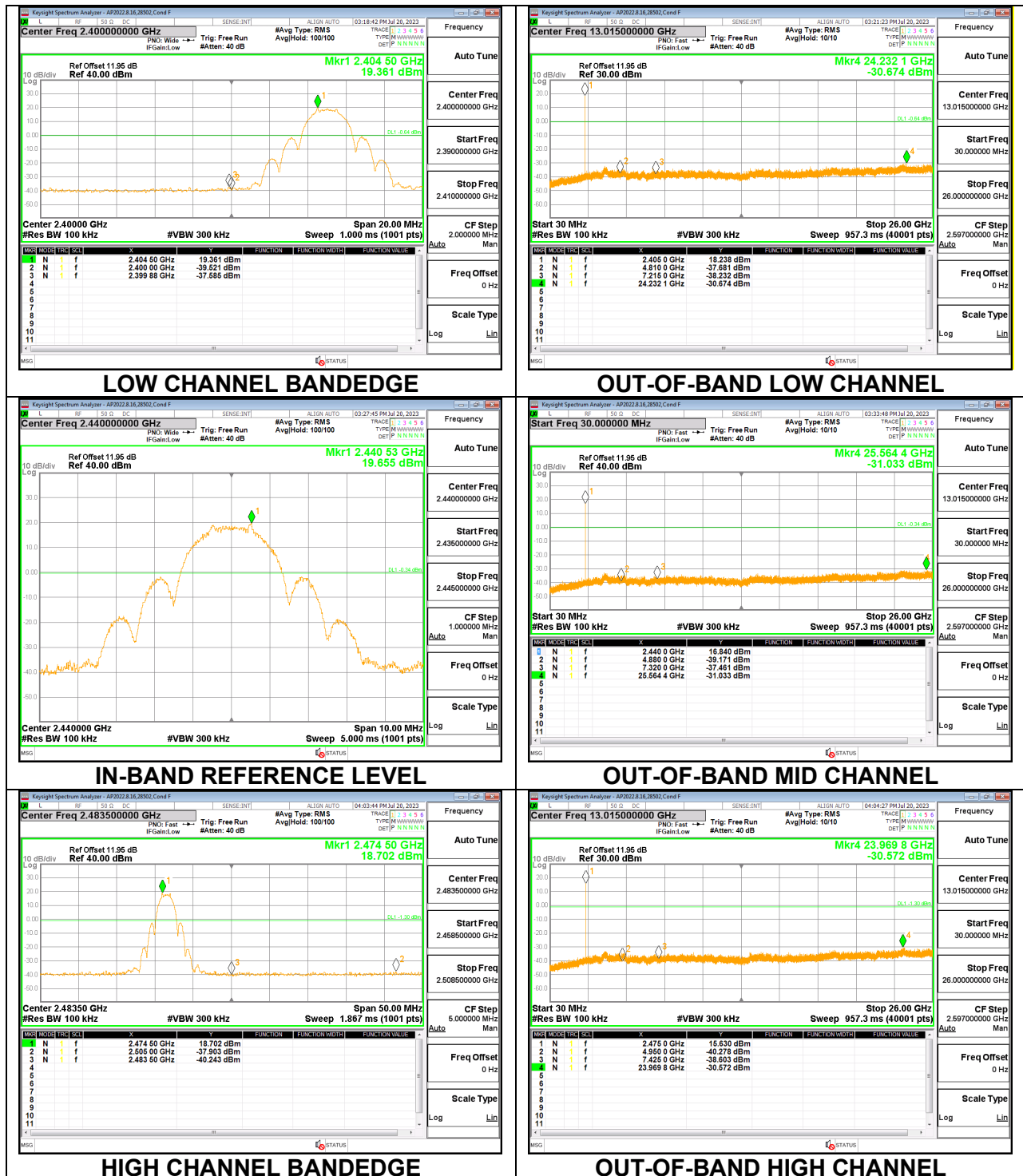
RSS-247 5.5

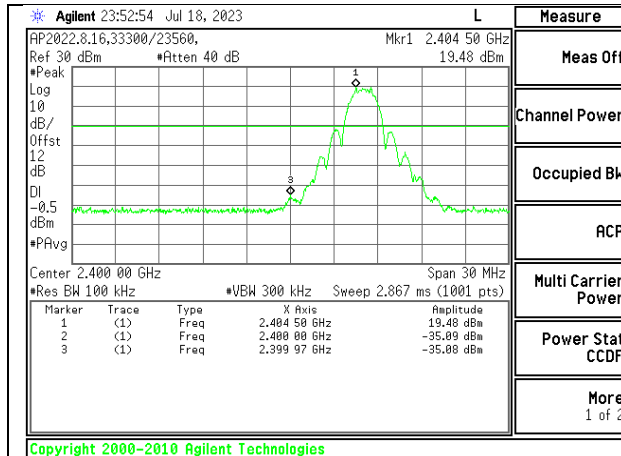
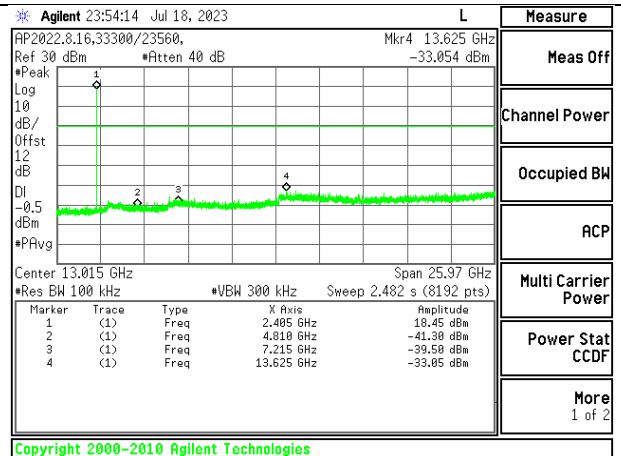
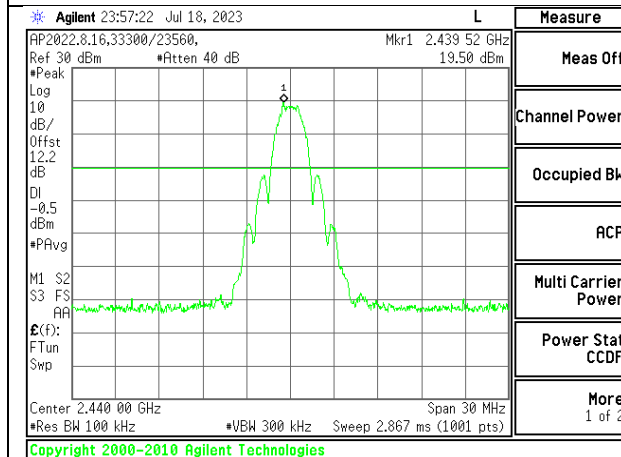
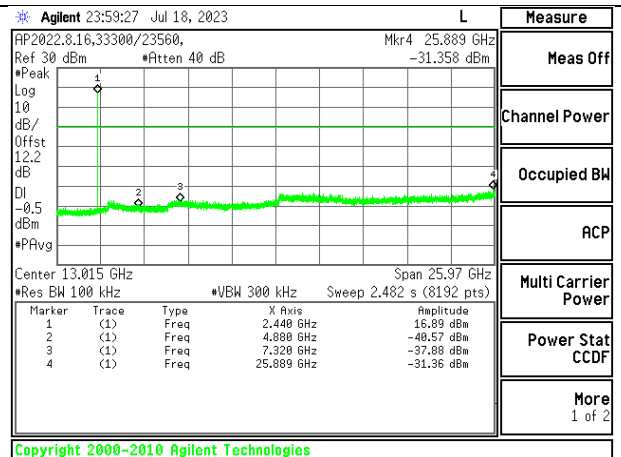
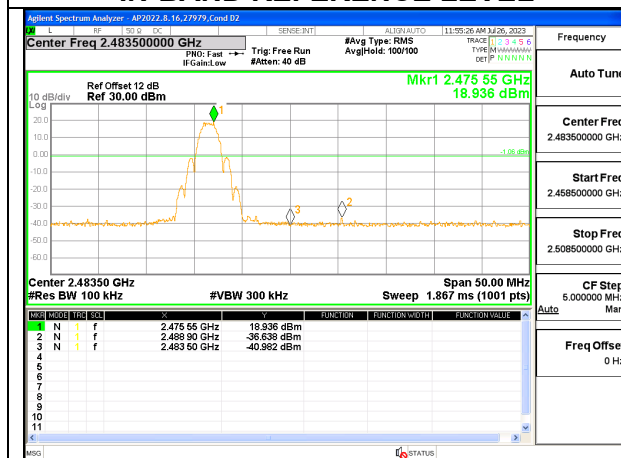
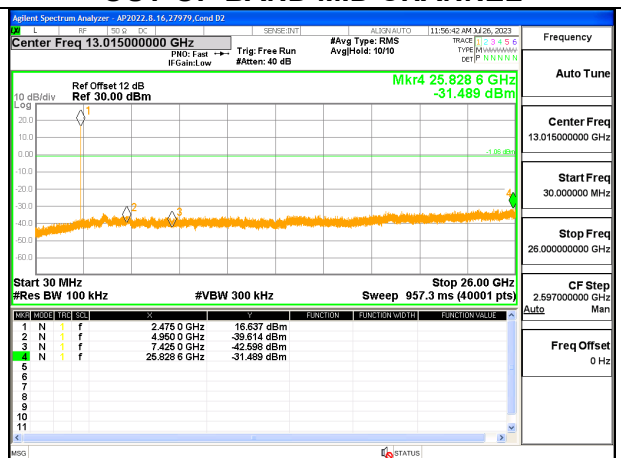
Output power was measured based on the use of a peak measurement; therefore the required attenuation is 20 dBc.

RESULTS

9.7.1. HIGH POWER

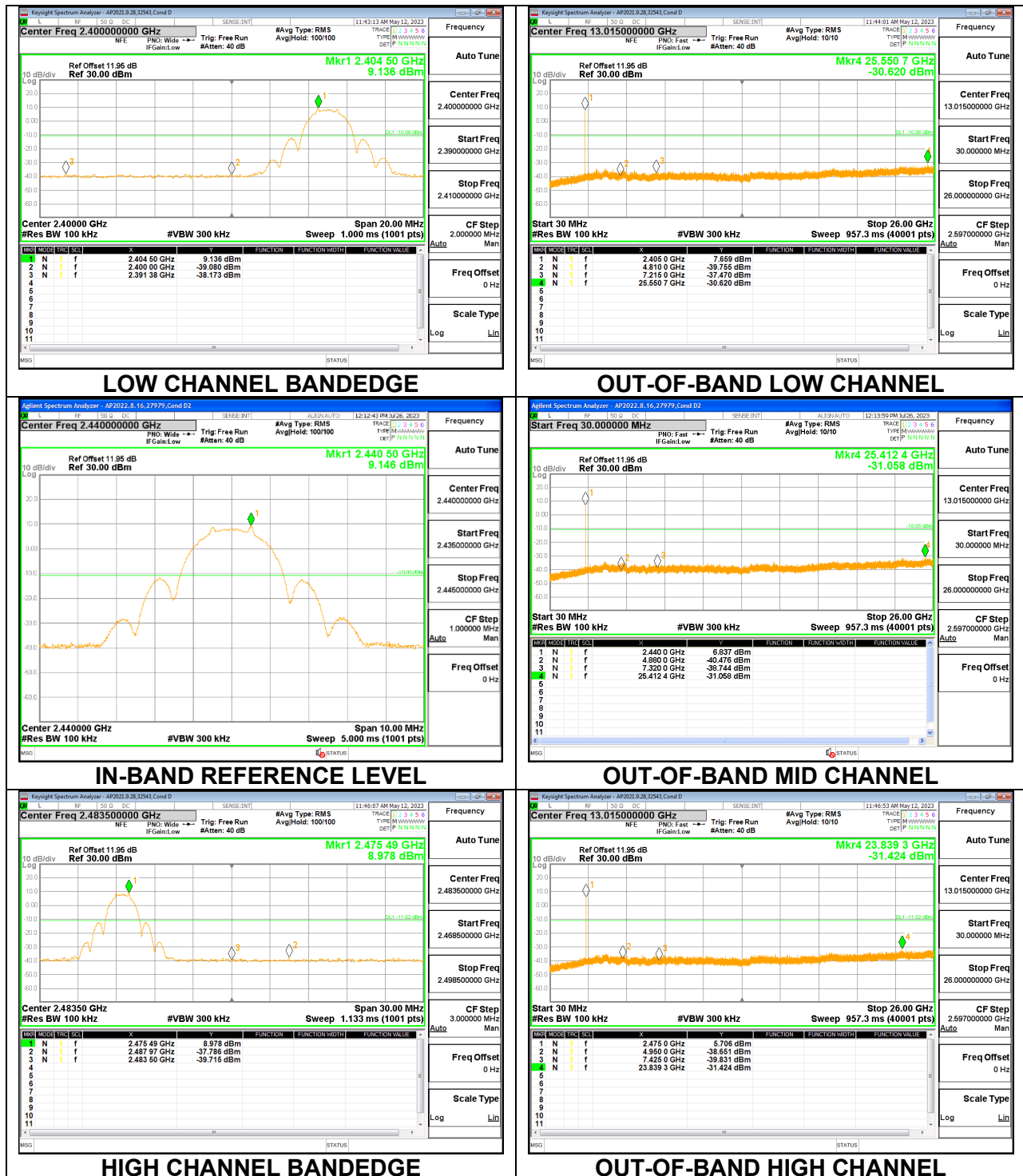
ANT 4

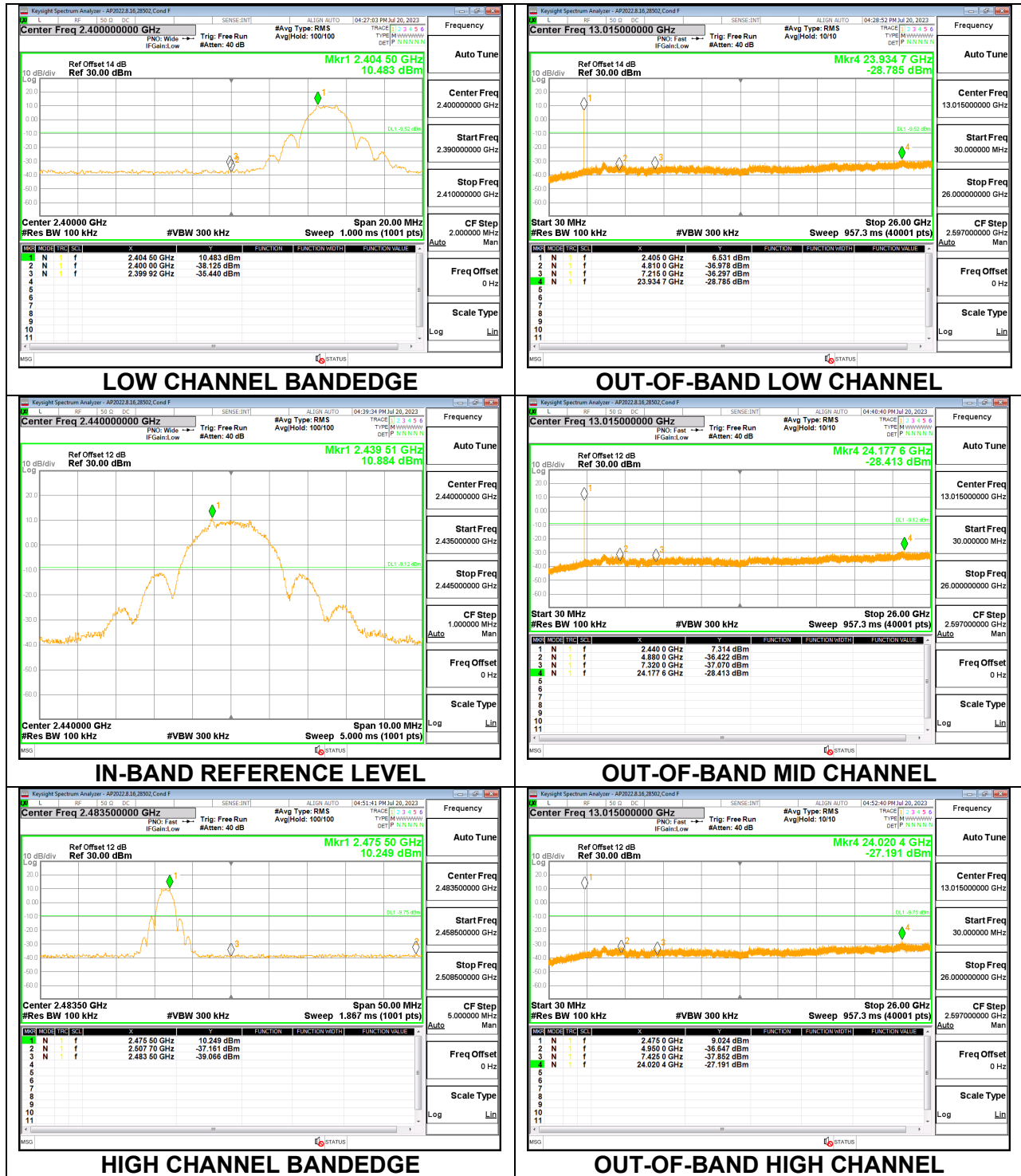


ANT 3**LOW CHANNEL BANDEDGE****OUT-OF-BAND LOW CHANNEL****IN-BAND REFERENCE LEVEL****OUT-OF-BAND MID CHANNEL****HIGH CHANNEL BANDEDGE****OUT-OF-BAND HIGH CHANNEL**

9.7.2. LOW POWER

ANT 4



ANT 3

10. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

RSS-GEN, Section 8.9 and 8.10.

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	

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. Peak detection is used unless otherwise noted as quasi-peak.

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz 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.

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.

Note: The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as report in the table) using free space impedance of 377 Ohms. For example, the measurement at frequency X kHz resulted in

a level of Y dBuV/m, which is equivalent to $Y - 51.5 = Z$ dBuA/m, which has the same margin, W dB to the corresponding RSS-Gen Table 6 limit as it has to 15.209(a) limit.

Based 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

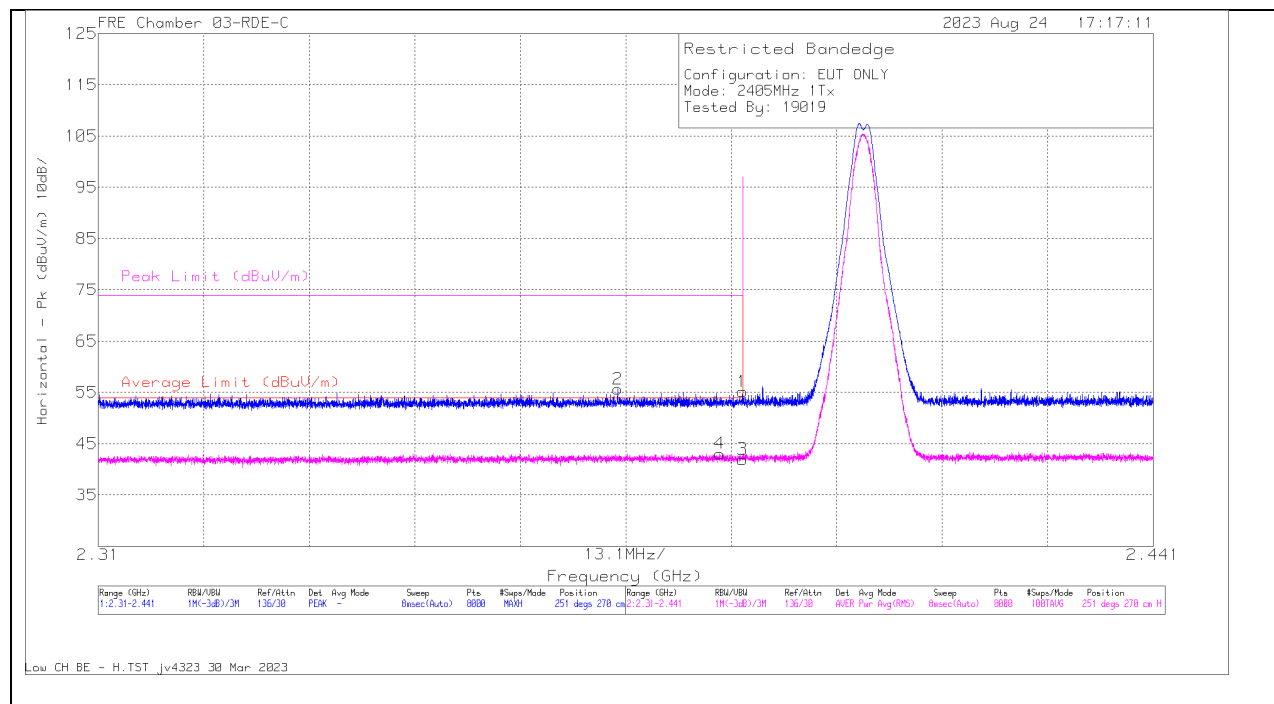
OFS and chamber correlation testing had been performed and chamber measured test result is the worst-case test result.

10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. ANT 4, 802.15.4 HIGH POWER

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



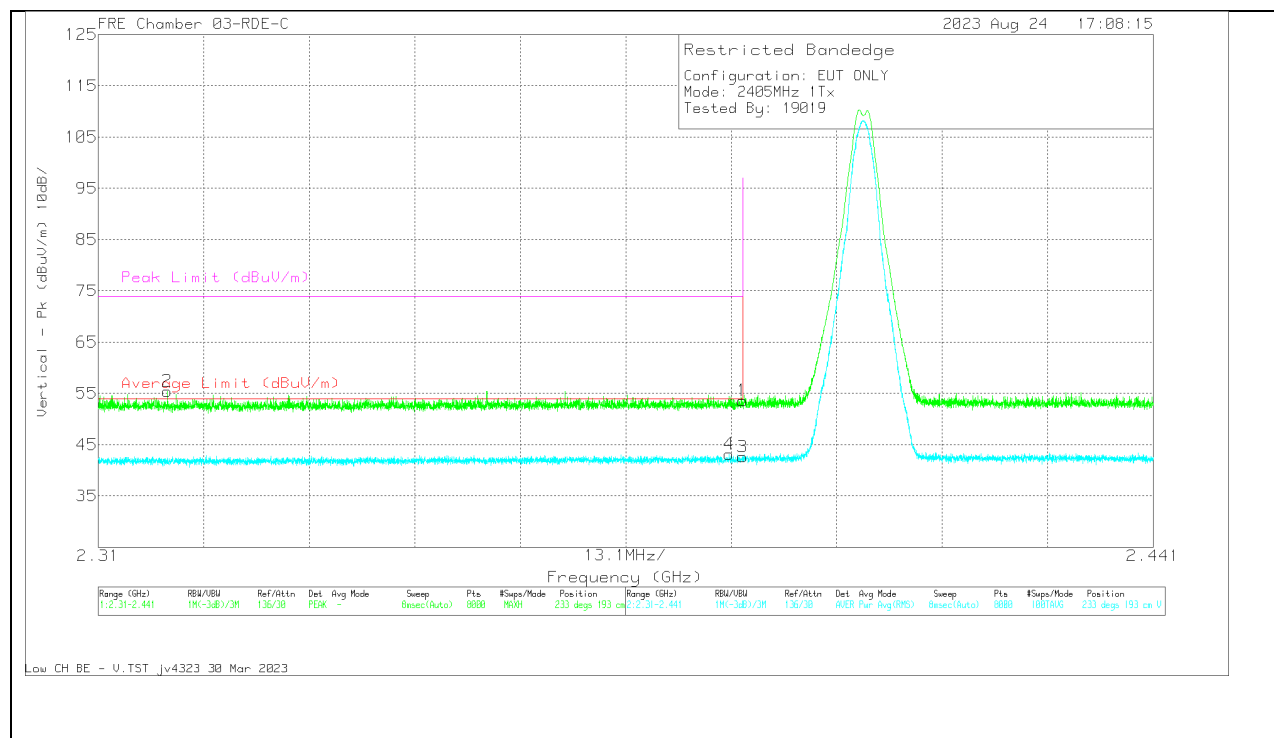
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	62.84	PK	32.1	-39.8	55.14	-	-	74	-18.86	251	270	H
2	* 2.374493	63.49	PK	32	-39.85	55.64	-	-	74	-18.36	251	270	H
3	* 2.39	49.63	RMS	32.1	-39.8	41.93	54	-12.07	-	-	251	270	H
4	* 2.387185	50.87	RMS	32.1	-39.9	43.07	54	-10.93	-	-	251	270	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL RESULT

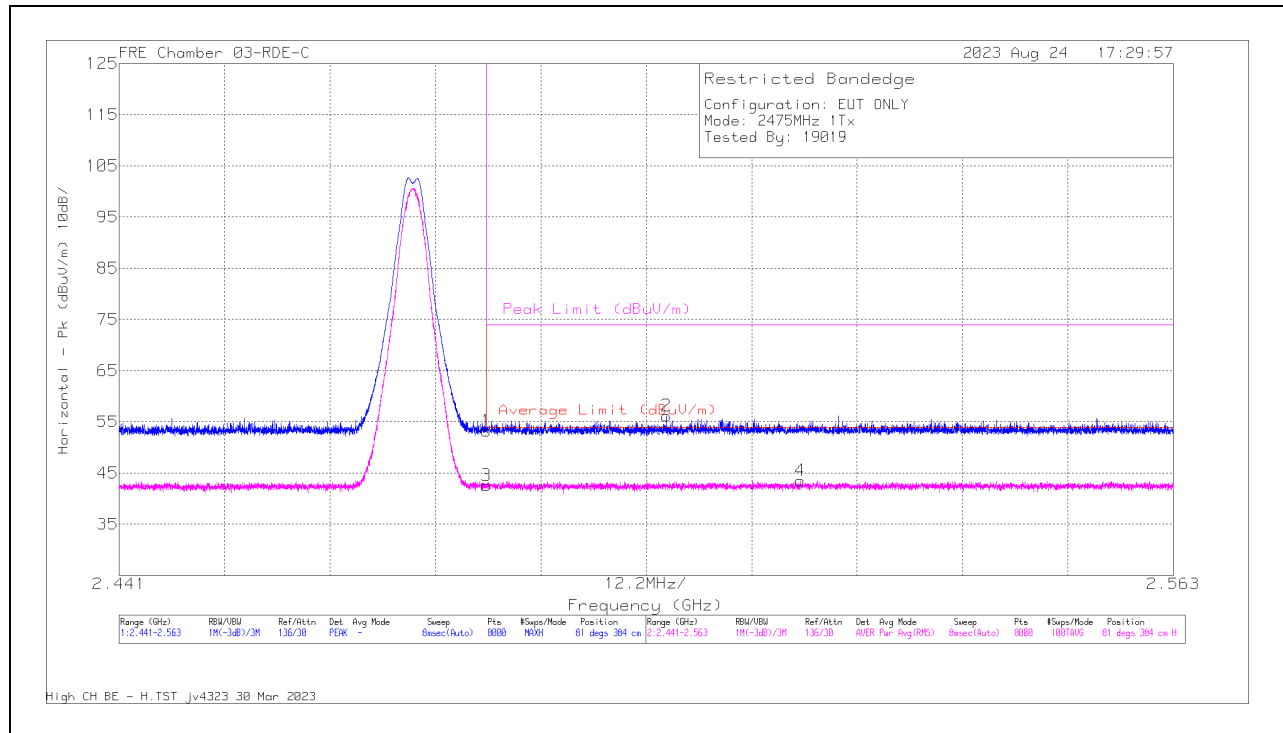


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	61.28	Pk	32.1	-39.8	53.58	-	-	74	-20.42	233	193	V
2	* 2.318549	63.59	Pk	31.8	-39.95	55.44	-	-	74	-18.56	233	193	V
3	* 2.39	50.32	RMS	32.1	-39.8	42.62	54	-11.38	-	-	233	193	V
4	* 2.388331	50.99	RMS	32.1	-39.93	43.16	54	-10.84	-	-	233	193	V

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

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL)**HORIZONTAL RESULT**

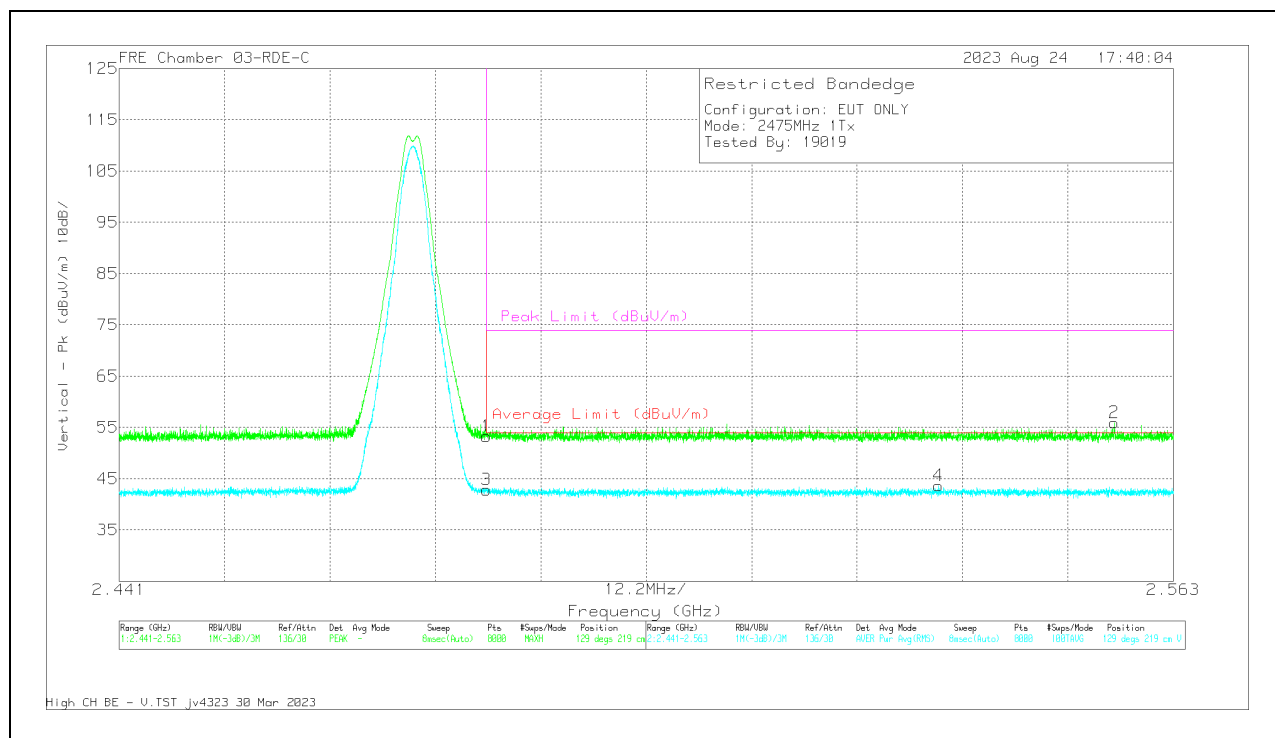
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mHz	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	60.61	Pk	32.2	-39.6	53.21	-	-	74	-20.79	81	384	H
3	* 2.4835	49.96	RMS	32.2	-39.6	42.56	54	-11.44	-	-	81	384	H
2	2.504357	63.51	Pk	32.3	-39.64	56.17	-	-	74	-17.83	81	384	H
4	2.519838	50.73	RMS	32.3	-39.52	43.51	54	-10.49	-	-	81	384	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	60.68	Pk	32.2	-39.6	53.28	-	-	74	-20.72	129	219	V
3	* 2.4835	50.25	RMS	32.2	-39.6	42.85	54	-11.15	-	-	129	219	V
4	2.535837	50.86	RMS	32.3	-39.52	43.64	54	-10.36	-	-	129	219	V
2	2.556168	63.06	Pk	32.3	-39.42	55.94	-	-	74	-18.06	129	219	V

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

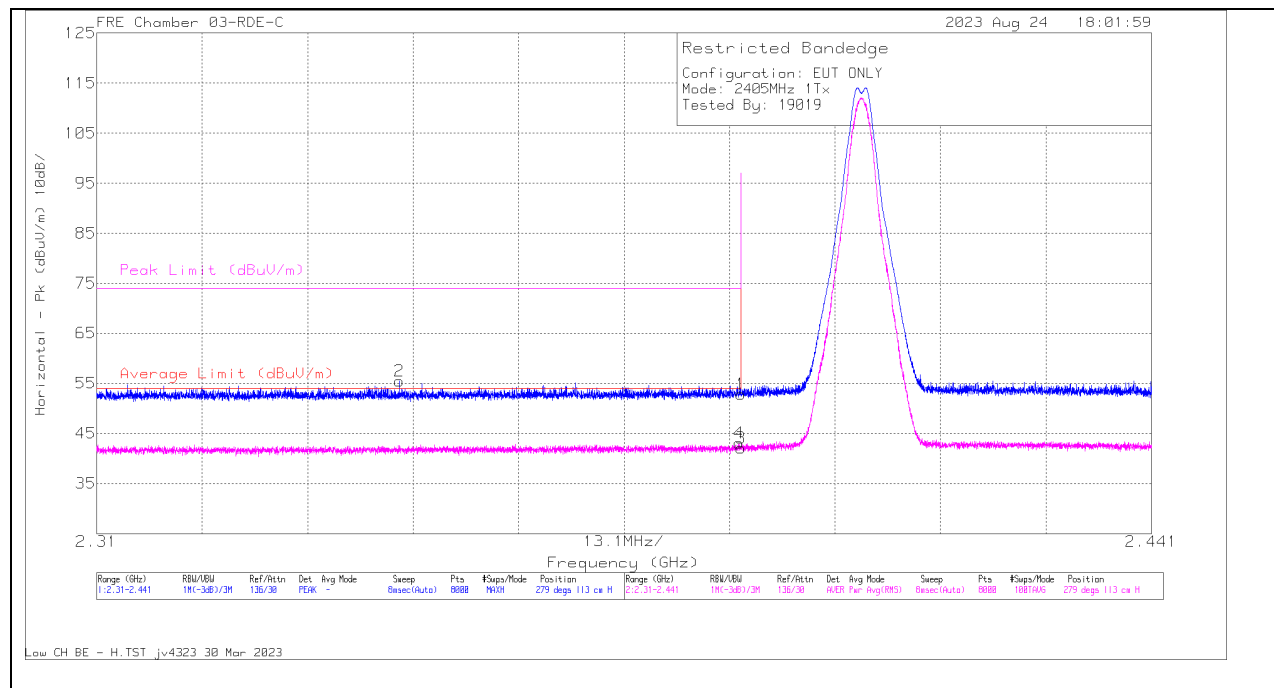
Pk - Peak detector

RMS - RMS detection

10.1.2. ANT 3, 802.15.4 HIGH POWER

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



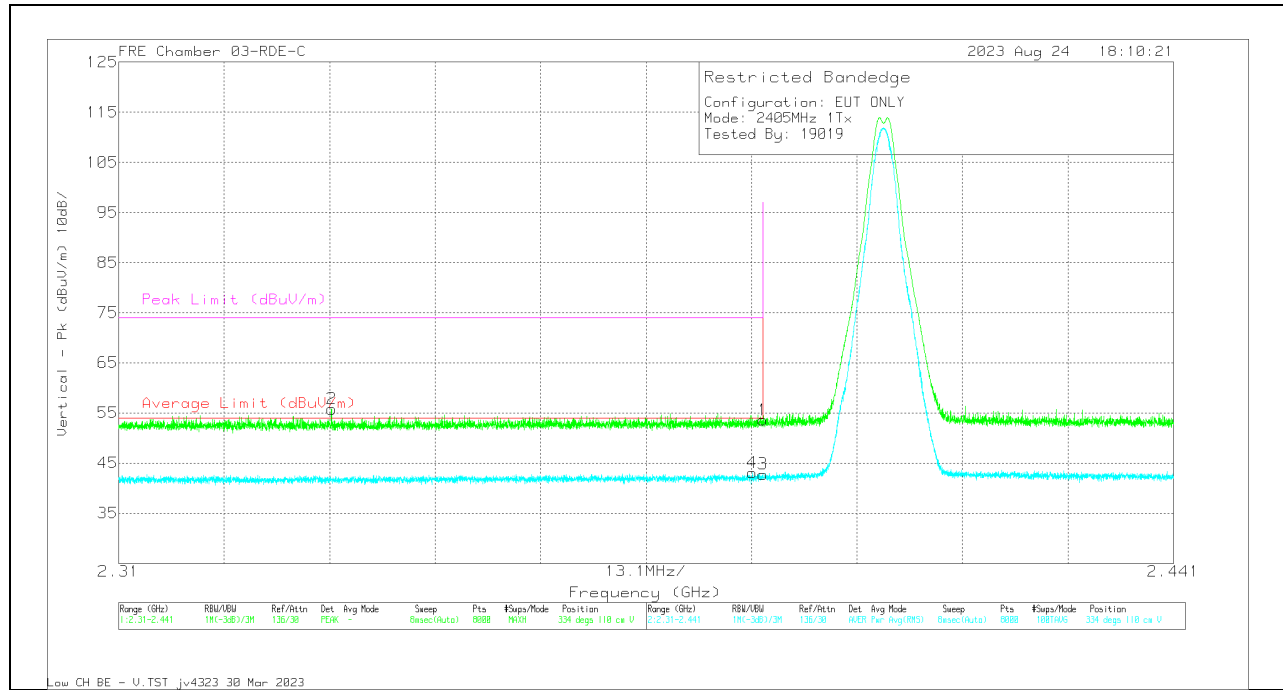
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	60.6	Pk	32.1	-39.8	52.9	-	-	74	-21.1	279	113	H
2	* 2.347569	63.54	Pk	31.9	-39.96	55.48	-	-	74	-18.52	279	113	H
3	* 2.39	49.81	RMS	32.1	-39.8	42.11	54	-11.89	-	-	279	113	H
4	* 2.389772	50.8	RMS	32.1	-39.85	43.05	54	-10.95	-	-	279	113	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT

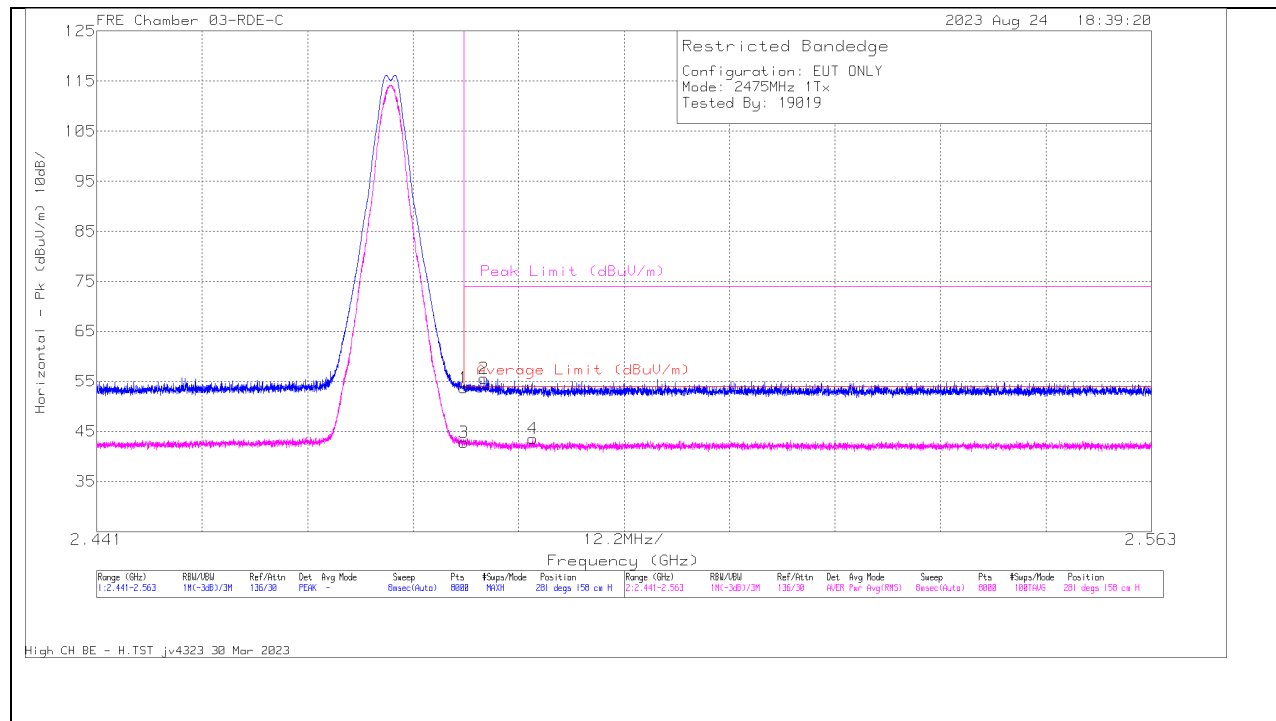


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	61.35	Pk	32.1	-39.8	53.65	-	-	74	-20.35	334	110	V
2	* 2.336432	63.83	Pk	31.9	-39.94	55.79	-	-	74	-18.21	334	110	V
3	* 2.39	50.48	RMS	32.1	-39.8	42.78	54	-11.22	-	-	334	110	V
4	* 2.388724	50.91	RMS	32.1	-39.97	43.04	54	-10.96	-	-	334	110	V

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

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL)**HORIZONTAL RESULT**

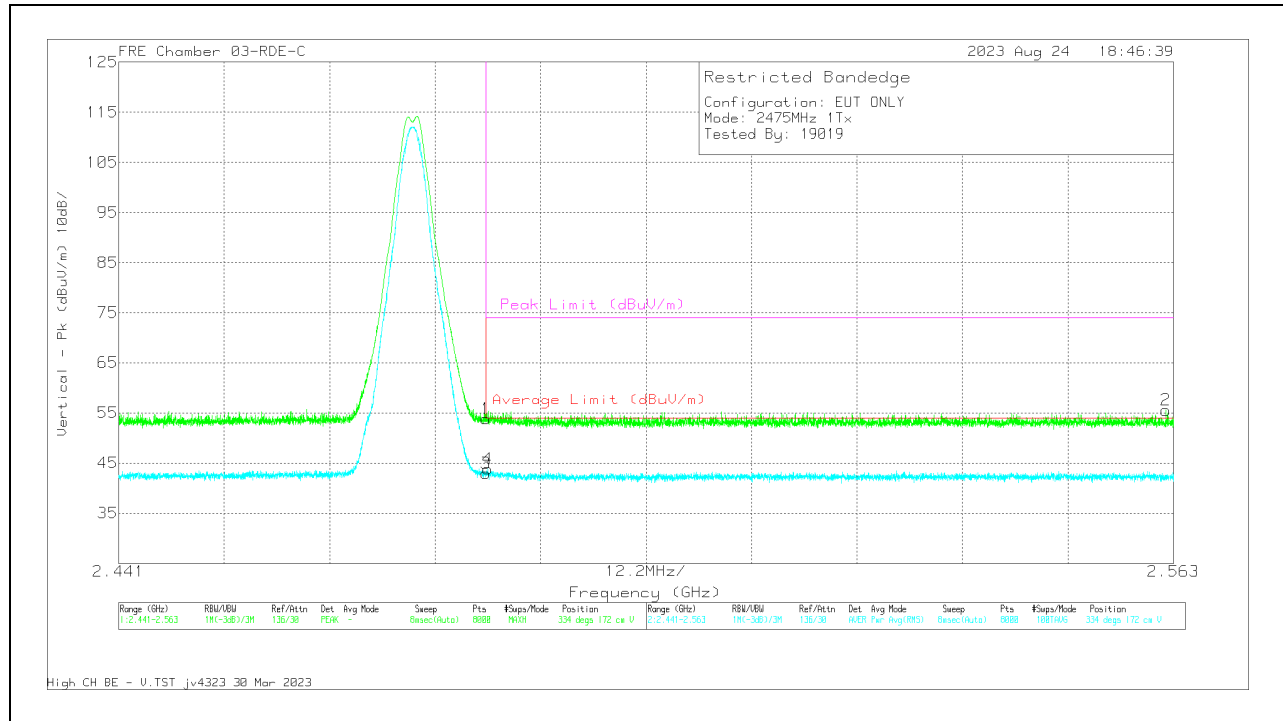
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3MHz	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	61.09	Pk	32.2	-39.6	53.69	-	-	74	-20.31	281	158	H
2	* 2.48581	63.05	Pk	32.2	-39.62	55.63	-	-	74	-18.37	281	158	H
3	* 2.4835	50.23	RMS	32.2	-39.6	42.83	54	-11.17	-	-	281	158	H
4	* 2.491423	50.9	RMS	32.3	-39.6	43.6	54	-10.4	-	-	281	158	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Motor Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	61.3	Pk	32.2	-39.6	53.9	-	-	74	-20.1	334	172	V
3	* 2.4835	50.37	RMS	32.2	-39.6	42.97	54	-11.03	-	-	334	172	V
4	* 2.48369	51.26	RMS	32.2	-39.6	43.86	54	-10.14	-	-	334	172	V
2	2.562131	62.74	Pk	32.3	-39.5	55.54	-	-	74	-18.46	334	172	V

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

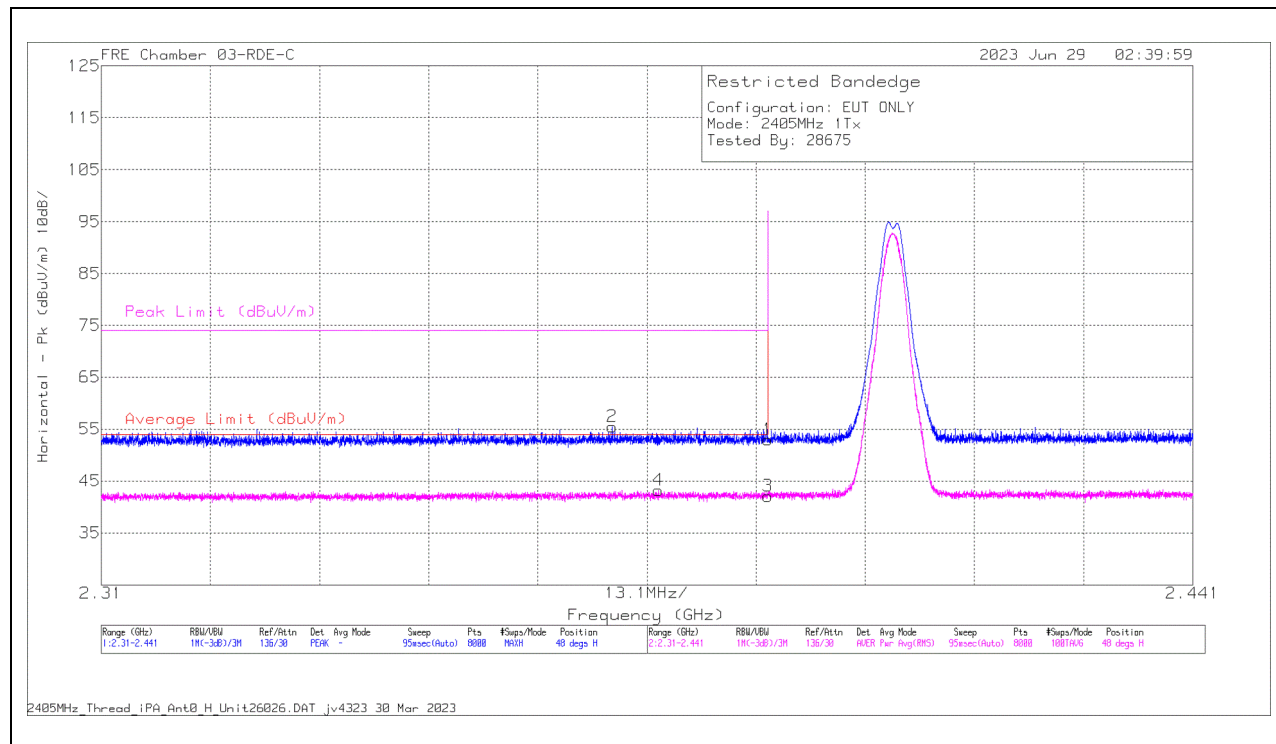
PK - Peak detector

RMS - RMS detection

10.1.3. ANT 4, 802.15.4 LOW POWER

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Trace Markers

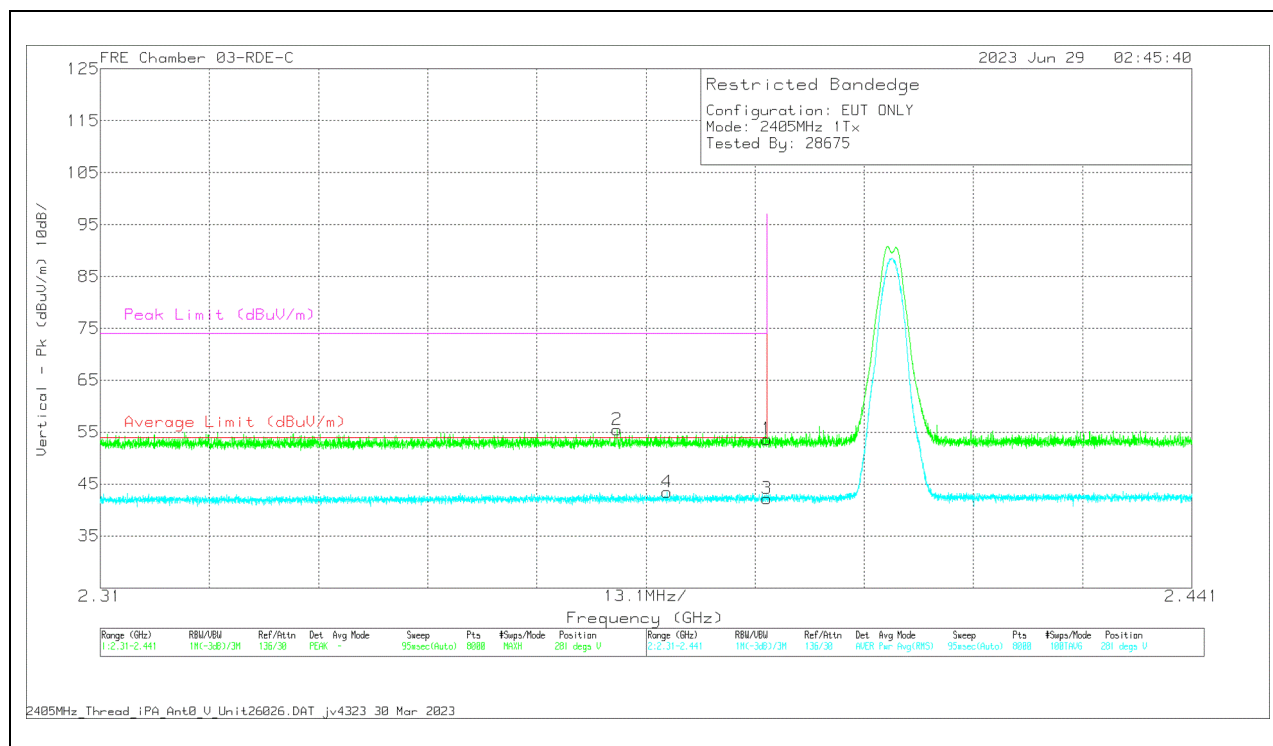
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	60.64	Pk	32.1	-39.8	52.94	-	-	74	-21.06	48	294	H
2	* 2.371365	63.39	Pk	32	-39.9	55.49	-	-	74	-18.51	48	294	H
3	* 2.39	49.83	RMS	32.1	-39.8	42.13	54	-11.87	-	-	48	294	H
4	* 2.376884	51.15	RMS	32	-39.9	43.25	54	-10.75	-	-	48	294	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT

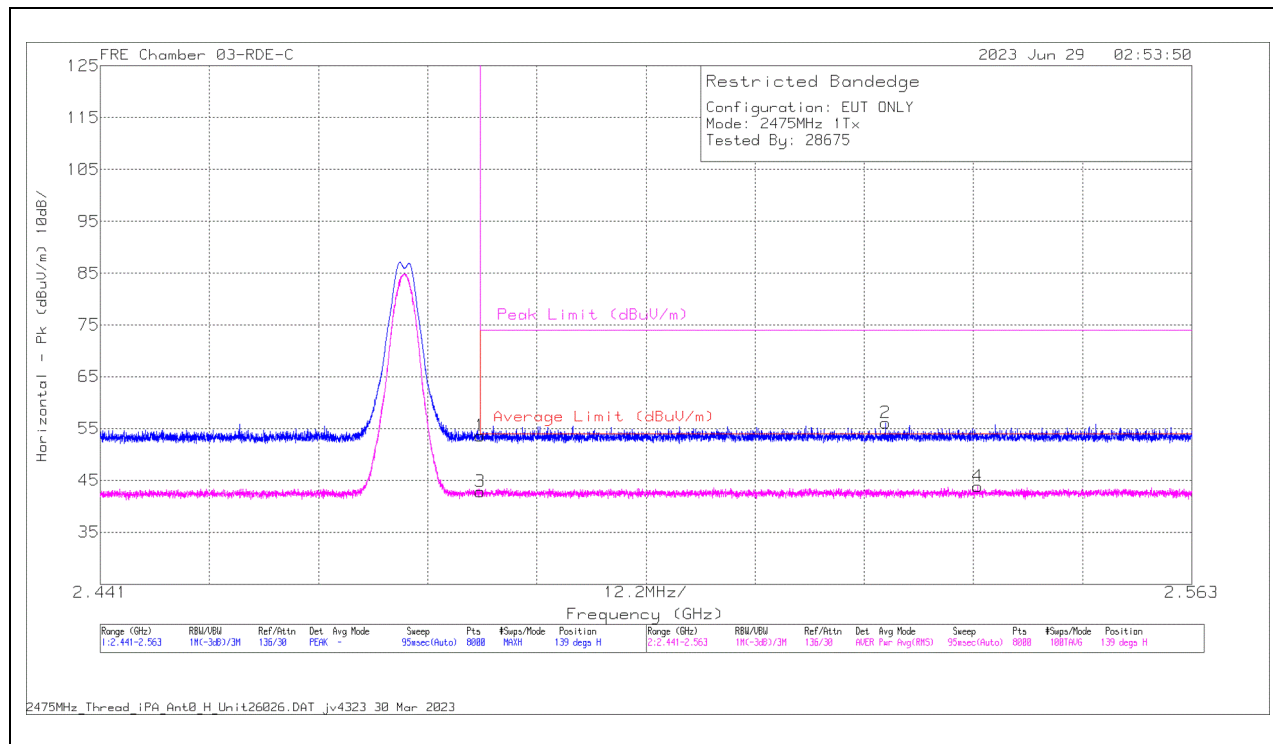


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	61.36	Pk	32.1	-39.8	53.66	-	-	74	-20.34	281	294	V
2	* 2.372003	63.36	Pk	32	-39.9	55.46	-	-	74	-18.54	281	294	V
3	* 2.39	49.92	RMS	32.1	-39.8	42.22	54	-11.78	-	-	281	294	V
4	* 2.37803	51.32	RMS	32	-39.9	43.42	54	-10.58	-	-	281	294	V

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

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL)**HORIZONTAL RESULT**

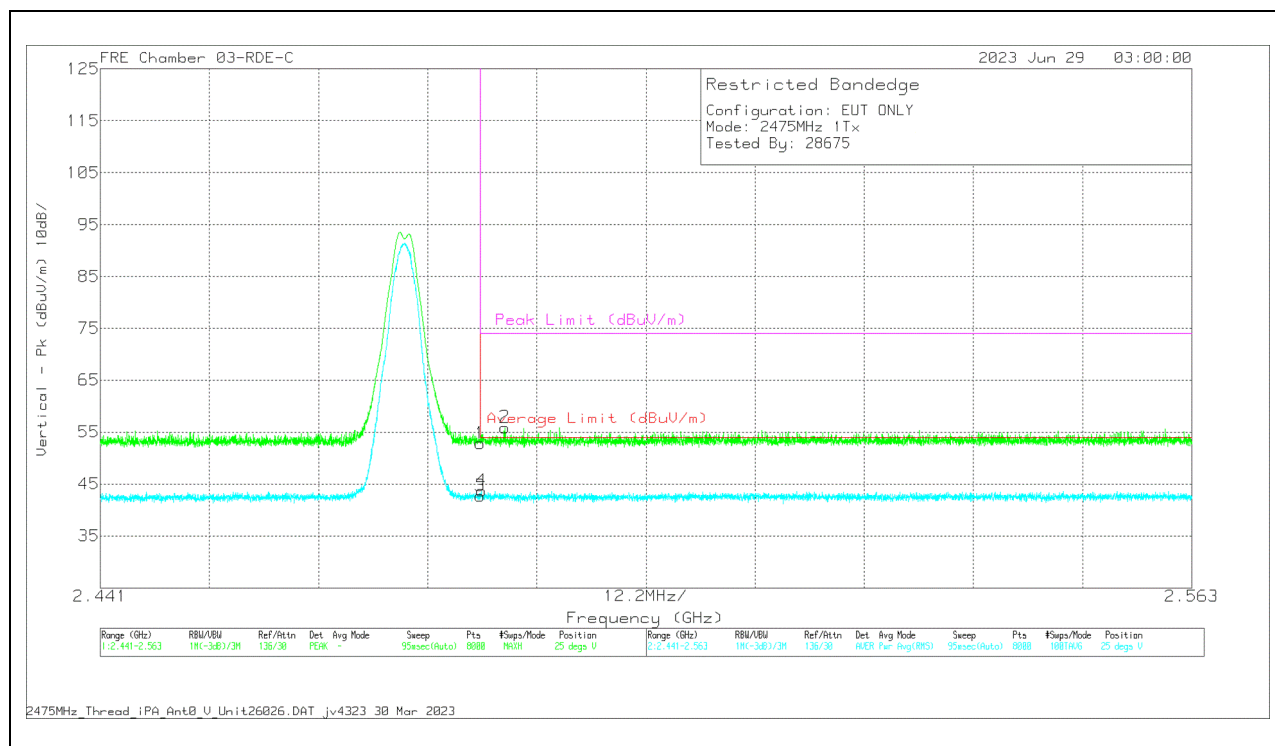
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	60.99	Pk	32.2	-39.6	53.59	-	-	74	-20.41	139	193	H
3	* 2.4835	50.21	RMS	32.2	-39.6	42.81	54	-11.19	-	-	139	193	H
2	2.528775	63.46	Pk	32.3	-39.68	56.08	-	-	74	-17.92	139	193	H
4	2.53904	51.08	RMS	32.3	-39.5	43.88	54	-10.12	-	-	139	193	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3MHz	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	60.3	Pk	32.2	-39.6	52.9	-	-	74	-21.1	25	262	V
2	* 2.486253	63.34	Pk	32.2	-39.63	55.91	-	-	74	-18.09	25	262	V
3	* 2.4835	50.13	RMS	32.2	-39.6	42.73	54	-11.27	-	-	25	262	V
4	* 2.483584	51.07	RMS	32.2	-39.6	43.67	54	-10.33	-	-	25	262	V

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

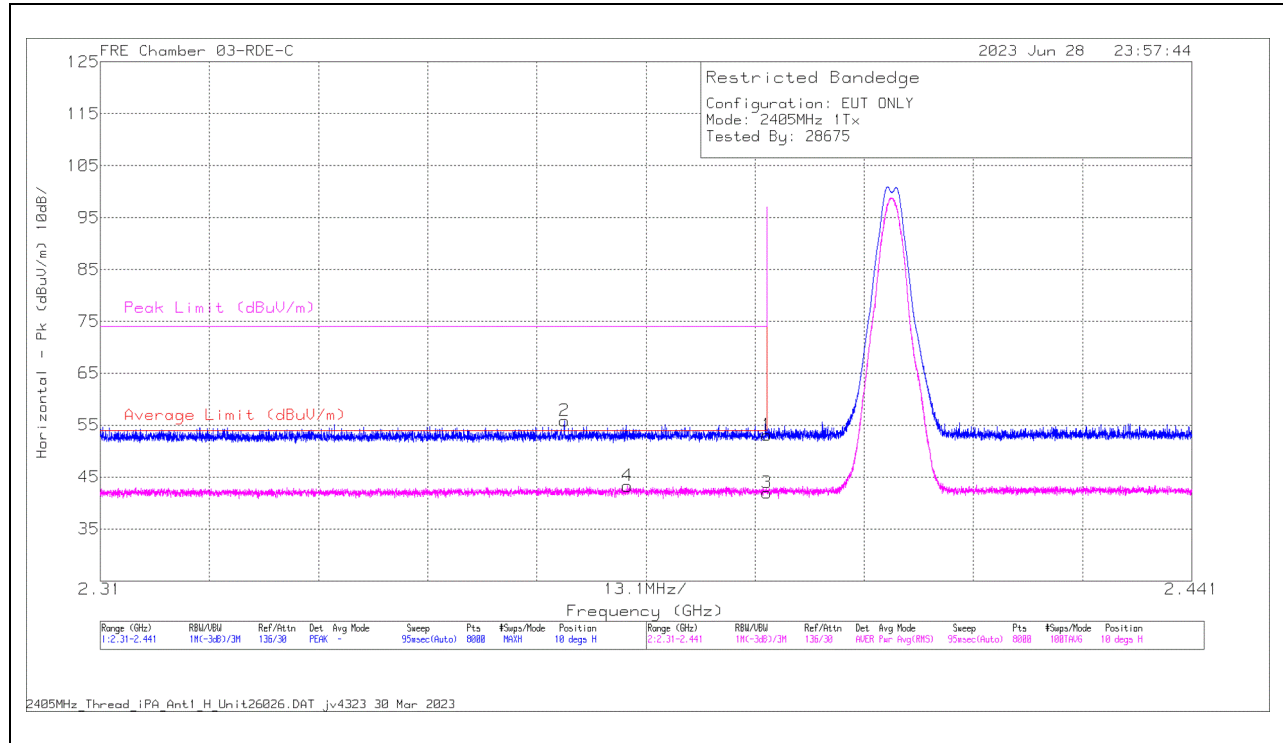
Pk - Peak detector

RMS - RMS detection

10.1.4. ANT 3, 802.15.4 LOW POWER

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



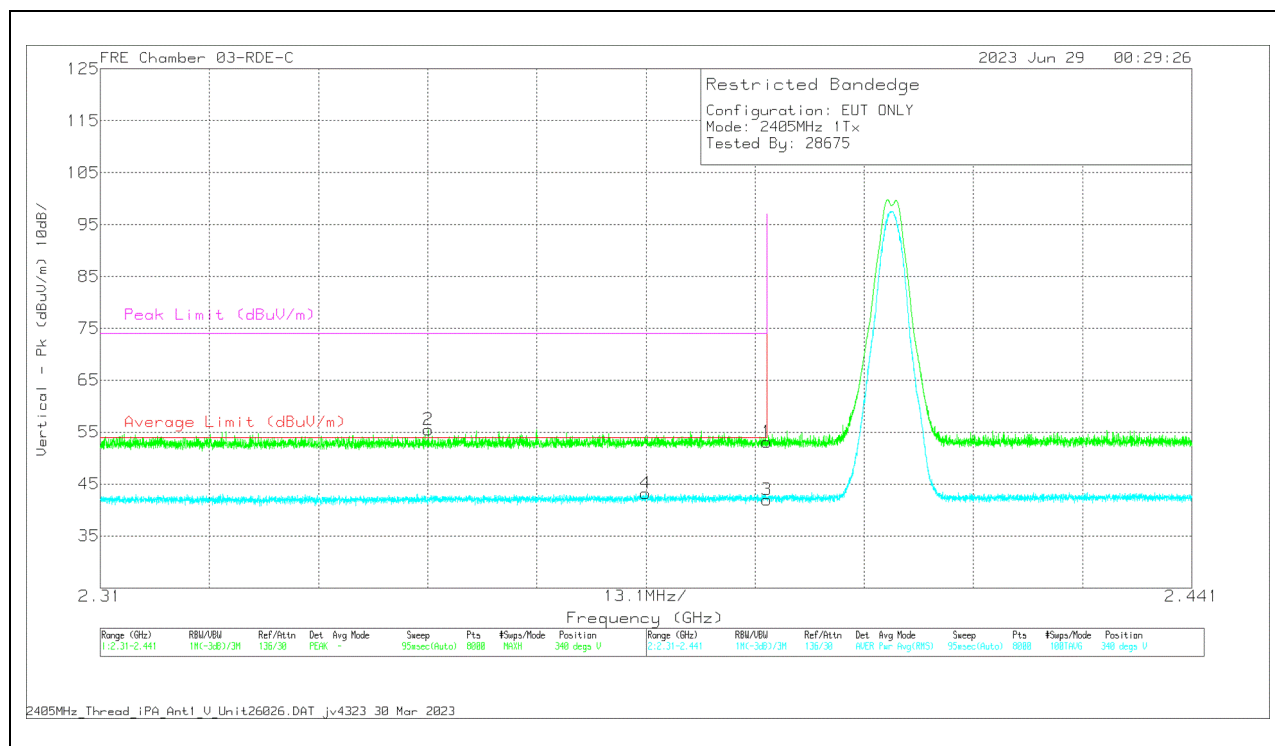
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	60.78	Pk	32.1	-39.8	53.08	-	-	74	-20.92	10	99	H
2	* 2.365715	63.77	Pk	32	-39.97	55.8	-	-	74	-18.2	10	99	H
3	* 2.39	49.62	RMS	32.1	-39.8	41.92	54	-12.08	-	-	10	99	H
4	* 2.373264	51.18	RMS	32	-39.9	43.28	54	-10.72	-	-	10	99	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT

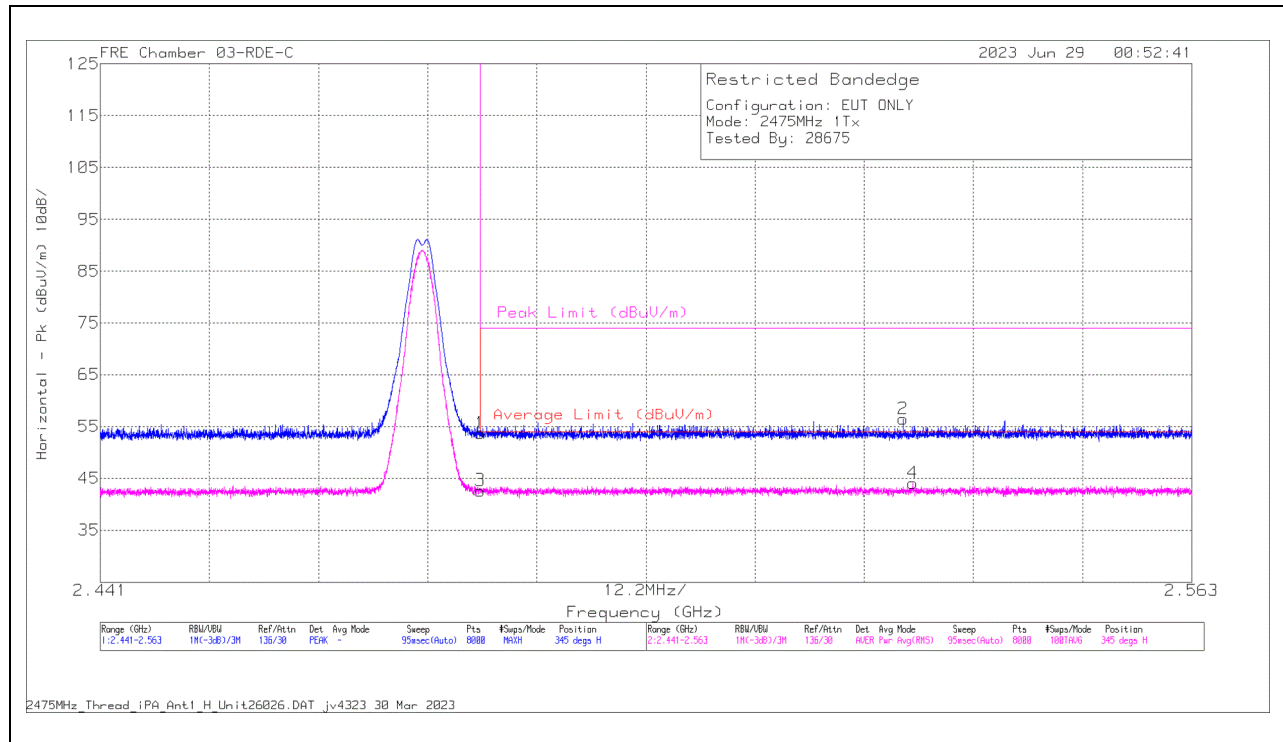


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3MHz	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	60.83	Pk	32.1	-39.8	63.13	-	-	74	-20.87	340	117	V
2	* 2.349387	63.46	Pk	31.9	-39.9	55.46	-	-	74	-18.54	340	117	V
3	* 2.39	49.64	RMS	32.1	-39.8	41.94	54	-12.06	-	-	340	117	V
4	* 2.375426	51.11	RMS	32	-39.84	43.27	54	-10.73	-	-	340	117	V

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

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL)**HORIZONTAL RESULT**

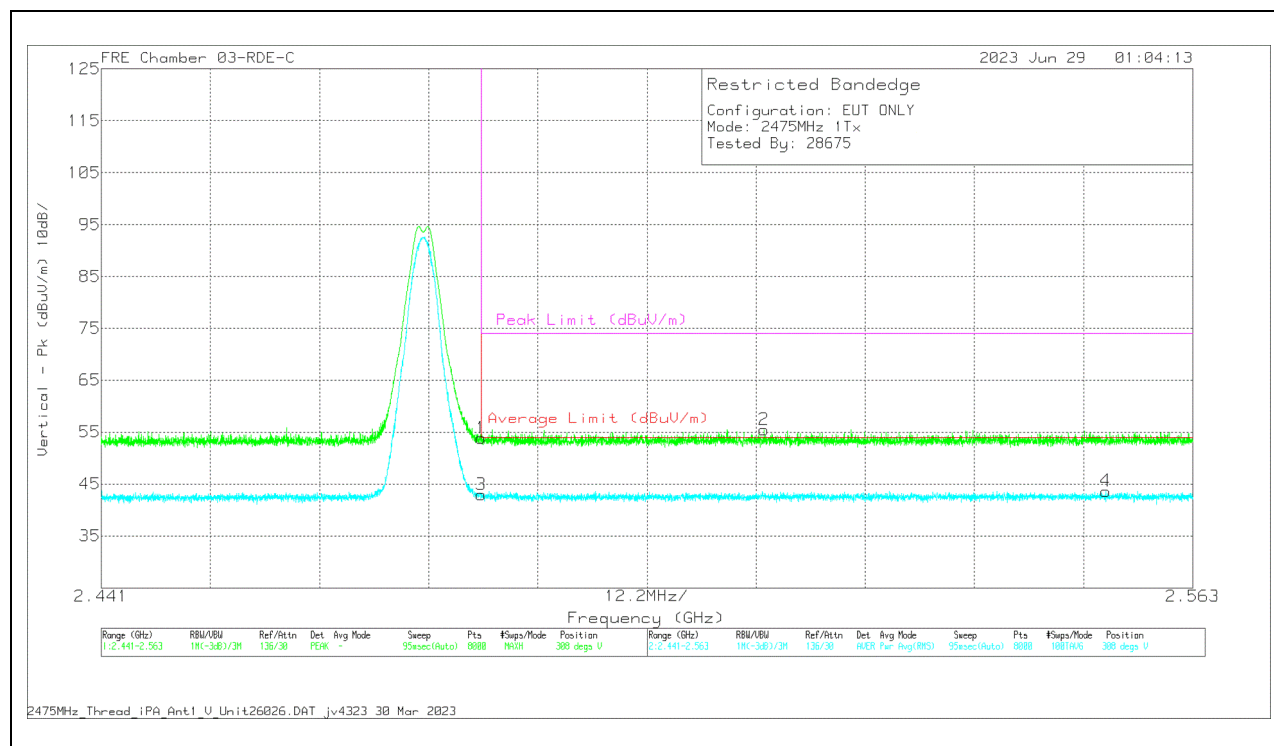
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	61.09	Pk	32.2	-39.6	53.69	-	-	74	-20.31	345	270	H
3	* 2.4835	50.05	RMS	32.2	-39.6	42.65	54	-11.35	-	-	345	270	H
2	2.530758	63.81	Pk	32.3	-39.62	56.49	-	-	74	-17.51	345	270	H
4	2.531841	51.32	RMS	32.3	-39.52	44.1	54	-9.9	-	-	345	270	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	22672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	61.23	Pk	32.2	-39.6	53.83	-	-	74	-20.17	308	130	V
3	* 2.4835	50.31	RMS	32.2	-39.6	42.91	54	-11.09	-	-	308	130	V
2	2.515064	62.73	Pk	32.3	-39.51	55.52	-	-	74	-18.48	308	130	V
4	2.55327	50.85	RMS	32.3	-39.5	43.65	54	-10.35	-	-	308	130	V

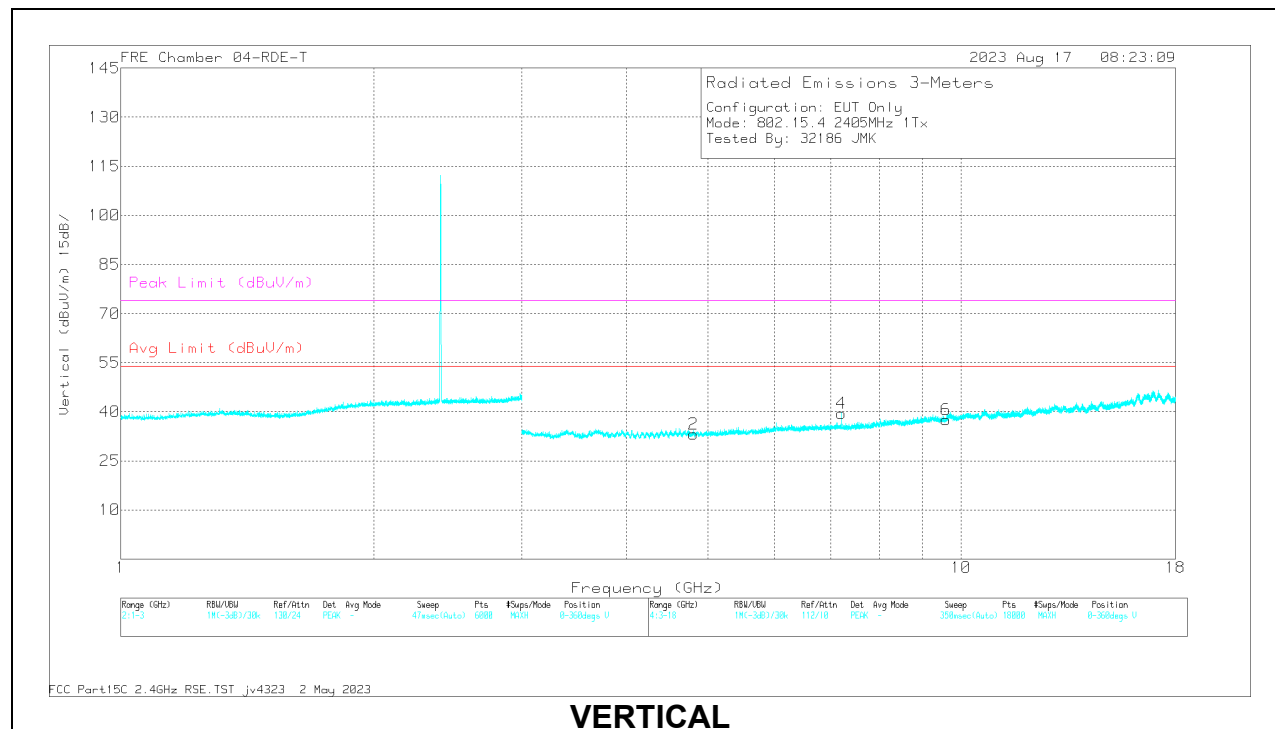
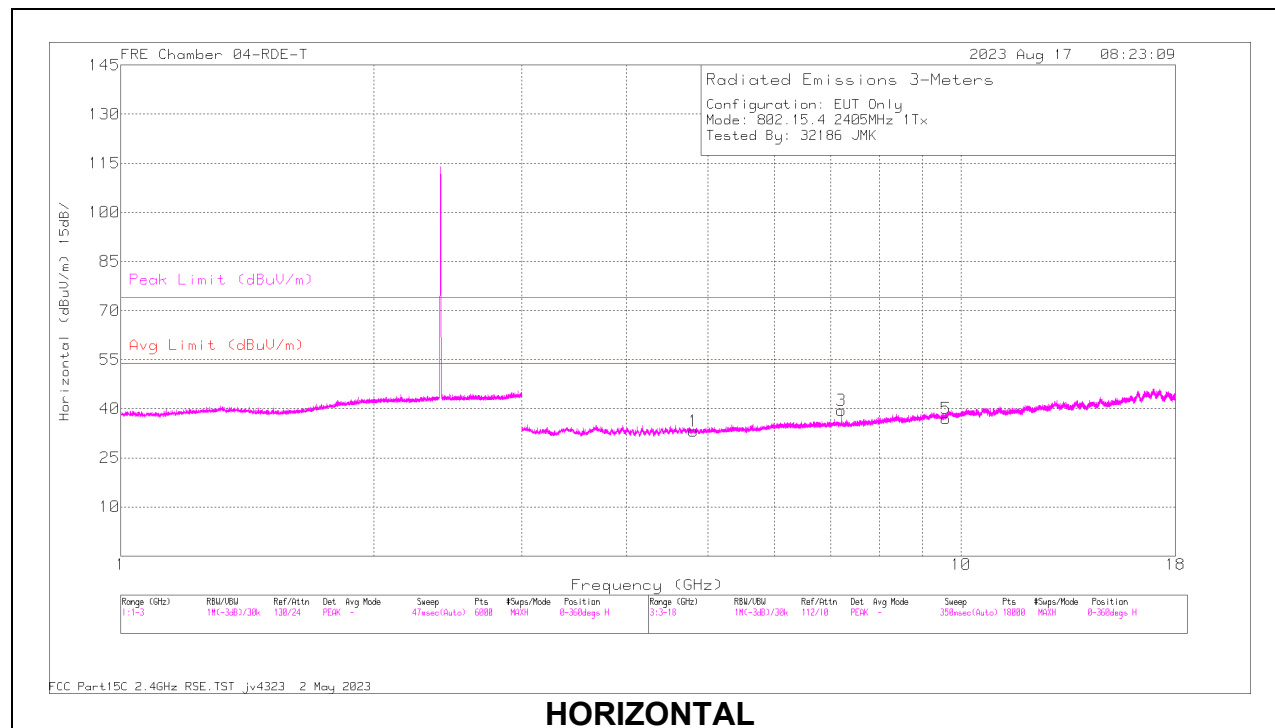
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

10.1.5. ANT 4, 802.15.4 HIGH POWER HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



RADIATED EMISSIONS

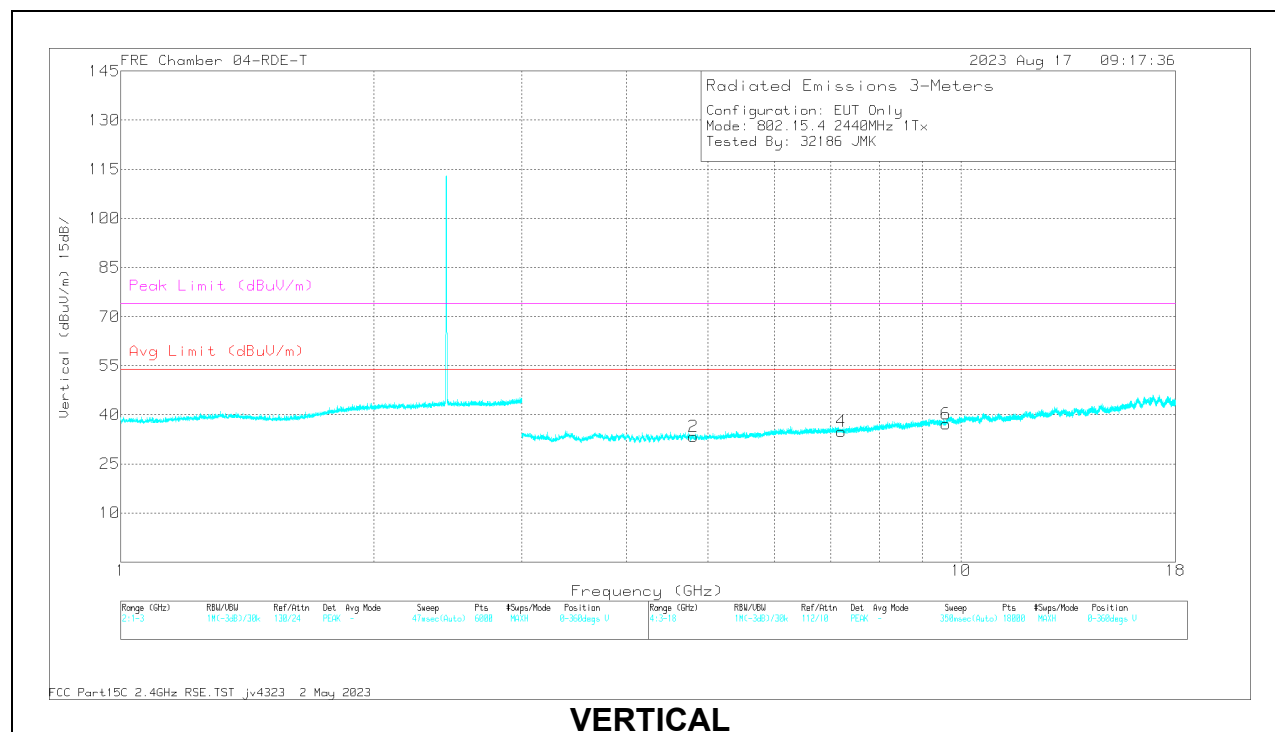
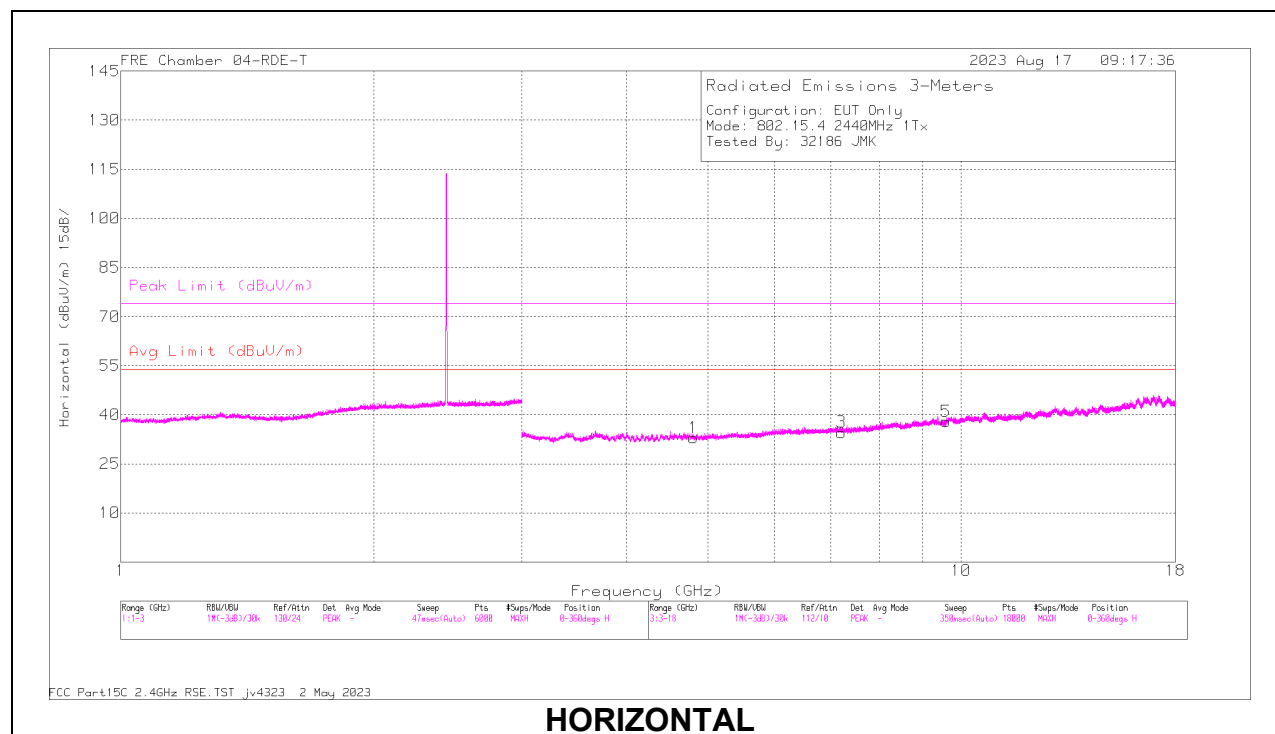
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226673 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.80268	56.56	PK2	33.9	-46.41	44.05	-	-	74	-29.95	360	101	H
	* 4.802663	44.87	MAv1	33.9	-46.41	32.36	54	-21.64	-	-	360	101	H
2	* 4.801537	56.54	PK2	33.9	-46.43	44.01	-	-	74	-29.99	360	200	V
	* 4.801346	44.92	MAv1	33.9	-46.44	32.38	54	-21.62	-	-	360	200	V
4	7.203981	54.47	PK2	35.6	-43.67	46.4	-	-	74	-27.6	297	365	V
	7.20433	42.13	MAv1	35.6	-43.67	34.06	-	-	-	-	297	365	V
3	7.204635	55.39	PK2	35.6	-43.67	47.32	-	-	74	-26.68	61	335	H
	7.204638	43.9	MAv1	35.6	-43.67	35.83	-	-	-	-	61	335	H
6	9.601415	53.66	PK2	36.6	-42.51	47.75	-	-	74	-26.25	360	200	V
	9.6008	42.15	MAv1	36.6	-42.51	36.24	-	-	-	-	360	200	V
5	9.601023	53.91	PK2	36.6	-42.51	48	-	-	74	-26	360	101	H
	9.602128	42.22	MAv1	36.6	-42.52	36.3	-	-	-	-	360	101	H

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



RADIATED EMISSIONS

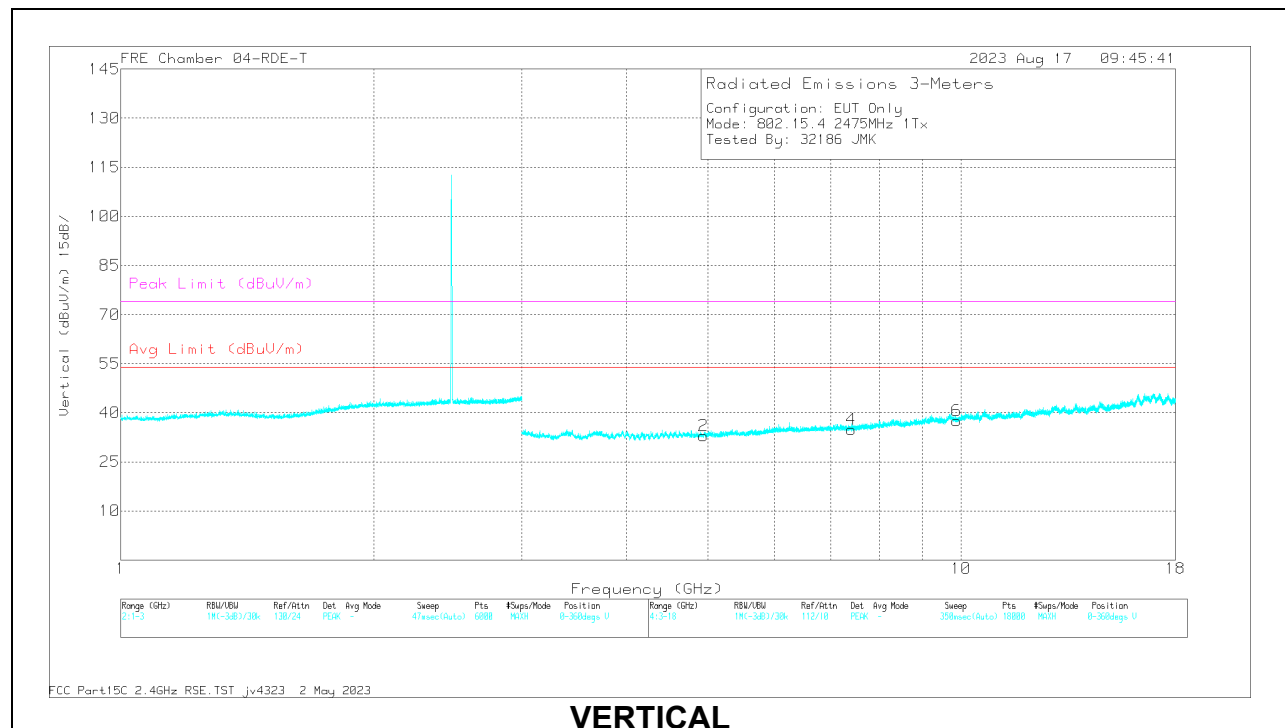
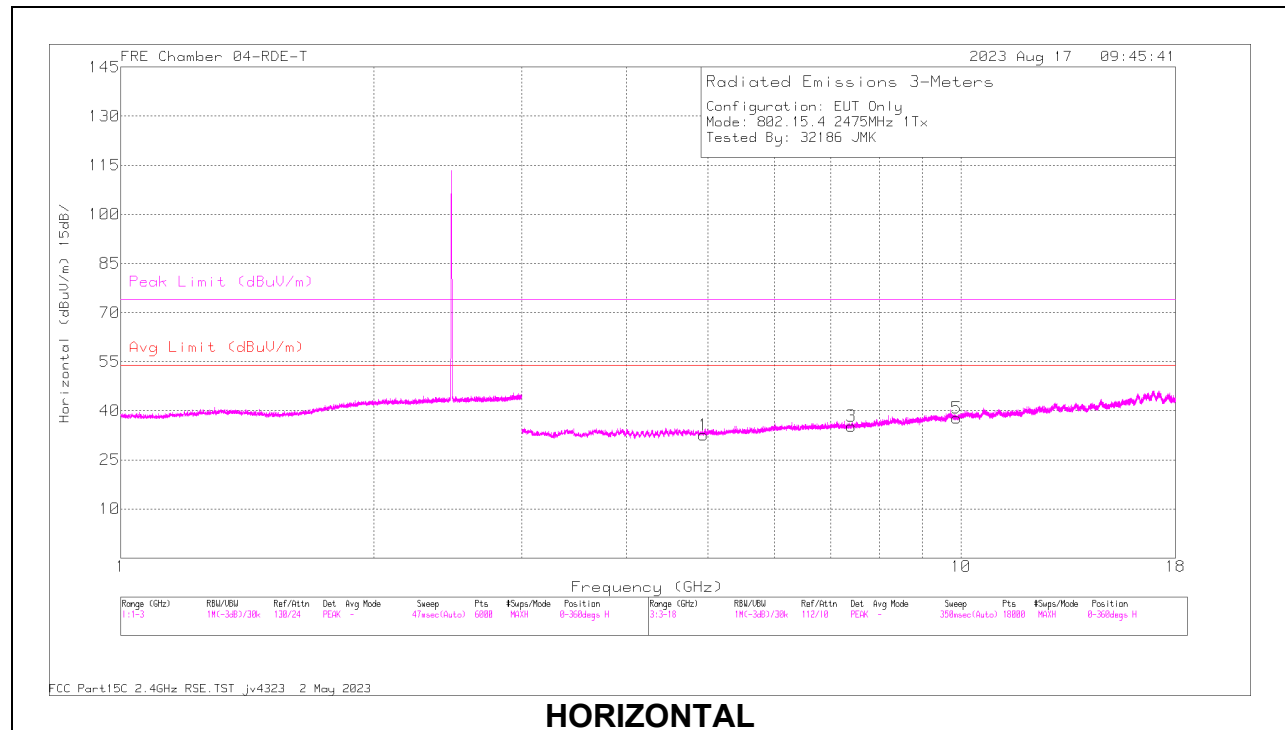
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226673 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.802905	56.21	PK2	33.9	-46.41	43.7	-	-	74	-30.3	360	101	H
	* 4.799697	44.64	MAv1	33.9	-46.47	32.07	54	-21.93	-	-	360	101	H
2	* 4.80139	56.75	PK2	33.9	-46.44	44.21	-	-	74	-29.79	360	101	V
	* 4.801718	44.89	MAv1	33.9	-46.42	32.37	54	-21.63	-	-	360	101	V
4	7.198789	53.74	PK2	35.6	-43.68	45.66	-	-	74	-28.34	360	101	V
	7.201387	42.26	MAv1	35.6	-43.66	34.2	-	-	-	-	360	101	V
3	7.199199	54.91	PK2	35.6	-43.68	46.83	-	-	74	-27.17	360	199	H
	7.199623	42.13	MAv1	35.6	-43.67	34.06	-	-	-	-	360	199	H
6	9.600052	42.11	MAv1	36.6	-42.53	36.18	-	-	-	-	360	199	V
	9.600543	53.66	PK2	36.6	-42.52	47.74	-	-	74	-26.26	360	199	V
5	9.601224	42.32	MAv1	36.6	-42.51	36.41	-	-	-	-	360	101	H
	9.602128	53.87	PK2	36.6	-42.52	47.95	-	-	74	-26.05	360	101	H

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226673 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.938959	55.84	PK2	34	-46.2	43.64	-	-	74	-30.36	360	101	H
	* 4.93906	44.18	MAv1	34	-46.2	31.98	54	-22.02	-	-	360	101	H
3	* 7.410314	53.79	PK2	35.7	-43.24	46.25	-	-	74	-27.75	360	101	H
	* 7.411253	42.09	MAv1	35.7	-43.25	34.54	54	-19.46	-	-	360	101	H
2	* 4.939579	55.9	PK2	34	-46.22	43.68	-	-	74	-30.32	360	101	V
	* 4.940644	44.4	MAv1	34	-46.25	32.15	54	-21.85	-	-	360	101	V
4	* 7.40988	53.4	PK2	35.7	-43.23	45.87	-	-	74	-28.13	360	101	V
	* 7.408562	41.96	MAv1	35.7	-43.21	34.45	54	-19.55	-	-	360	101	V
6	9.881213	53.58	PK2	36.9	-42.22	48.26	-	-	74	-25.74	360	101	V
	9.880153	41.97	MAv1	36.9	-42.24	36.63	-	-	-	-	360	101	V
5	9.881756	54.05	PK2	36.9	-42.21	48.74	-	-	74	-25.26	360	101	H
	9.882246	41.96	MAv1	36.9	-42.2	36.66	-	-	-	-	360	101	H

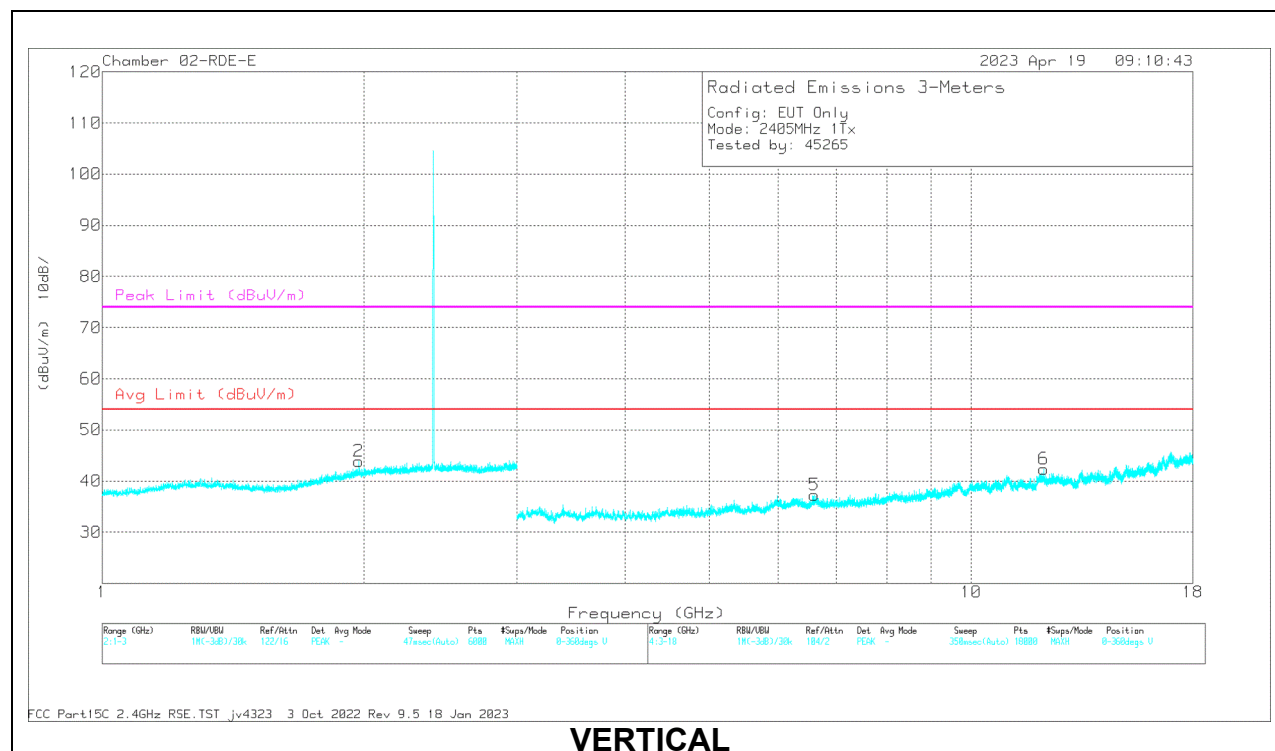
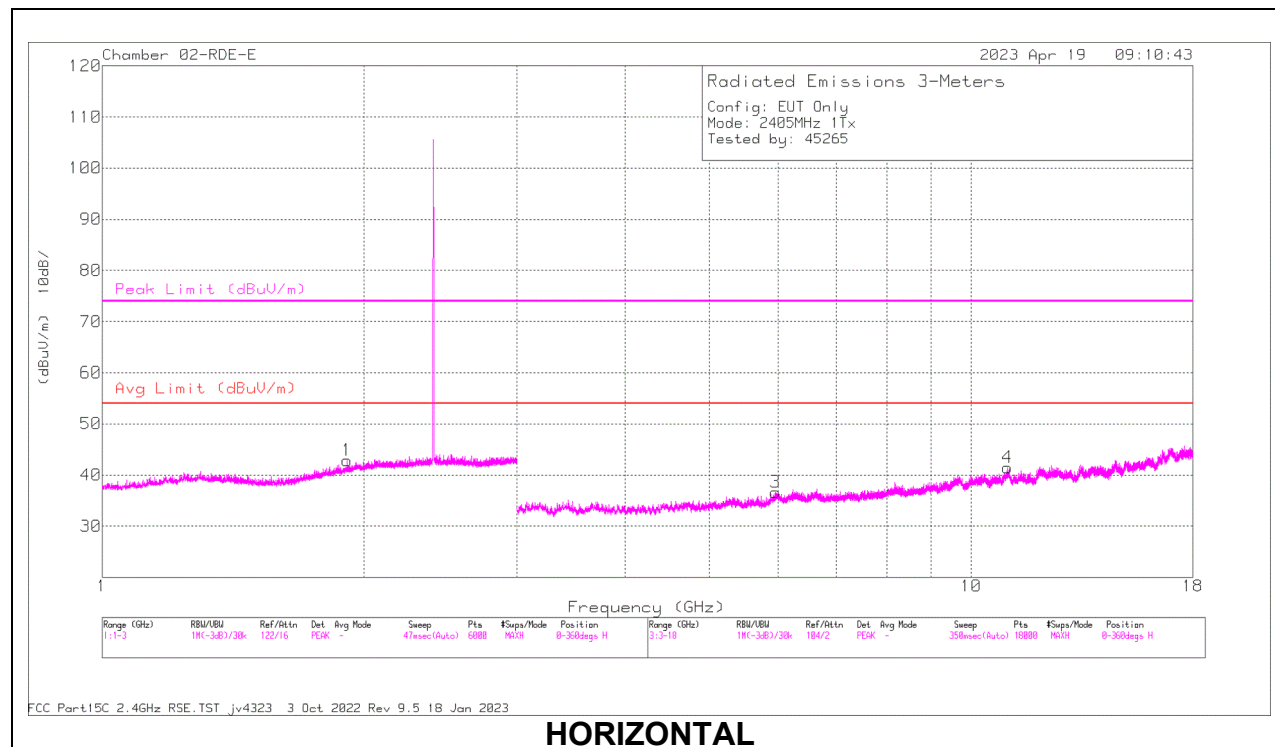
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

10.1.6. ANT 4, 802.15.4 LOW POWER HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



RADIATED EMISSIONS

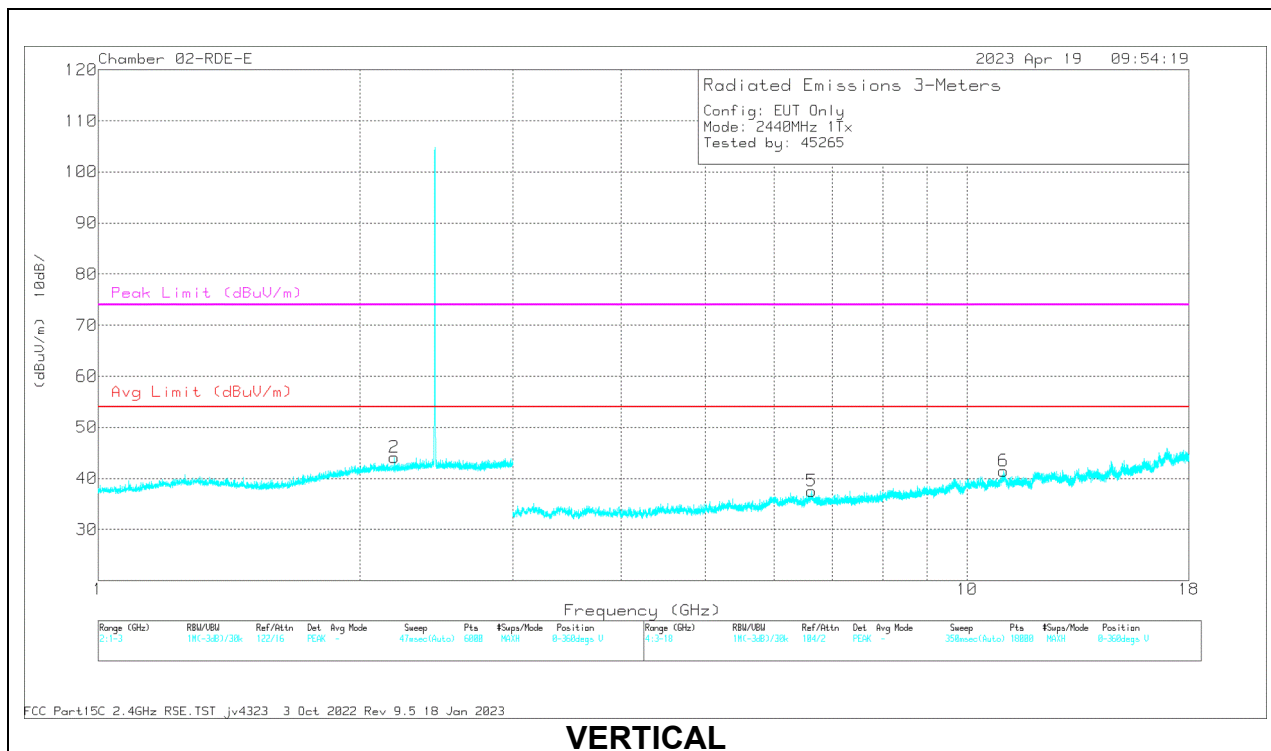
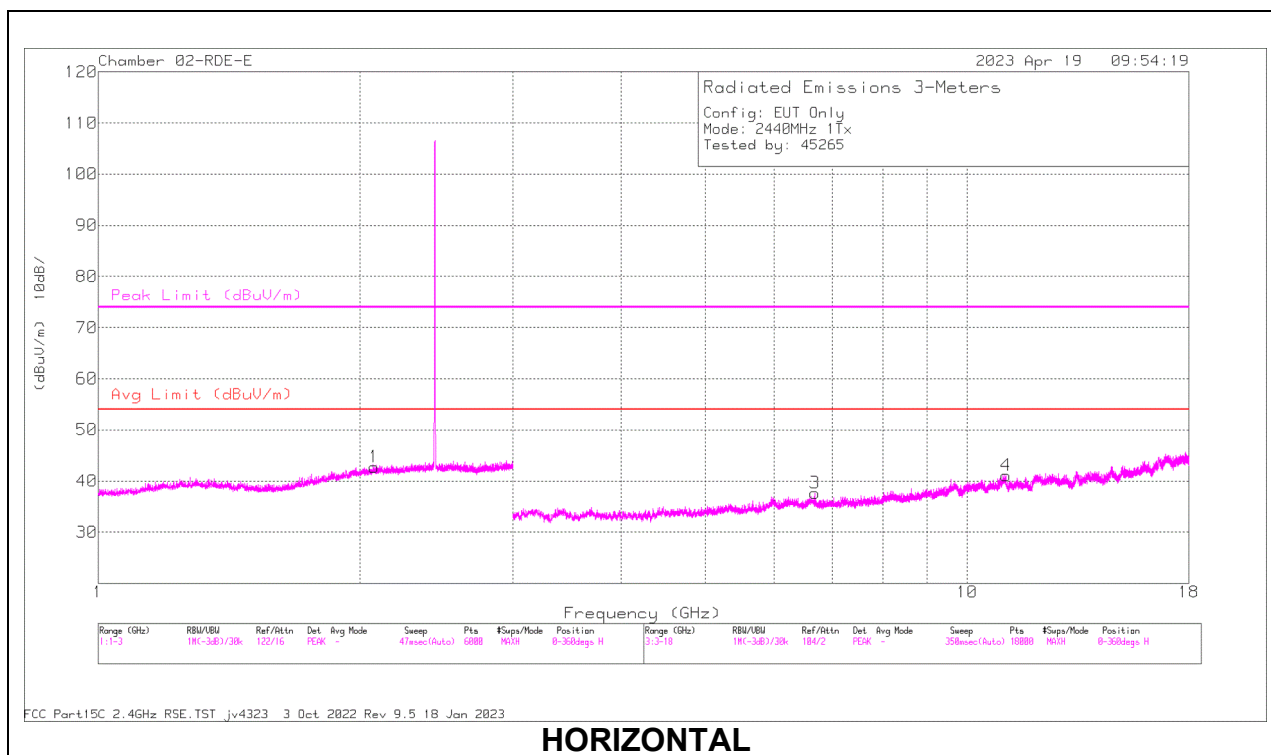
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206807 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 11.017001	54.22	PK2	37.9	-41.28	50.84	-	-	74	-23.16	0	199	H
	* 11.017644	42.95	MAv1	37.9	-41.29	39.56	54	-14.44	-	-	0	199	H
6	* 12.120165	54.89	PK2	38.9	-42.2	51.59	-	-	74	-22.41	0	101	V
	* 12.123161	43.38	MAv1	38.9	-42.34	39.94	54	-14.06	-	-	0	101	V
1	1.913305	48.46	MAv1	30.6	-39.34	39.72	-	-	-	-	0	101	H
	1.913744	60.22	PK2	30.6	-39.35	51.47	-	-	74	-22.53	0	101	H
2	1.973721	48.42	MAv1	31.1	-39.25	40.27	-	-	-	-	0	101	V
	1.97511	60.12	PK2	31.1	-39.26	51.96	-	-	74	-22.04	0	101	V
3	5.950683	55.92	PK2	35.1	-44.91	46.11	-	-	74	-27.89	0	199	H
	5.952803	44.49	MAv1	35.1	-44.93	34.66	-	-	-	-	0	199	H
5	6.598752	42.82	MAv1	35.5	-43.65	34.67	-	-	-	-	0	101	V
	6.598871	55.14	PK2	35.5	-43.65	46.99	-	-	74	-27.01	0	101	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



RADIATED EMISSIONS

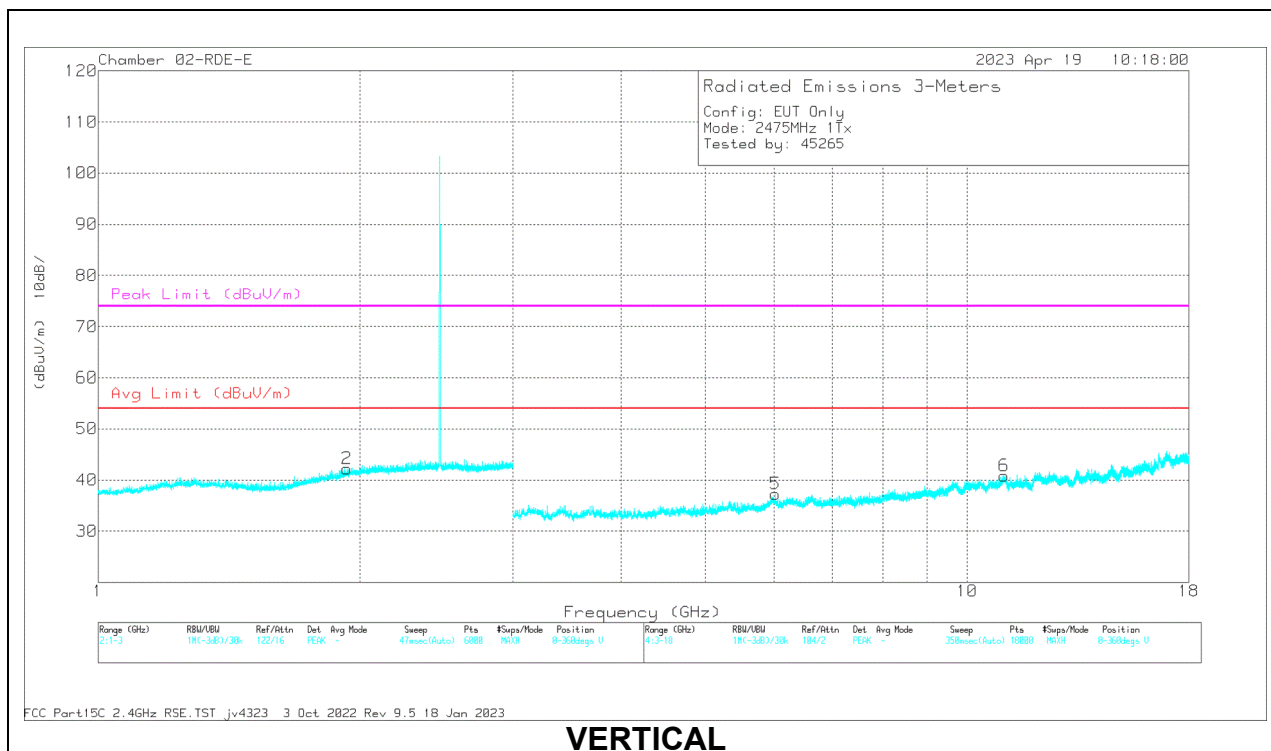
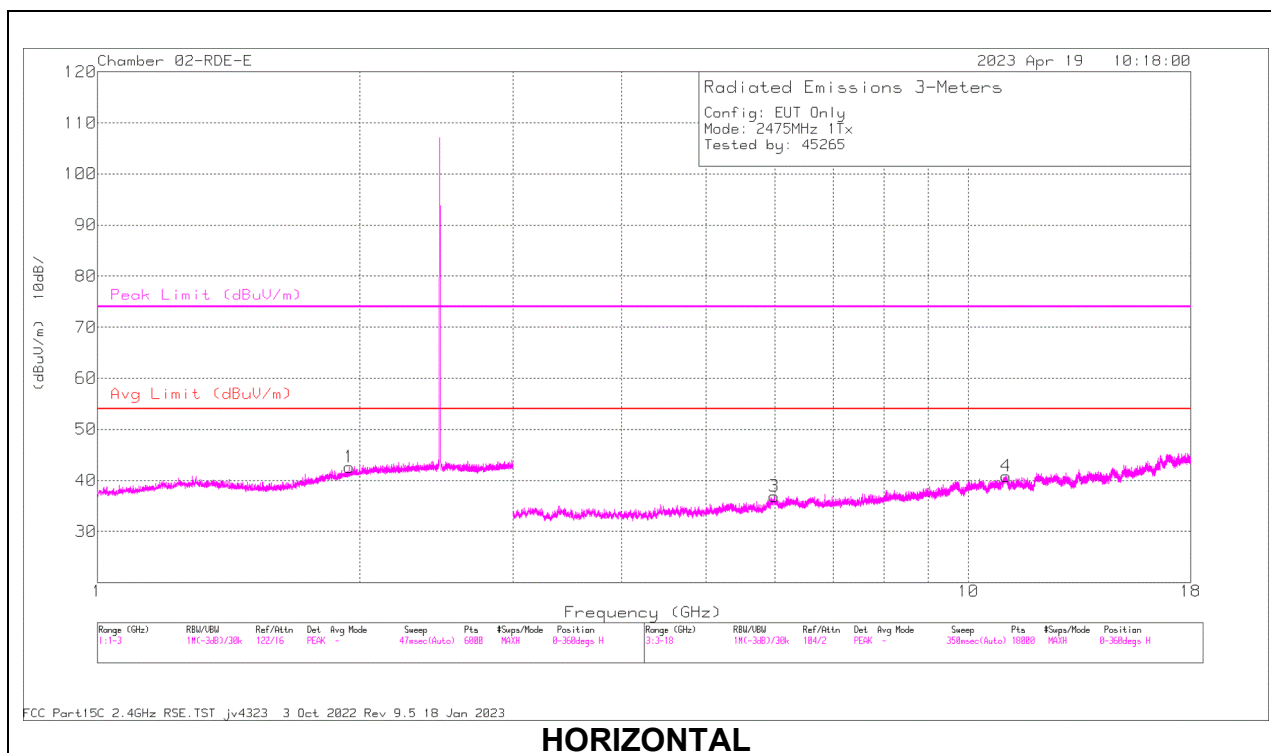
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206807 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 11.086864	53.48	PK2	38	-41.03	50.45	-	-	74	-23.55	0	101	H
	* 11.087417	41.96	MAv1	38	-41.03	38.93	54	-15.07	-	-	0	101	H
6	* 11.004428	55.26	PK2	37.9	-41.32	51.84	-	-	74	-22.16	0	101	V
	* 11.005204	42.87	MAv1	37.9	-41.31	39.46	54	-14.54	-	-	0	101	V
1	2.076624	48.52	MAv1	31.6	-39.12	41	-	-	-	-	0	101	H
	2.077367	59.84	PK2	31.6	-39.12	52.32	-	-	74	-21.68	0	101	H
2	2.192599	48.28	MAv1	31.8	-39.3	40.78	-	-	-	-	0	200	V
	2.194779	59.65	PK2	31.8	-39.3	52.15	-	-	74	-21.85	0	200	V
5	6.624644	42.85	MAv1	35.5	-43.22	35.13	-	-	-	-	0	200	V
	6.627869	54.36	PK2	35.5	-43.3	46.56	-	-	74	-27.44	0	200	V
3	6.677319	54.17	PK2	35.5	-43.7	45.97	-	-	74	-28.03	0	101	H
	6.678757	42.88	MAv1	35.5	-43.66	34.72	-	-	-	-	0	101	H

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL RESULTS



RADIATED EMISSIONS

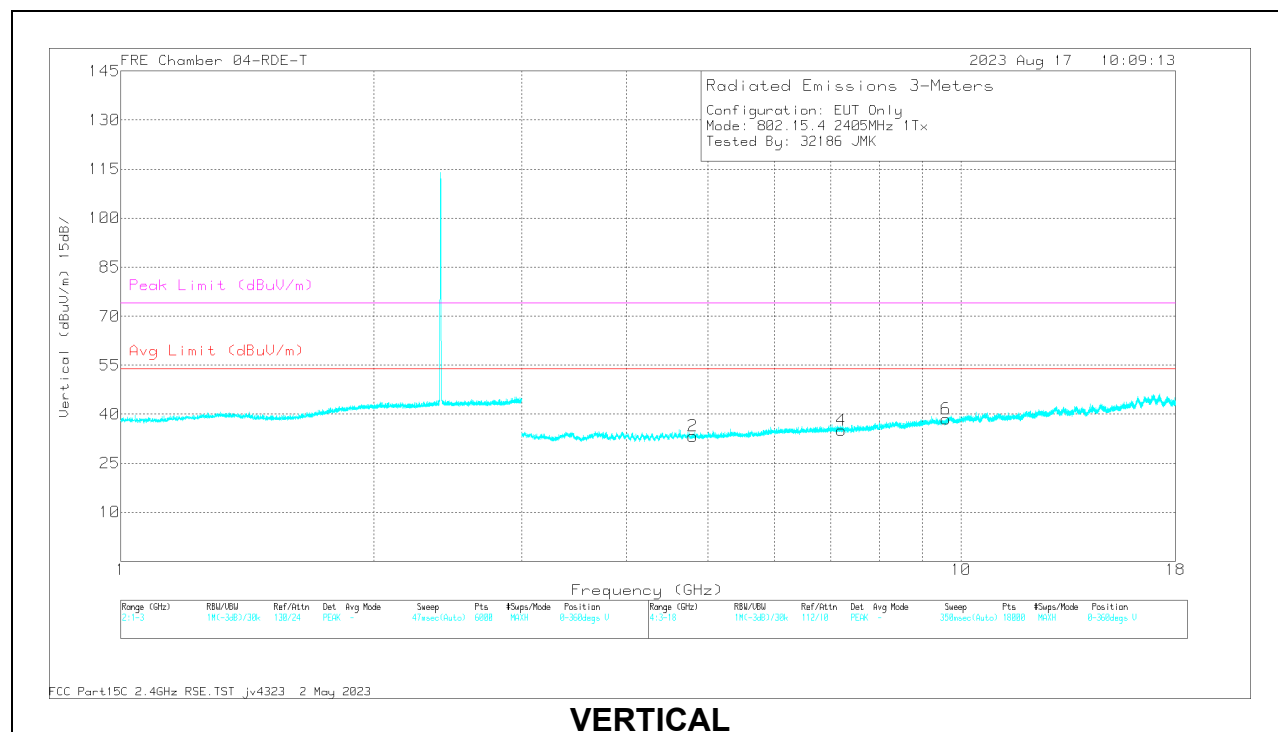
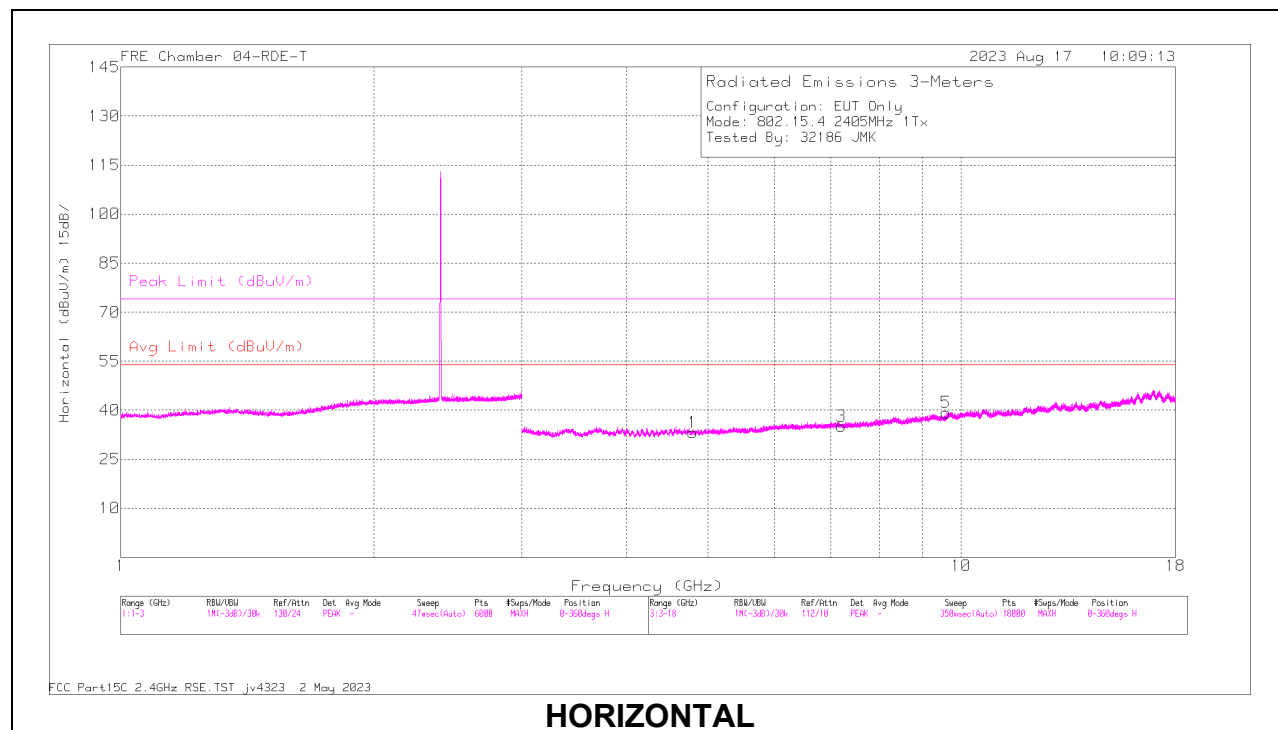
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206807 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 11.050121	54.46	PK2	37.9	-40.91	51.45	-	-	74	-22.55	0	199	H
	* 11.051246	42.68	MAv1	37.9	-40.89	39.69	54	-14.31	-	-	0	199	H
6	* 11.035211	54.07	PK2	37.9	-41.05	50.92	-	-	74	-23.08	0	101	V
	* 11.036377	42.75	MAv1	37.9	-41.02	39.63	54	-14.37	-	-	0	101	V
2	1.933844	48.36	MAv1	30.8	-39.34	39.82	-	-	-	-	0	199	V
	1.933934	60	PK2	30.8	-39.34	51.46	-	-	74	-22.54	0	199	V
1	1.946092	60.59	PK2	30.9	-39.33	52.16	-	-	74	-21.84	0	101	H
	1.947889	48.39	MAv1	30.9	-39.33	39.96	-	-	-	-	0	101	H
3	5.981999	44.6	MAv1	35.2	-45	34.8	-	-	-	-	0	101	H
	5.982849	56.2	PK2	35.2	-44.99	46.41	-	-	74	-27.59	0	101	H
5	6.016518	44.03	MAv1	35.2	-44.71	34.52	-	-	-	-	0	101	V
	6.019163	55.76	PK2	35.2	-44.67	46.29	-	-	74	-27.71	0	101	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

10.1.7. ANT 3, 802.15.4 HIGH POWER HARMONIC AND SPURIOUS EMISSIONS LOW CHANNEL RESULTS



RADIATED EMISSIONS

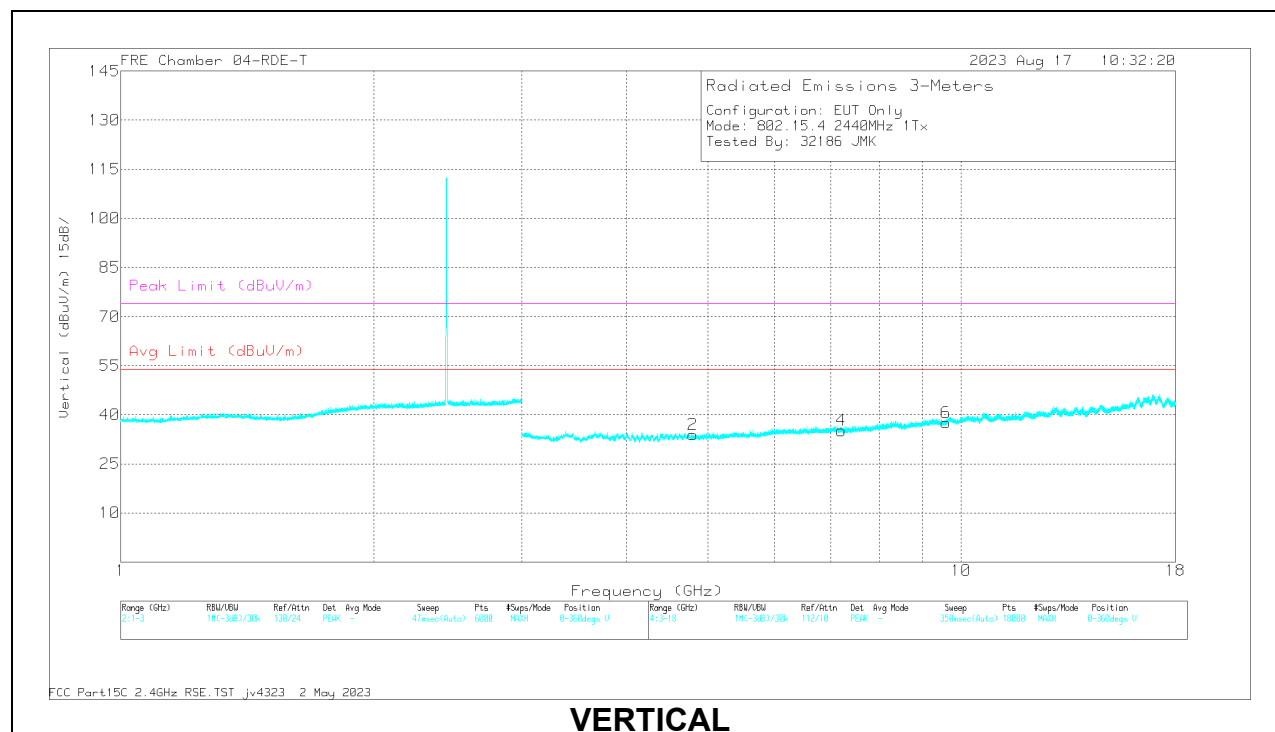
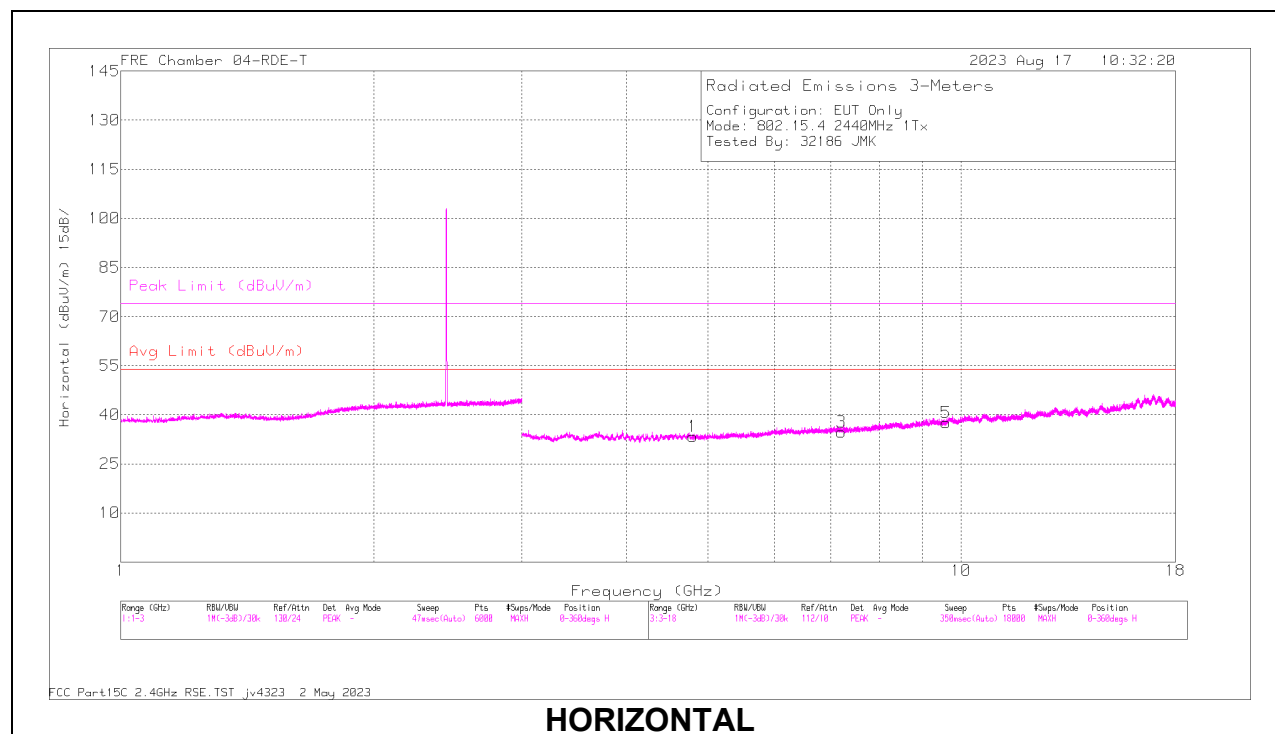
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226673 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.801973	56.45	PK2	33.9	-46.4	43.95	-	-	74	-30.05	360	199	H
	* 4.799106	44.83	MAv1	33.9	-46.47	32.26	54	-21.74	-	-	360	199	H
2	* 4.798434	56.38	PK2	33.9	-46.45	43.83	-	-	74	-30.17	360	199	V
	* 4.799294	44.97	MAv1	33.9	-46.47	32.4	54	-21.6	-	-	360	199	V
3	7.198434	42.21	MAv1	35.6	-43.69	34.12	-	-	-	-	360	199	H
	7.199304	53.9	PK2	35.6	-43.67	45.83	-	-	74	-28.17	360	199	H
4	7.200169	42.34	MAv1	35.6	-43.66	34.28	-	-	-	-	360	101	V
	7.200375	53.69	PK2	35.6	-43.66	45.63	-	-	74	-28.37	360	101	V
5	9.599504	54.1	PK2	36.6	-42.53	48.17	-	-	74	-25.83	360	101	H
	9.602036	42.25	MAv1	36.6	-42.52	36.33	-	-	-	-	360	101	H
6	9.599523	53.49	PK2	36.6	-42.53	47.56	-	-	74	-26.44	360	101	V
	9.601852	42.35	MAv1	36.6	-42.52	36.43	-	-	-	-	360	101	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



RADIATED EMISSIONS

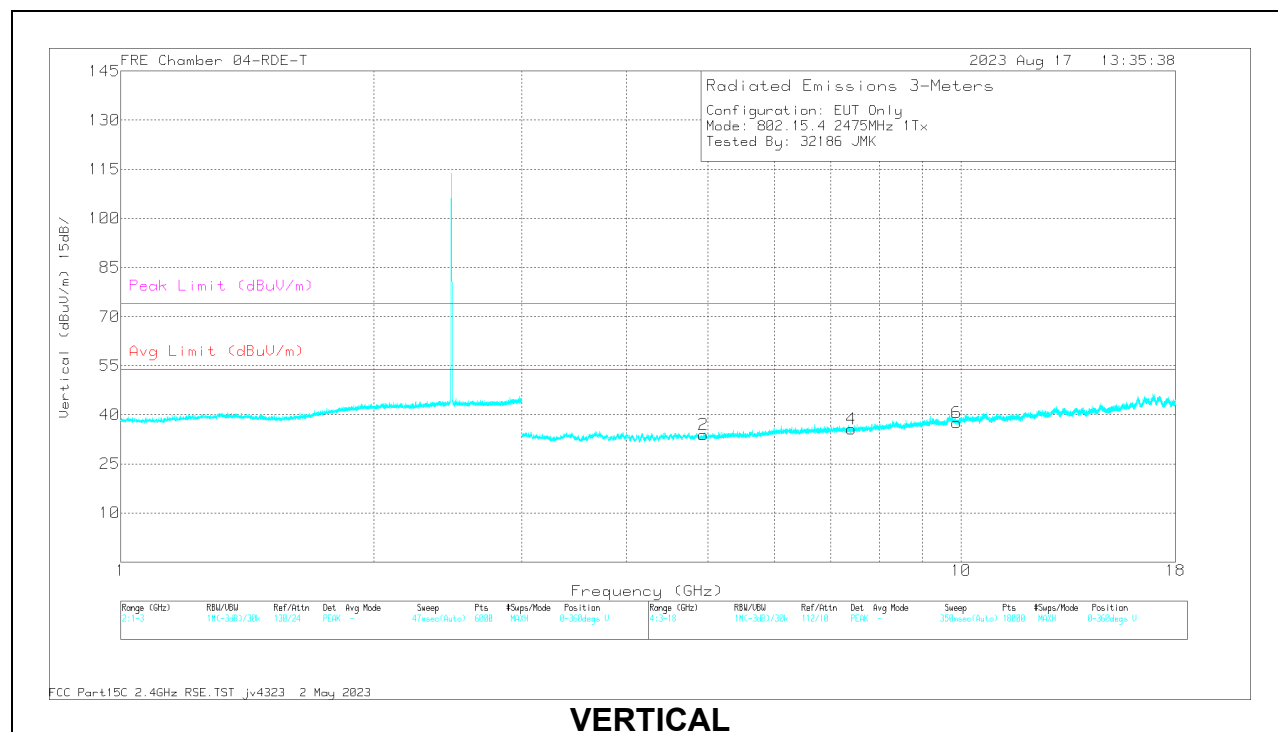
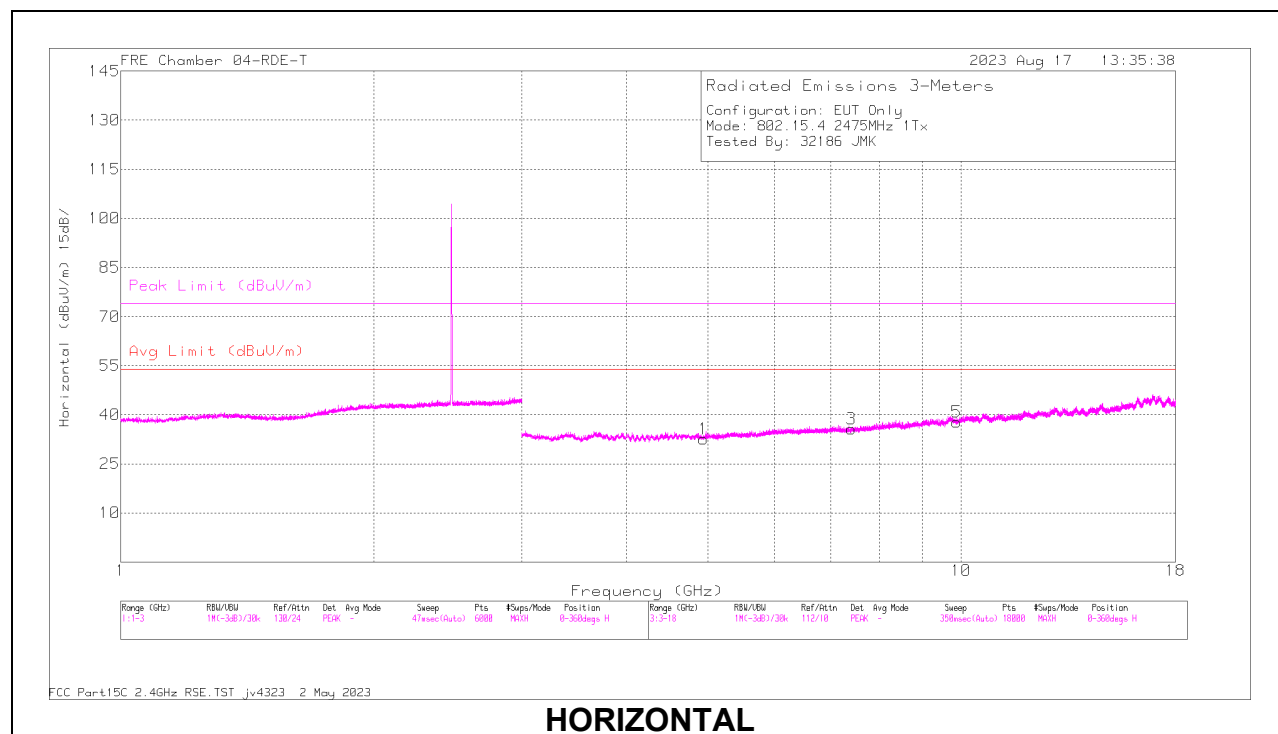
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226673 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.798493	56.5	PK2	33.9	-46.45	43.95	-	-	74	-30.05	360	101	H
	* 4.801406	45	MAv1	33.9	-46.44	32.46	54	-21.54	-	-	360	101	H
2	* 4.79989	56.75	PK2	33.9	-46.47	44.18	-	-	74	-29.82	360	200	V
	* 4.800049	44.74	MAv1	33.9	-46.47	32.17	54	-21.83	-	-	360	200	V
4	7.200756	54.11	PK2	35.6	-43.66	46.05	-	-	74	-27.95	360	101	V
	7.20027	42.32	MAv1	35.6	-43.66	34.26	-	-	-	-	360	101	V
3	7.200669	54.91	PK2	35.6	-43.66	46.85	-	-	74	-27.15	360	101	H
	7.201444	42.42	MAv1	35.6	-43.66	34.36	-	-	-	-	360	101	H
6	9.598417	53.8	PK2	36.6	-42.52	47.88	-	-	74	-26.12	360	101	V
	9.6004	42.4	MAv1	36.6	-42.52	36.48	-	-	-	-	360	101	V
5	9.600719	53.93	PK2	36.6	-42.52	48.01	-	-	74	-25.99	360	101	H
	9.59888	42.28	MAv1	36.6	-42.52	36.36	-	-	-	-	360	101	H

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL RESULTS



RADIATED EMISSIONS

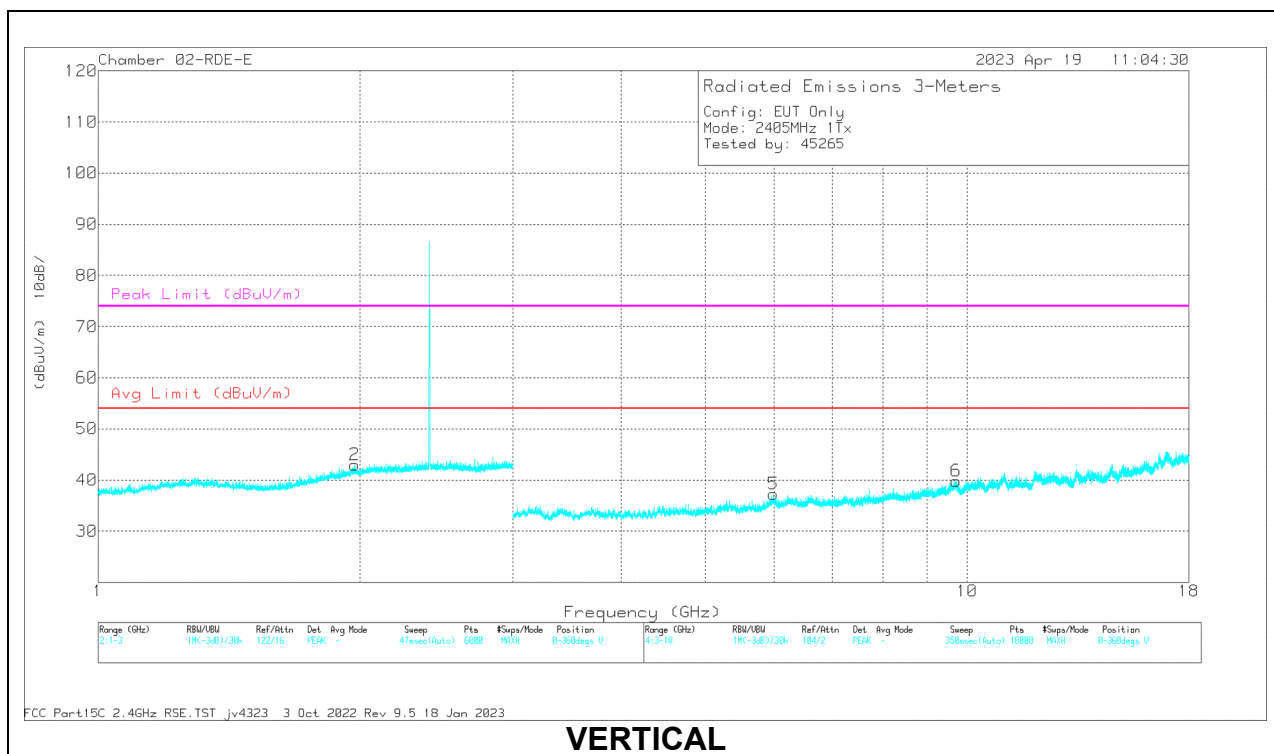
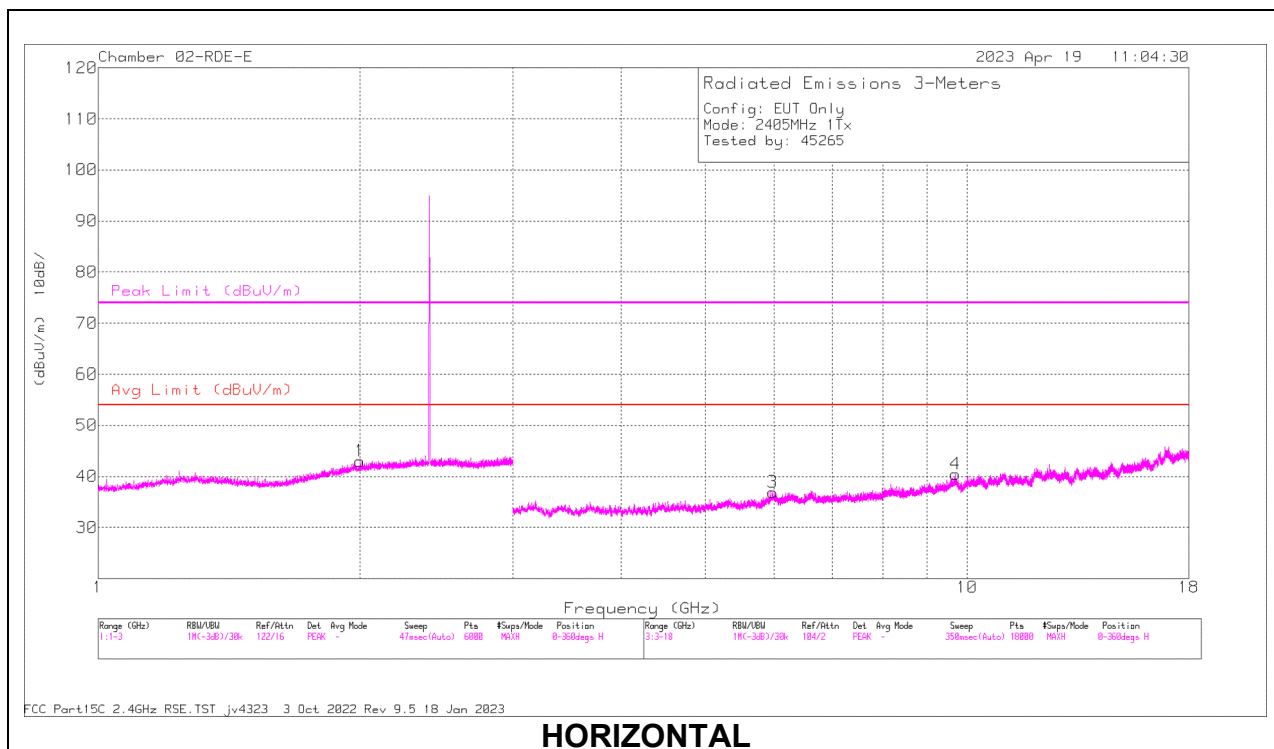
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226673 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.939297	56	PK2	34	-46.21	43.79	-	-	74	-30.21	360	200	H
	* 4.942382	44.33	MAv1	34	-46.24	32.09	54	-21.91	-	-	360	200	H
3	* 7.412118	53.6	PK2	35.7	-43.25	46.05	-	-	74	-27.95	360	200	H
	* 7.40942	41.82	MAv1	35.7	-43.22	34.3	54	-19.7	-	-	360	200	H
2	* 4.938382	56.22	PK2	34	-46.19	44.03	-	-	74	-29.97	360	200	V
	* 4.938538	44.21	MAv1	34	-46.2	32.01	54	-21.99	-	-	360	200	V
4	* 7.410588	53.46	PK2	35.7	-43.24	45.92	-	-	74	-28.08	360	101	V
	* 7.408369	42.02	MAv1	35.7	-43.2	34.52	54	-19.48	-	-	360	101	V
5	9.879911	53.4	PK2	36.9	-42.24	48.06	-	-	74	-25.94	360	101	H
	9.882163	42.01	MAv1	36.9	-42.2	36.71	-	-	-	-	360	101	H
6	9.881699	53.74	PK2	36.9	-42.21	48.43	-	-	74	-25.57	360	200	V
	9.880148	42.03	MAv1	36.9	-42.24	36.69	-	-	-	-	360	200	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

10.1.8. ANT 3, 802.15.4 LOW POWER HARMONIC AND SPURIOUS EMISSIONS LOW CHANNEL RESULTS



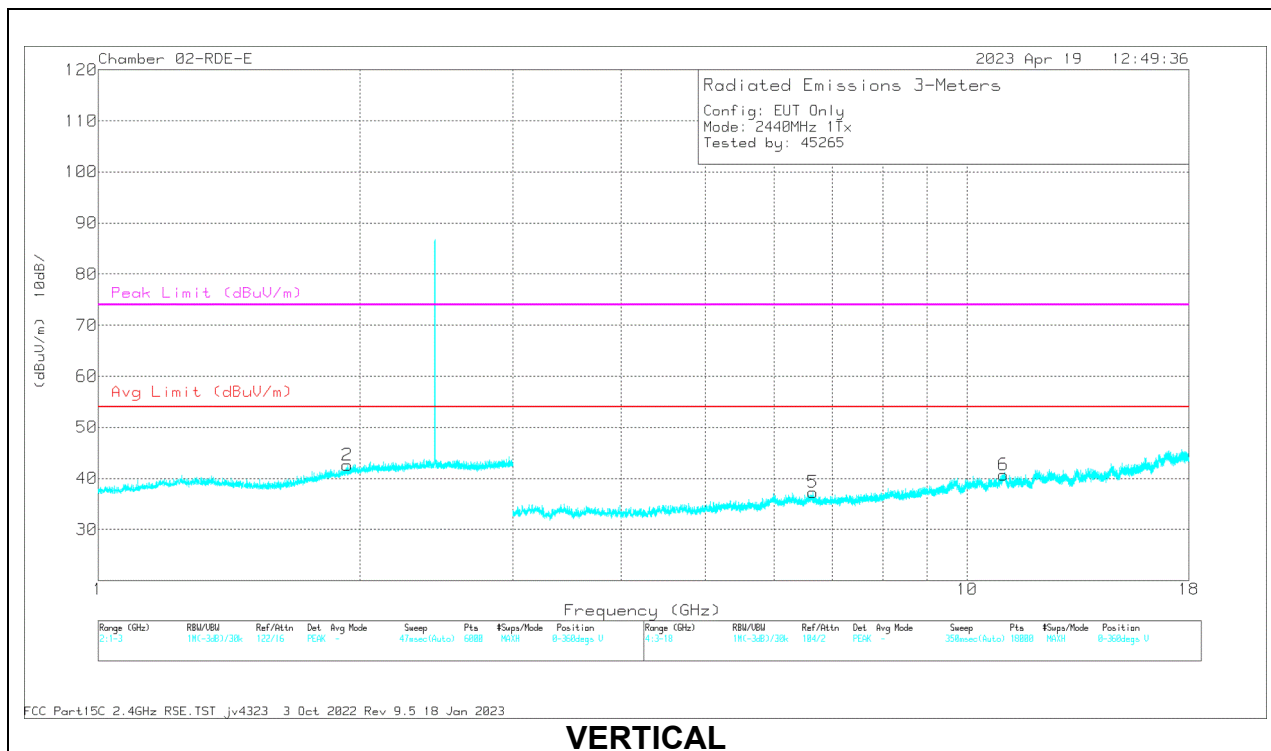
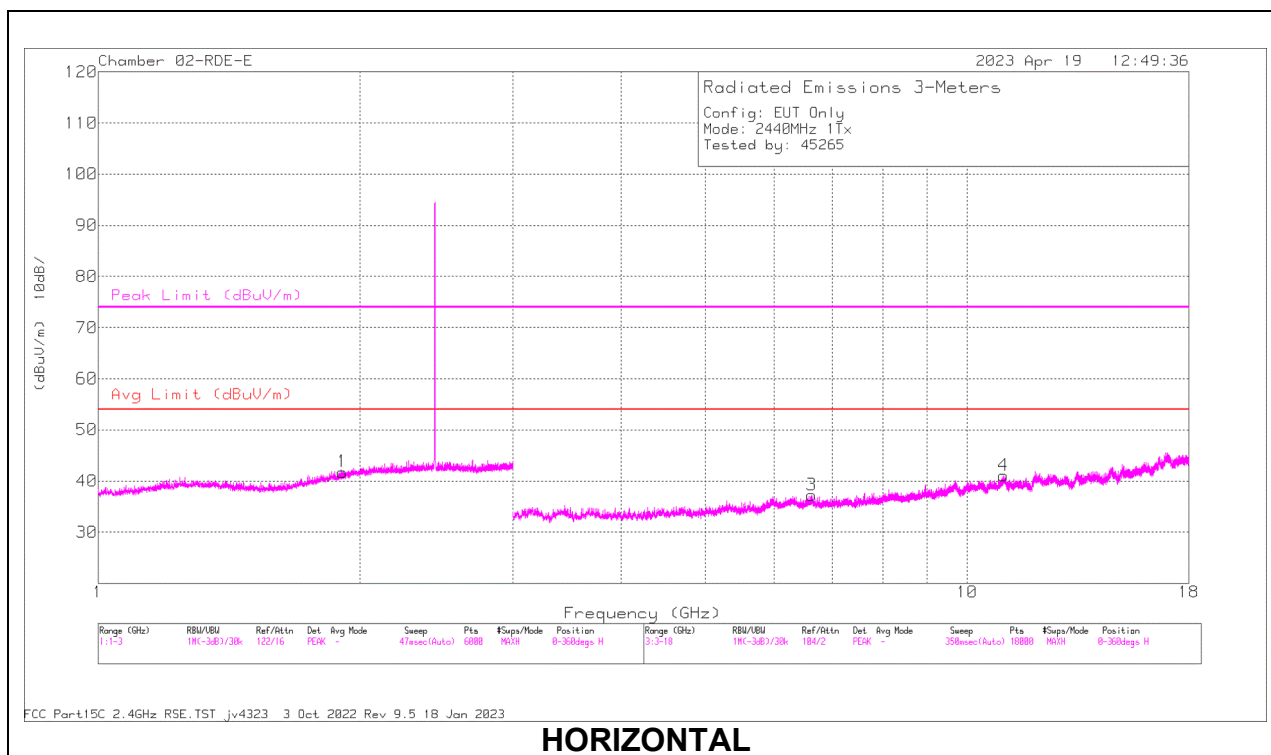
RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206807 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	1.970667	60.25	PK2	31.1	-39.24	52.11	-	-	74	-21.89	0	101	V
	1.972353	48.56	MAv1	31.1	-39.23	40.43	-	-	-	-	0	101	V
1	1.999081	59.82	PK2	31.2	-39.2	51.82	-	-	74	-22.18	0	101	H
	1.999127	48.39	MAv1	31.2	-39.2	40.39	-	-	-	-	0	101	H
3	5.976398	56.39	PK2	35.2	-44.95	46.64	-	-	74	-27.36	0	199	H
	5.977367	44.6	MAv1	35.2	-44.96	34.84	-	-	-	-	0	199	H
5	5.987351	44.35	MAv1	35.2	-44.9	34.65	-	-	-	-	0	199	V
	5.990124	56.18	PK2	35.2	-44.85	46.53	-	-	74	-27.47	0	199	V
4	9.706529	56.65	PK2	36.8	-44.25	49.2	-	-	74	-24.8	0	199	H
	9.707416	45.33	MAv1	36.8	-44.29	37.84	-	-	-	-	0	199	H
6	9.714482	57.31	PK2	36.8	-44.25	49.86	-	-	74	-24.14	0	199	V
	9.715402	45.2	MAv1	36.8	-44.27	37.73	-	-	-	-	0	199	V

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



RADIATED EMISSIONS

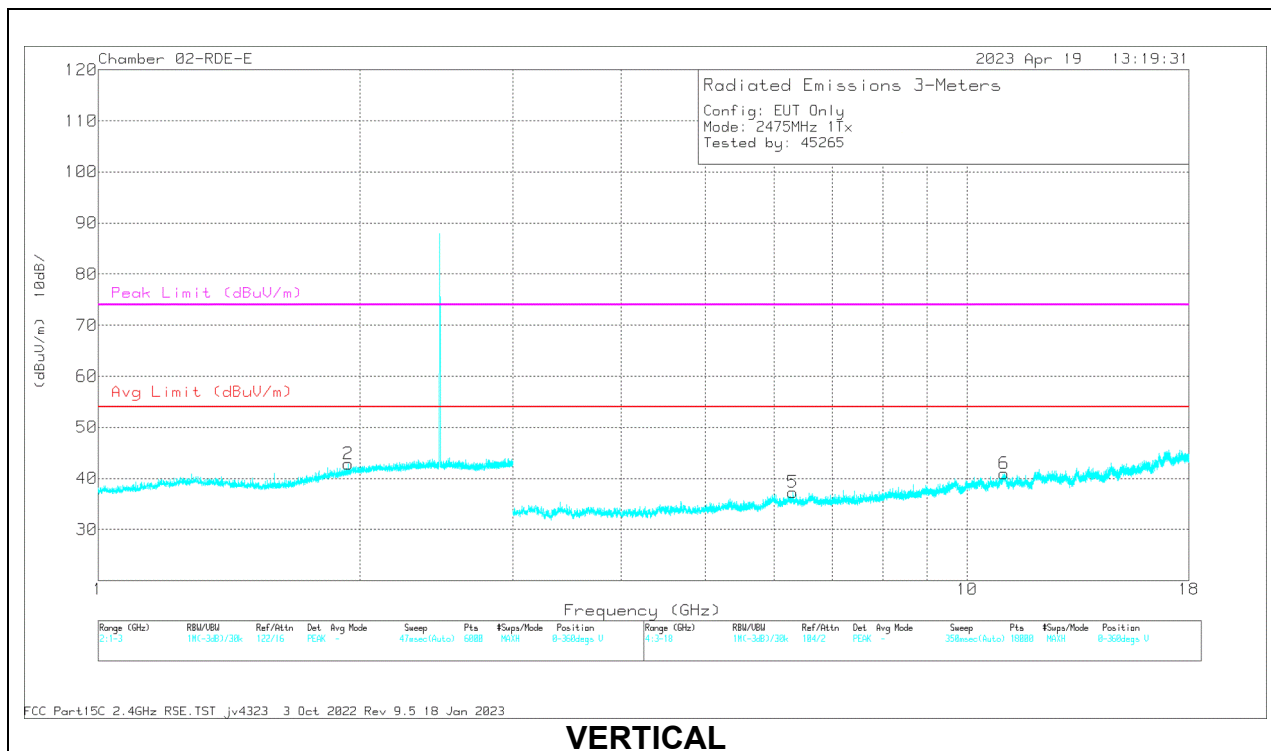
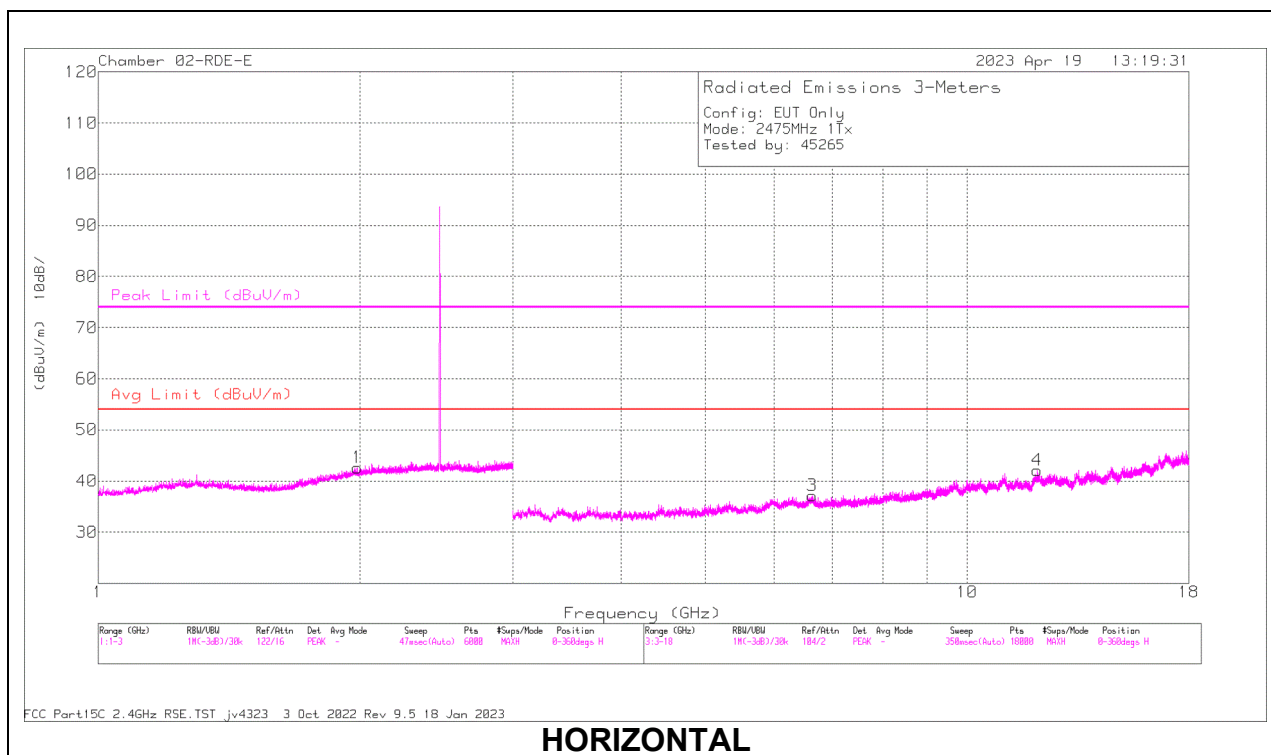
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206807 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 11.012586	54.33	PK2	37.9	-41.23	51	-	-	74	-23	0	200	H
	* 11.014868	42.73	MAv1	37.9	-41.25	39.38	54	-14.62	-	-	0	200	H
6	* 11.014023	55.49	PK2	37.9	-41.24	52.15	-	-	74	-21.85	0	200	V
	* 11.01283	43.02	MAv1	37.9	-41.23	39.69	54	-14.31	-	-	0	200	V
1	1.907235	48.46	MAv1	30.6	-39.37	39.69	-	-	-	-	0	200	H
	1.910309	60.84	PK2	30.6	-39.33	52.11	-	-	74	-21.89	0	200	H
2	1.934373	59.9	PK2	30.8	-39.34	51.36	-	-	74	-22.64	0	200	V
	1.937044	48.3	MAv1	30.8	-39.29	39.81	-	-	-	-	0	200	V
3	6.623544	42.92	MAv1	35.5	-43.21	35.21	-	-	-	-	0	200	H
	6.624256	54.23	PK2	35.5	-43.21	46.52	-	-	74	-27.48	0	200	H
5	6.648133	42.75	MAv1	35.5	-43.46	34.79	-	-	-	-	0	200	V
	6.648136	54.68	PK2	35.5	-43.46	46.72	-	-	74	-27.28	0	200	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206807 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 12.047904	54.71	PK2	38.9	-42.08	51.53	-	-	74	-22.47	0	199	H
	* 12.04637	43.42	MAv1	38.9	-42.06	40.26	54	-13.74	-	-	0	199	H
6	* 11.035022	54.46	PK2	37.9	-41.06	51.3	-	-	74	-22.7	0	199	V
	* 11.037189	42.99	MAv1	37.9	-41	39.89	54	-14.11	-	-	0	199	V
2	1.939143	48.28	MAv1	30.8	-39.28	39.8	-	-	-	-	0	200	V
	1.941084	60.65	PK2	30.9	-39.31	52.24	-	-	74	-21.76	0	200	V
1	1.986158	48.32	MAv1	31.1	-39.18	40.24	-	-	-	-	0	200	H
	1.986324	60.31	PK2	31.1	-39.18	52.23	-	-	74	-21.77	0	200	H
5	6.302107	43.42	MAv1	35.5	-43.91	35.01	-	-	-	-	0	199	V
	6.305505	54.65	PK2	35.5	-44.01	46.14	-	-	74	-27.86	0	199	V
3	6.634952	42.87	MAv1	35.5	-43.33	35.04	-	-	-	-	0	101	H
	6.636322	54.32	PK2	35.5	-43.31	46.51	-	-	74	-27.49	0	101	H

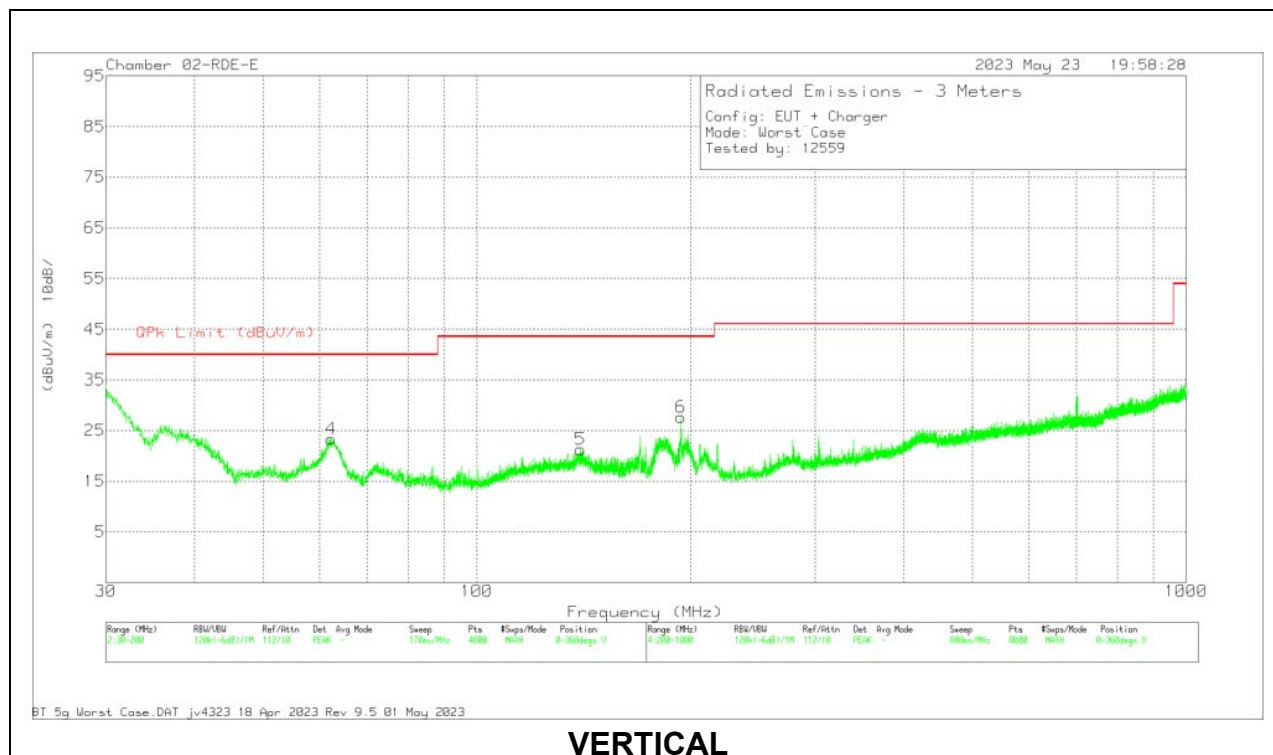
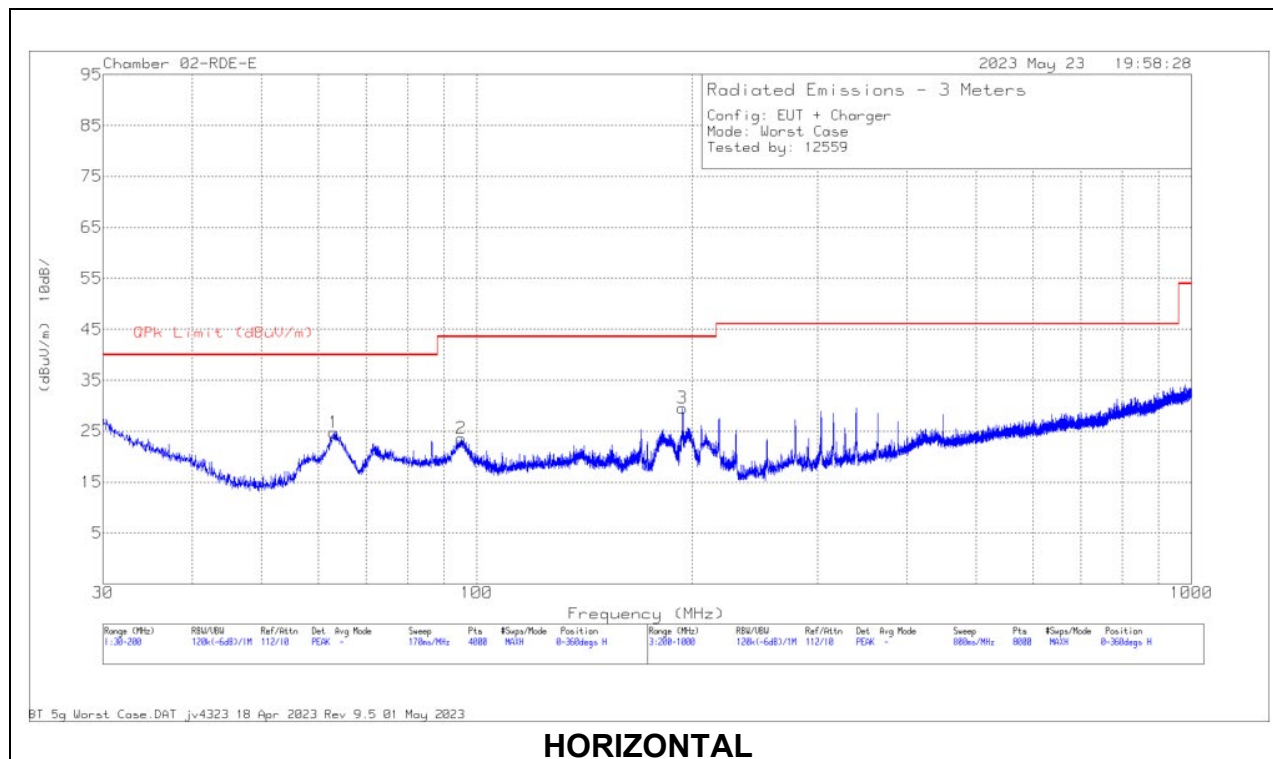
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

10.2. WORST CASE BELOW 1 GHZ

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



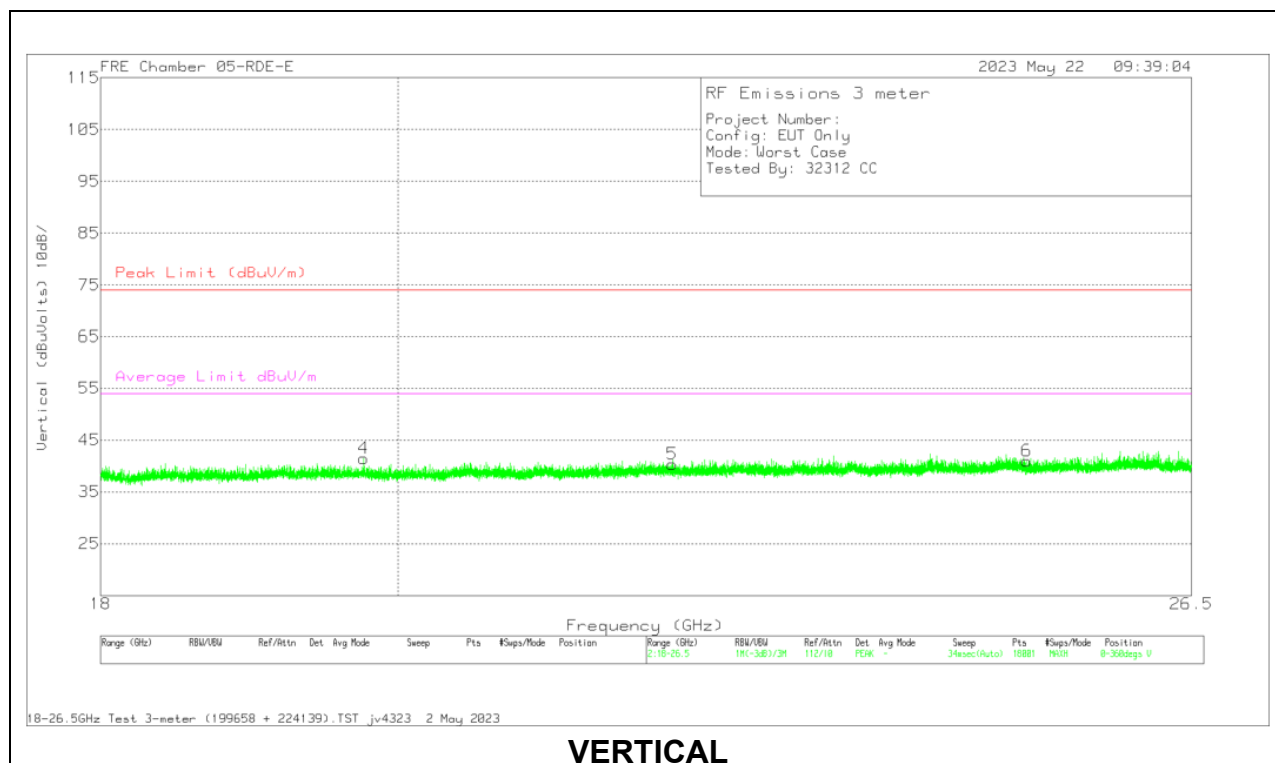
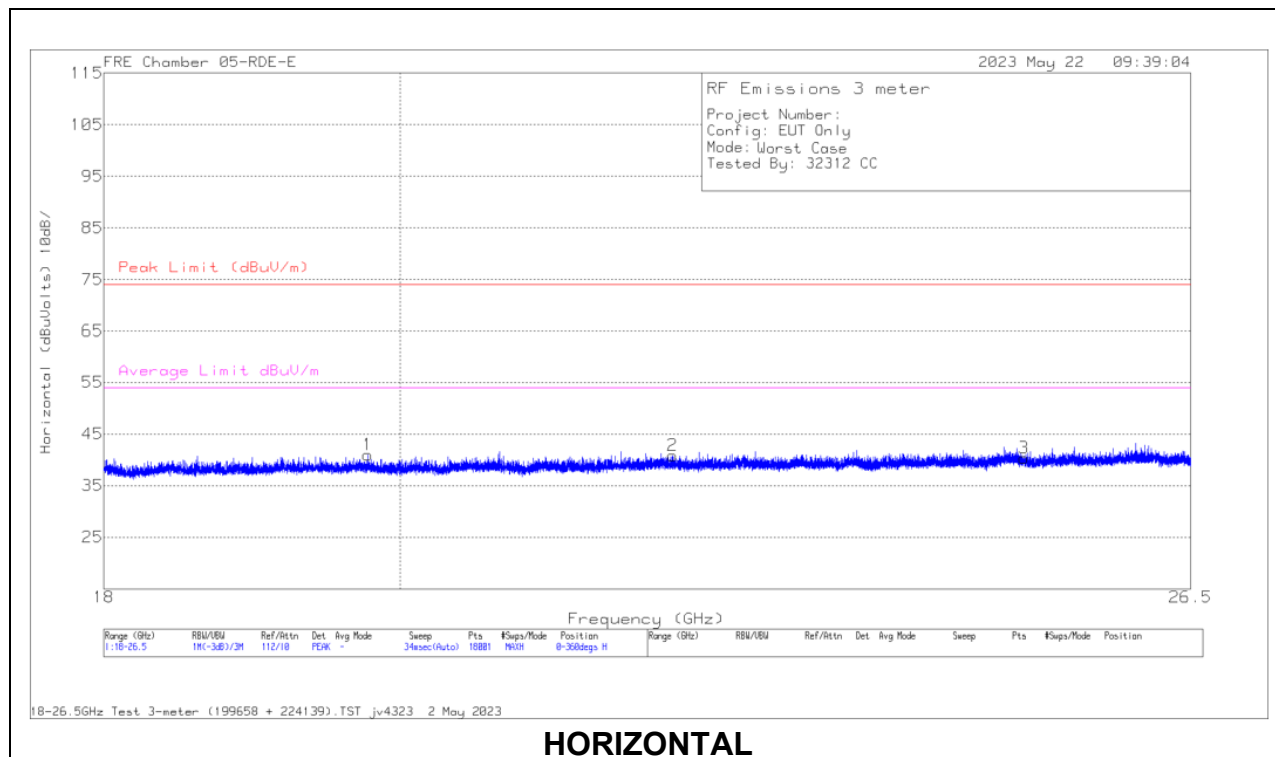
Below 1GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	230635 ACF (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	62.3509	40.83	Pk	13.6	-31.1	23.33	40	-16.67	0-360	100	V
1	63.0736	42.15	Pk	13.7	-31.1	24.75	40	-15.25	0-360	300	H
2	95.2119	39.36	Pk	15	-30.8	23.56	43.52	-19.96	0-360	300	H
5	140.018	32.68	Pk	19	-30.4	21.28	43.52	-22.24	0-360	100	V
3	194.092	41.68	Pk	17.8	-29.9	29.58	43.52	-13.94	0-360	99	H
6	194.135	39.68	Pk	17.8	-29.9	27.58	43.52	-15.94	0-360	100	V

Pk - Peak detector

10.3. WORST CASE 18-26 GHZ

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



18 – 26GHz DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Horn ACF (dB/m)	amp/cbl (dB)	CBL/S WITCH	Corrected Reading (dBuV/olts)	Peak Limit (dBuV/m)	PK Margin (dB)	Average Limit dBuV/m	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	19.759499	57.53	Pk	32.5	-62	13.4	41.43	74	-32.57	54	-12.57	0-360	101	V
1	19.774138	57.22	Pk	32.4	-62.1	13.4	40.92	74	-33.08	54	-13.08	0-360	101	H
2	22.038915	56.4	Pk	32.9	-62.5	14.1	40.9	74	-33.1	54	-13.1	0-360	200	H
5	22.045054	55.78	Pk	33	-62.5	14.1	40.38	74	-33.62	54	-13.62	0-360	200	V
3	24.974719	53.14	Pk	33.6	-61.5	15.1	40.34	74	-33.66	54	-13.66	0-360	101	H
6	24.999274	53.72	Pk	33.6	-61.5	15.1	40.92	74	-33.08	54	-13.08	0-360	101	V

Pk - Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	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.

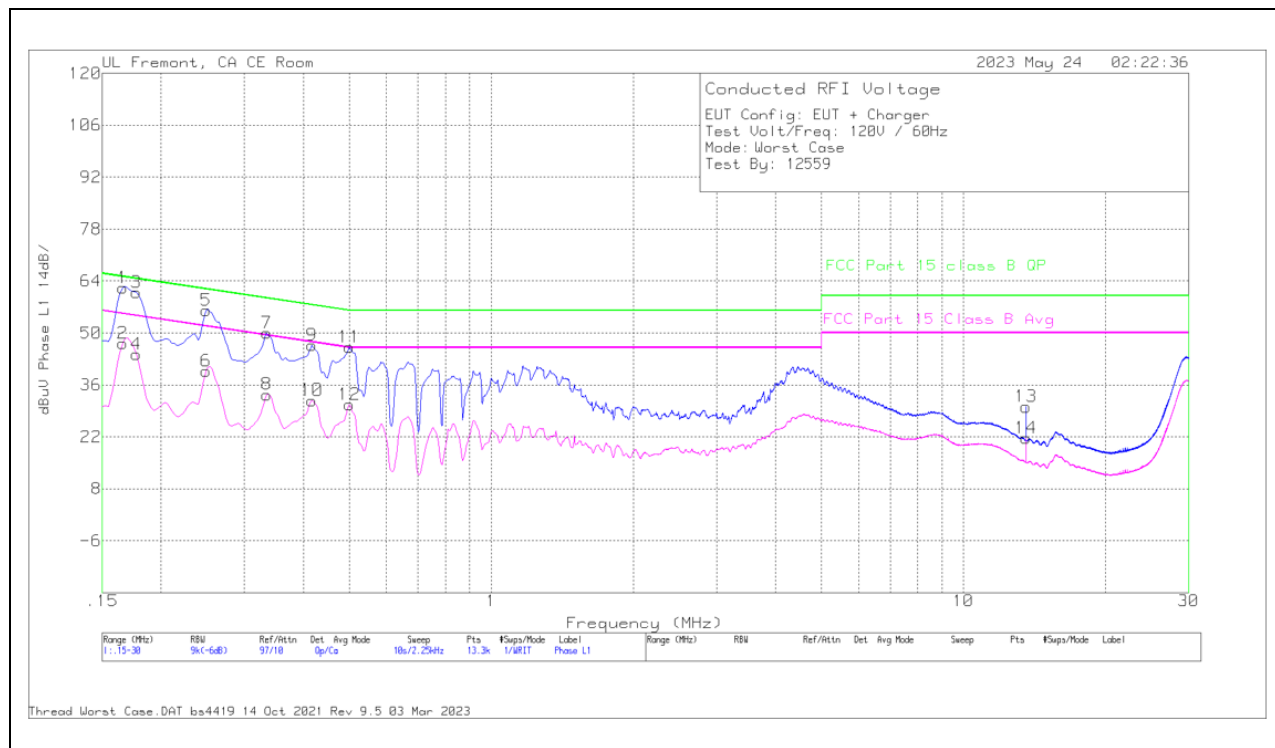
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

11.1. AC Power Line With AC/DC Adapter

LINE 1 RESULTS



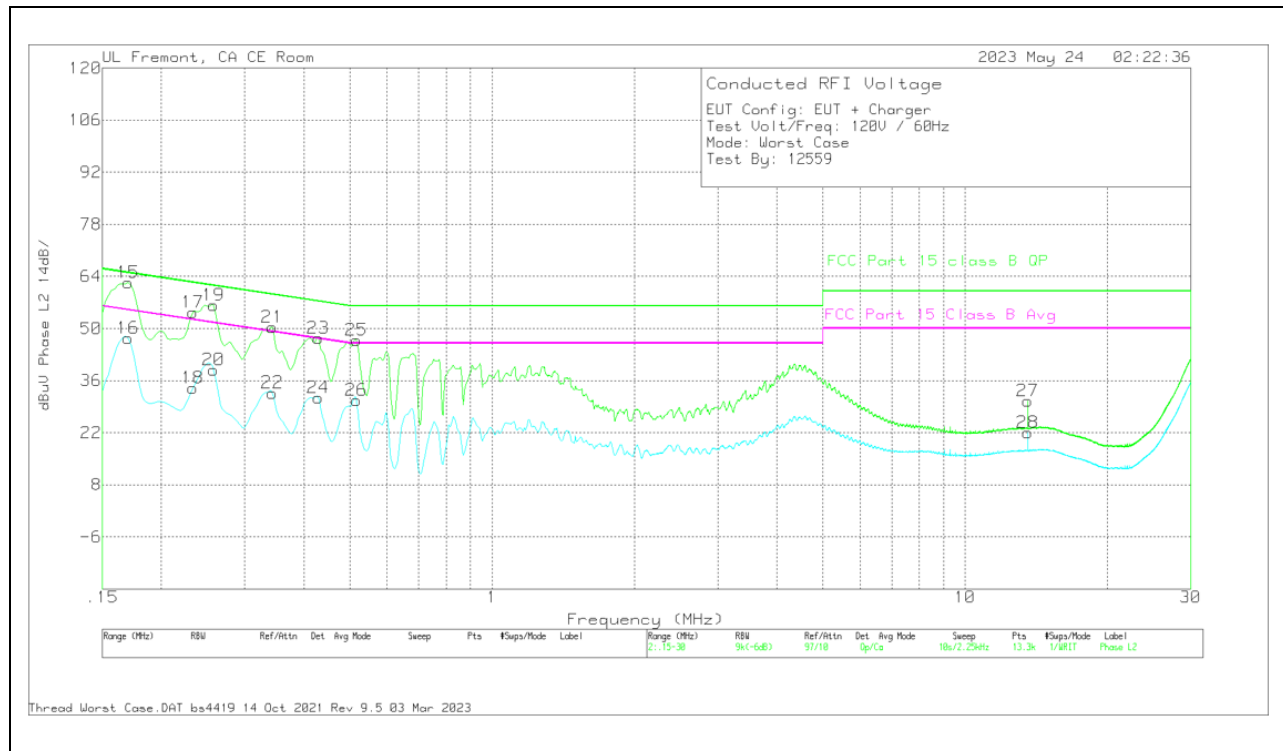
Trace Markers

Range 1: Phase L1 .15 - 30MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	C1&C3 cable path loss (dB)	PRE0186447 LISN L1 (dB)	207996 Limiter with short cabl (dB)	10 dB Pad	Corrected Reading (dBuV)	FCC Part 15 Class B Avg (dBuV)	Margin (dB)	FCC Part 15 class B QP (dBuV)	Margin (dB)
2	.1658	27.89	Ca	0	0	9.4	10	47.29	55.17	-7.88	-	-
4	.177	24.86	Ca	0	0	9.4	10	44.26	54.63	-10.37	-	-
6	.249	20.5	Ca	0	0	9.3	10	39.8	51.79	-11.99	-	-
8	.3345	14.1	Ca	0	0	9.3	10	33.4	49.34	-15.94	-	-
10	.4178	12.43	Ca	.1	0	9.3	10	31.83	47.49	-15.66	-	-
12	.501	11.32	Ca	.1	0	9.3	10	30.72	46	-15.28	-	-
14	13.56	2.04	Ca	.2	.1	9.3	10	21.64	50	-28.36	-	-
1	.1658	42.81	Qp	0	0	9.4	10	62.21	-	-	65.17	-2.96
3	.177	41.61	Qp	0	0	9.4	10	61.01	-	-	64.63	-3.62
5	.249	36.76	Qp	0	0	9.3	10	56.06	-	-	61.79	-5.73
7	.3345	30.63	Qp	0	0	9.3	10	49.93	-	-	59.34	-9.41
9	.4178	27.27	Qp	.1	0	9.3	10	46.67	-	-	57.49	-10.82
11	.501	26.74	Qp	.1	0	9.3	10	46.14	-	-	56	-9.86
13	13.56	10.5	Qp	.2	.1	9.3	10	30.1	-	-	60	-29.9

Qp - Quasi-Peak detector

Ca - CISPR average detection

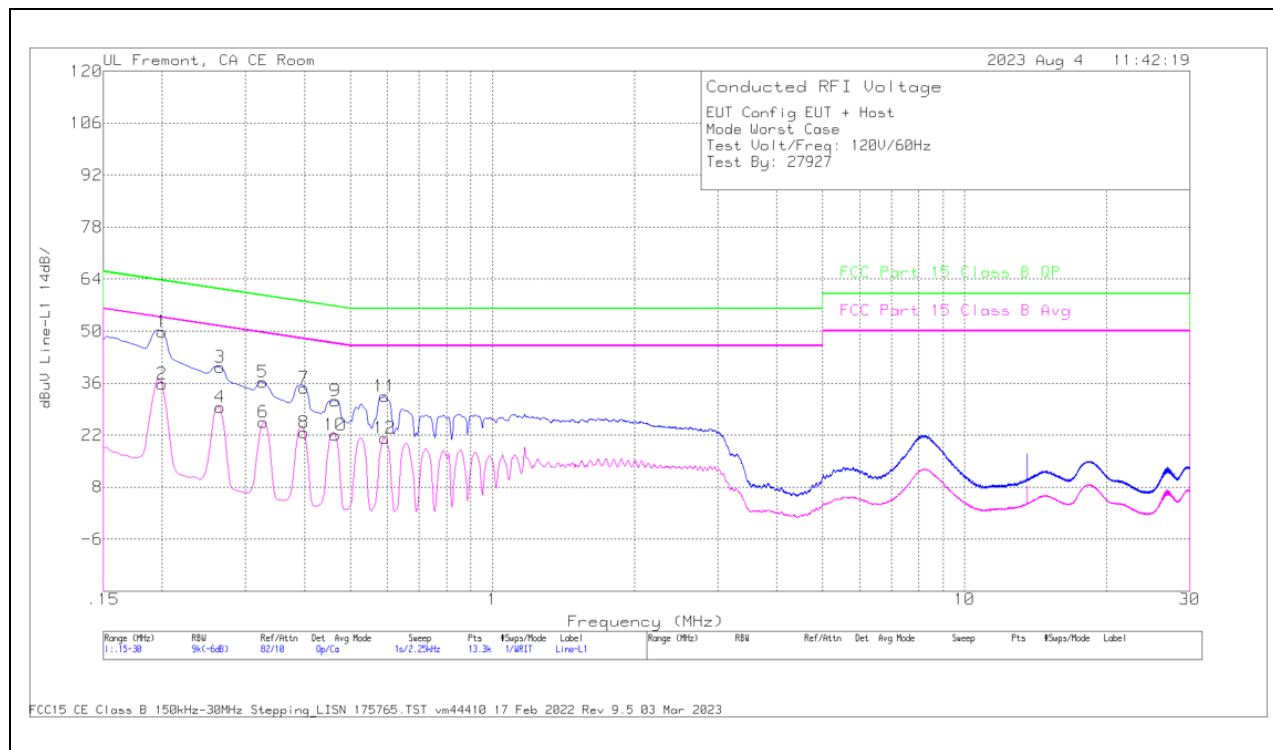
LINE 2 RESULTS



Trace Markers

Range 2: Phase L2 .15 - 30MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	C2&C3 cable path loss (dB)	PRE0186447 LISN L2 (dB)	207996 Limiter with short cabl (dB)	10 dB Pad	Corrected Reading (dBuV)	FCC Part 15 Class B Avg (dBuV)	Margin (dB)	FCC Part 15 class B QP (dBuV)	Margin (dB)
16	.1703	27.95	Ca	0	0	9.4	10	47.35	54.95	-7.6	-	-
18	.2333	14.69	Ca	0	0	9.3	10	33.99	52.33	-18.34	-	-
20	.258	19.53	Ca	0	0	9.3	10	38.83	51.5	-12.67	-	-
22	.3435	13.4	Ca	0	0	9.3	10	32.7	49.12	-16.42	-	-
24	.429	12.04	Ca	.1	0	9.3	10	31.44	47.27	-15.83	-	-
26	.5168	11.31	Ca	.1	0	9.3	10	30.71	46	-15.29	-	-
28	13.56	2.49	Ca	.2	.1	9.3	10	22.09	50	-27.91	-	-
15	.1703	42.9	Qp	0	0	9.4	10	62.3	-	-	64.95	-2.65
17	.2333	34.99	Qp	0	0	9.3	10	54.29	-	-	62.33	-8.04
19	.258	36.96	Qp	0	0	9.3	10	56.26	-	-	61.5	-5.24
21	.3435	31	Qp	0	0	9.3	10	50.3	-	-	59.12	-8.82
23	.429	27.98	Qp	.1	0	9.3	10	47.38	-	-	57.27	-9.89
25	.5168	27.46	Qp	.1	0	9.3	10	46.86	-	-	56	-9.14
27	13.56	10.96	Qp	.2	.1	9.3	10	30.56	-	-	60	-29.44

Qp - Quasi-Peak detector
Ca - CISPR average detection

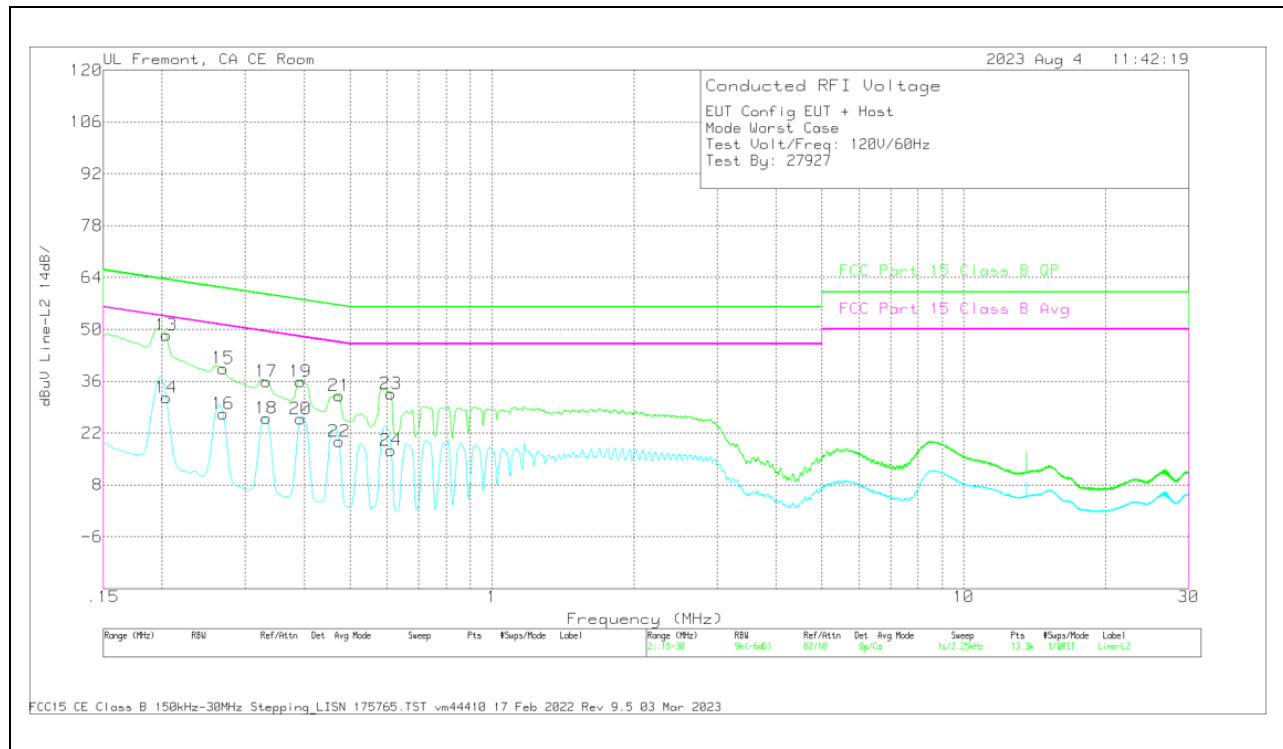
11.2. AC Power Line with Laptop**LINE 1 RESULTS****Trace Markers**

Range 1: Line-L1 15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv (dB)	C1&C3 cable path loss (dB)	207996 Limiter with short cabl (dB)	Corrected Reading (dBuV)	FCC Part 15 Class B QP (dBuV)	QP Margin (dB)	FCC Part 15 Class B Avg (dBuV)	Av(CISPR)M argin (dB)
2	.1995	26.41	Ca	0	0	9.4	35.81	-	-	53.63	-17.82
4	.2648	20.14	Ca	0	0	9.3	29.44	-	-	51.28	-21.84
6	.3278	16.16	Ca	0	0	9.3	25.46	-	-	49.51	-24.05
8	.3998	13.32	Ca	0	.1	9.3	22.72	-	-	47.86	-25.14
10	.465	12.55	Ca	0	.1	9.3	21.95	-	-	46.6	-24.65
12	.591	11.78	Ca	0	.1	9.3	21.18	-	-	46	-24.82
1	.1995	40.46	Qp	0	0	9.4	49.86	63.63	-13.77	-	-
3	.2648	31.03	Qp	0	0	9.3	40.33	61.28	-20.95	-	-
5	.3266	26.9	Qp	0	0	9.3	36.2	59.54	-23.34	-	-
7	.3998	25.38	Qp	0	.1	9.3	34.78	57.86	-23.08	-	-
9	.465	21.77	Qp	0	.1	9.3	31.17	56.6	-25.43	-	-
11	.591	22.98	Qp	0	.1	9.3	32.38	56	-23.62	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS



Trace Markers

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L2_LISN (dB)	C2&C3 cable path loss (dB)	207996 Limiter with short cabl (dB)	Corrected Reading (dBuV)	FCC Part 15 Class B QP (dBuV)	QP Margin (dB)	FCC Part 15 Class B Avg (dBuV)	Av(CISPR)M argin (dB)
14	.204	22.17	Ca	0	0	9.4	31.57	-	-	53.45	-21.88
16	.2693	17.86	Ca	0	0	9.3	27.16	-	-	51.14	-23.98
18	.3323	16.73	Ca	0	0	9.3	26.03	-	-	49.39	-23.36
20	.393	16.49	Ca	0	.1	9.3	25.89	-	-	48	-22.11
22	.474	10.3	Ca	0	.1	9.3	19.7	-	-	46.44	-26.74
24	.6113	7.89	Ca	0	.1	9.3	17.29	-	-	46	-28.71
13	.204	38.96	Qp	0	0	9.4	48.36	63.45	-15.09	-	-
15	.2693	30.18	Qp	0	0	9.3	39.48	61.14	-21.66	-	-
17	.3323	26.68	Qp	0	0	9.3	35.98	59.39	-23.41	-	-
19	.393	26.5	Qp	0	.1	9.3	35.9	58	-22.1	-	-
21	.474	22.74	Qp	0	.1	9.3	32.14	56.44	-24.3	-	-
23	.6113	23.28	Qp	0	.1	9.3	32.68	56	-23.32	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

12. SETUP PHOTOS

Please refer to 14523772-EP1V1 for setup photos

END OF TEST REPORT