



TEST REPORT

Report Number: 13757234-E7V1

Applicant : Magic Leap Inc.
7500 West Sunrise Blvd
Plantation, FL, 33322, US

Model : M1003000, M1004000, M1005000
M1103000, M1104000, M1105000

Brand : Magic Leap Inc.

FCC ID : 2AM5N-ML2M1

IC : 23045-ML2M1

EUT Description : Magic Leap 2 Compute Pack and Headset

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:

May 18, 2022

Prepared by:

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	5/18/2022	Initial Issue	---

TABLE OF CONTENTS

REPORT REVISION HISTORY	2
TABLE OF CONTENTS	3
1. ATTESTATION OF TEST RESULTS.....	5
2. TEST RESULTS SUMMARY	7
3. TEST METHODOLOGY	8
4. FACILITIES AND ACCREDITATION.....	8
5. DECISION RULES AND MEASUREMENT UNCERTAINTY.....	9
5.1. METROLOGICAL TRACEABILITY	9
5.2. DECISION RULES	9
5.3. MEASUREMENT UNCERTAINTY	9
5.4. SAMPLE CALCULATION.....	9
6. EQUIPMENT UNDER TEST	10
6.1. EUT DESCRIPTION.....	10
6.2. MODEL DIFFERENCES	10
6.3. MAXIMUM OUTPUT POWER.....	10
6.4. DESCRIPTION OF AVAILABLE ANTENNAS	10
6.5. SOFTWARE AND FIRMWARE.....	10
6.6. WORST-CASE CONFIGURATION AND MODE.....	11
6.7. DESCRIPTION OF TEST SETUP.....	12
7. MEASUREMENT METHOD	14
8. TEST AND MEASUREMENT EQUIPMENT	15
9. ANTENNA PORT TEST RESULTS	16
9.1. ON TIME AND DUTY CYCLE	16
9.2. 99% BANDWIDTH.....	18
9.2.1. BLE (1Mbps)	18
9.2.2. BLE (2Mbps)	19
9.3. 6 dB BANDWIDTH	20
9.3.1. BLE (1Mbps)	20
9.3.2. BLE (2Mbps)	21
9.4. OUTPUT POWER	22
9.4.1. BLE (1Mbps)	22
9.4.2. BLE (2Mbps)	22

9.5. AVERAGE POWER.....23
9.5.1. BLE (1Mbps)23
9.5.2. BLE (2Mbps)23
9.6. POWER SPECTRAL DENSITY24
9.6.1. BLE (1Mbps)24
9.6.2. BLE (2Mbps)25
9.7. CONDUCTED SPURIOUS EMISSIONS.....26
9.7.1. BLE (1Mbps)27
9.7.2. BLE (2Mbps)28
10. RADIATED TEST RESULTS.....29
10.1. LIMITS AND PROCEDURE29
10.2. TRANSMITTER ABOVE 1 GHz31
10.2.1. BLE (1Mbps).....31
10.2.2. BLE (2Mbps).....41
10.3. WORST CASE BELOW 30MHZ.....51
10.4. WORST CASE BELOW 1 GHZ.....52
10.5. WORST CASE 18-26 GHZ.....54
11. AC POWER LINE CONDUCTED EMISSIONS56
12. SETUP PHOTOS.....59

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Magic Leap Inc
7500 West Sunrise Blvd
Plantation, FL, 33322, US

EUT DESCRIPTION: Magic Leap 2 Compute Pack and Headset

BRAND: Magic Leap Inc.

MODEL: M1003000, M1004000, M1005000
M1103000, M1104000, M1105000

MODEL TESTED: M1003000

SERIAL NUMBER: P552X8E001Q

SAMPLE RECEIPT DATE: AUGUST 10, 2021

DATE TESTED: AUGUST 11, 2021 – AUGUST 19, 2021

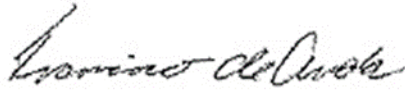
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Complies
ISED RSS-247 Issue 2	Complies
ISED RSS-GEN Issue 5 + A1 + A2	Complies

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 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 Verification Services Inc. and all revisions are duly 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:



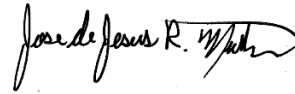
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2. TEST RESULTS SUMMARY

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

FCC Clause	ISED Clause	Requirement	Result	Comment
See Comment		Duty Cycle	Reporting purposes only	ANSI C63.10 Section 11.6.
-	RSS-GEN 6.7	99% OBW	Reporting purposes only	ANSI C63.10 Section 6.9.3.
15.247 (a) (2)	RSS-247 5.2 (a)	6dB BW	Compliant	None.
15.247 (b) (3)	RSS-247 5.4 (d)	Output Power	Compliant	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	Compliant	None.
15.247 (d)	RSS-247 5.5	Conducted Spurious Emissions	Compliant	None.
15.209, 15.205	RSS-GEN 8.9, 8.10	Radiated Emissions	Compliant	None.
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions	Compliant	None.

For Colocation Test results, please refer to UL Verification Services Inc report number 13757234-E13V1.

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 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, RSS-GEN Issue 5 + A1 + A2, and RSS-247 Issue 2.

The scope of this report covers the BLE mode in the 2.4GHz band of Models M1003000, M1004000, M1005000, M1103000, M1104000, M1105000.

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, Certificate Number #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
<input checked="" type="checkbox"/>	Building 1: 47173 Benicia Street Fremont, CA 94538, U.S.A	US0104	2324A	550739
<input type="checkbox"/>	Building 2: 47266 Benicia Street Fremont, CA 94538, U.S.A	US0104	22541	550739
<input checked="" type="checkbox"/>	Building 4: 47658 Kato Rd Fremont, CA 94538, U.S.A	US0104	2324B	550739

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}
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	2.84 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:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

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

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + 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

EUT is a spatial AR computing device consists of compute pack and headset. The compute pack includes BT, BLE, 802.11 a/b/g/n/ac/ax radio transceivers.

6.2. MODEL DIFFERENCES

Models M1003000, M1004000, M1005000, M1103000, M1104000, and M1105000 are electronically identical. The model numbers are to differentiate the markets and regions of sale.

6.3. MAXIMUM OUTPUT POWER

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

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2402 - 2480	BLE	7.78	6.00

6.4. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna(s) gain and type, as provided by the manufacturer' are as follows:

The radio utilizes an Dual Band PCB Printed antenna, with a maximum gain of 2.00 dBi.

6.5. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was PEQ3B

The test utility software used during testing was proprietary software via command prompt.

6.6. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 30MHz, below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT set to transmit at the channel with highest 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, Z, it was determined that X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation.

The worst-case data rates were determined to be as follows, based on input from the manufacturer of the radio.

BLE: 1 Mbps.

BLE: 2 Mbps

6.7. DESCRIPTION OF TEST SETUP

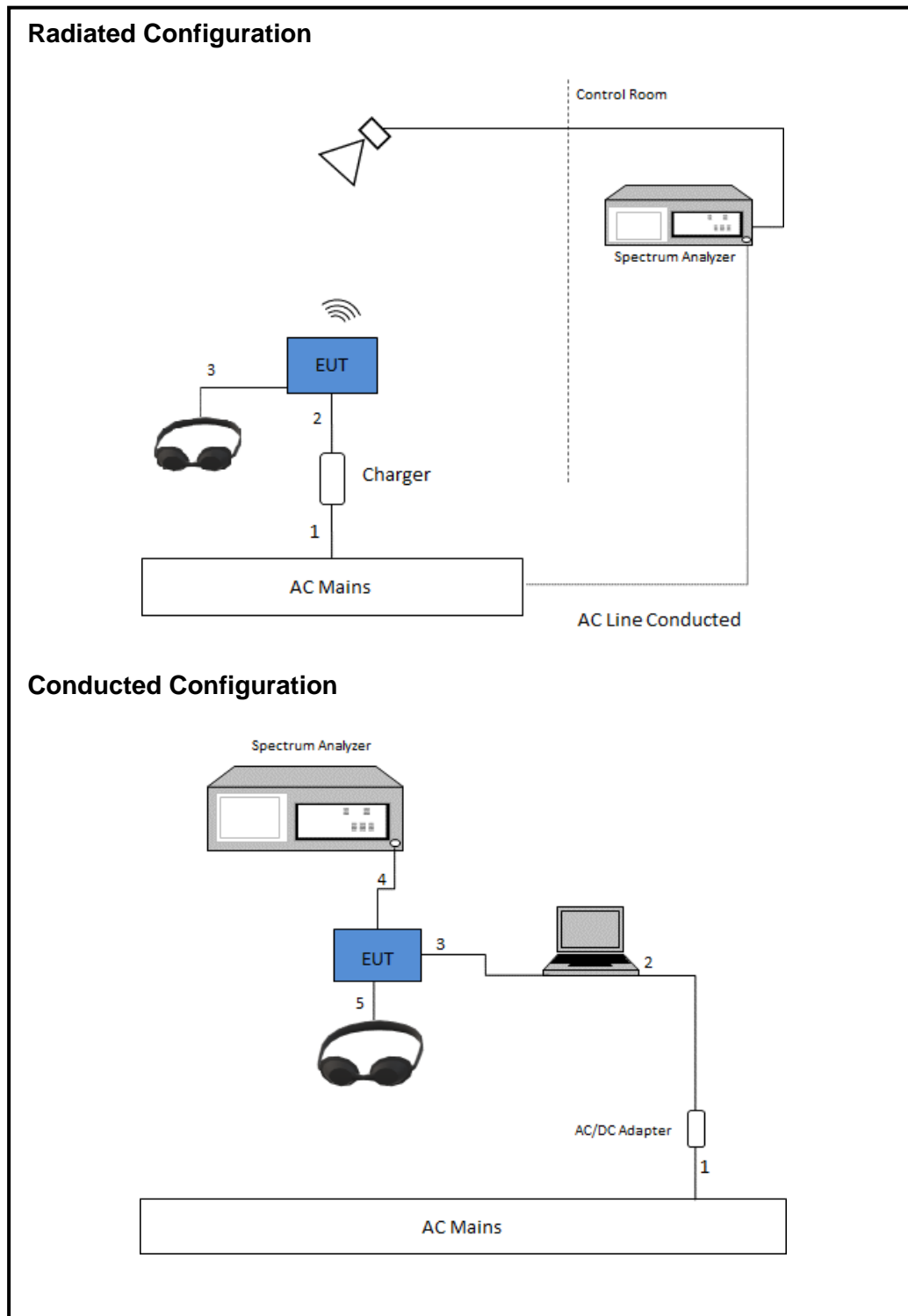
SUPPORT TEST EQUIPMENT						
Description	Manufacturer	Model	Serial Number	FCC ID/ DoC		
Laptop (Radiated)	HP	EliteBook 840 G3	5CG6253DNC	DoC		
Laptop AC Adapter (Radiated)	HP	709986-003	WDHKR0AAR8U467	DoC		
Charger	Magic Leap	M3013	E135498	DoC		
Laptop (Conducted)	HP	EliteBook 840 G3	5CG65235OJ	DoC		
Laptop AC Adapter (Conducted)	HP	854055-002	CTWFTKVOEGC95379	DoC		
I/O CABLES (CONDUCTED TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC Power	1	AC (3-prong)	Un-shielded	1.25	AC Mains to DC Power Adapter
2	DC	1	3-pin	Un-shielded	1	Power adapter to laptop
3	USB-C	1	USB Type C	Shielded	0.9	USB-C to EUT USB-C
4	Antenna	1	SMA	Un-shielded	.5	Antenna to Analyzer
5	A/V, Data	1	Permanent	Shielded	1.25	EUT to headset
I/O CABLES (RADIATED TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC Power	1	AC (2-prong)	Un-shielded	1.25	AC Mains to Power Adapter
2	USB-C	1	USB Type C	Shielded	0.9	Power Adapter to EUT
3	A/V Data	1	Permanent	Shielded	1.25	EUT to headset

TEST SETUP

A test laptop is used to program the EUTs and then removed during radiated tests. Test software exercised the radio card. For radiated emissions, EUT was powered by AC/DC adapter and for conducted tests the EUT was connected to laptop via USB.

The computer pack and headset are permanently connected.

SETUP DIAGRAMS



7. MEASUREMENT METHOD

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

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 Method AVGPM-G (Measurement using a gated RF average-reading power meter)

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

Radiated emissions non-restricted frequency bands: ANSI C63.10 Subclause -11.11

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

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

Band-edge: ANSI C63.10 Section 6.10

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

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

8. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST					
Description	Manufacturer	Model	ID Num	Cal Due	Last Cal
Antenna, Broadband Hybrid, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	174373	12/02/2021	12/02/2020
Amplifier, 10KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310N	T300	04/09/2022	04/09/2021
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	T119	05/07/2022	05/07/2021
Amplifier, 1 - 18GHz	MITEQ	AFS42-00101800-25-S-42	T1568	04/09/2022	04/09/2021
EMI TEST RECEIVER, with B8 option	Rohde & Schwarz	ESW44	PRE0179377	02/23/2022	02/23/2021
Antenna, Horn 18 to 26.5GHz	ARA	MWH-1826/B	T447	09/24/2021	09/24/2020
Rf Amplifier, 18-26.5GHz, 60dB gain	AMPLICAL	AMP18G26.5-60	171590	05/21/2022	05/21/2021
Antenna, Passive Loop 30Hz - 1MHz	ELECTRO METRICS	EM-6871	SC-8015	05/24/2022	05/24/2021
Antenna, Passive Loop 100KHz - 30MHz	ELECTRO METRICS	EM-6872	SC-8014	05/24/2022	05/24/2021
Spectrum Analyzer, PSA, 3Hz to 44GHz	Keysight Technologies Inc	E4446A	T123	01/22/2022	01/22/2021
Power Meter, P-series single channel	Keysight Technologies Inc	N1911A	T1269	01/25/2022	01/25/2021
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight Technologies Inc	N1921A	T1223	06/17/2022	06/17/2021
AC Line Conducted					
LISN	Fischer Custom Communications, Inc	FCC-LISN-50/250-25-2-01-480V	PRE0186446	01/20/2022	01/20/2021
EMI TEST RECEIVER	Rohde & Schwarz	ESR	T1436	02/19/2022	02/19/2021
Transient Limiter	TE	TBFL1	207996	06/01/2022	06/01/2021
UL TEST SOFTWARE LIST					
Radiated Software	UL	UL EMC	Rev 9.5, Apr 30, 2020		
Antenna Port Software	UL	UL RF	Ver 2021.08.11		
AC Line Conducted Software	UL	UL EMC	Rev 9.5, 07 Jul 2020		

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

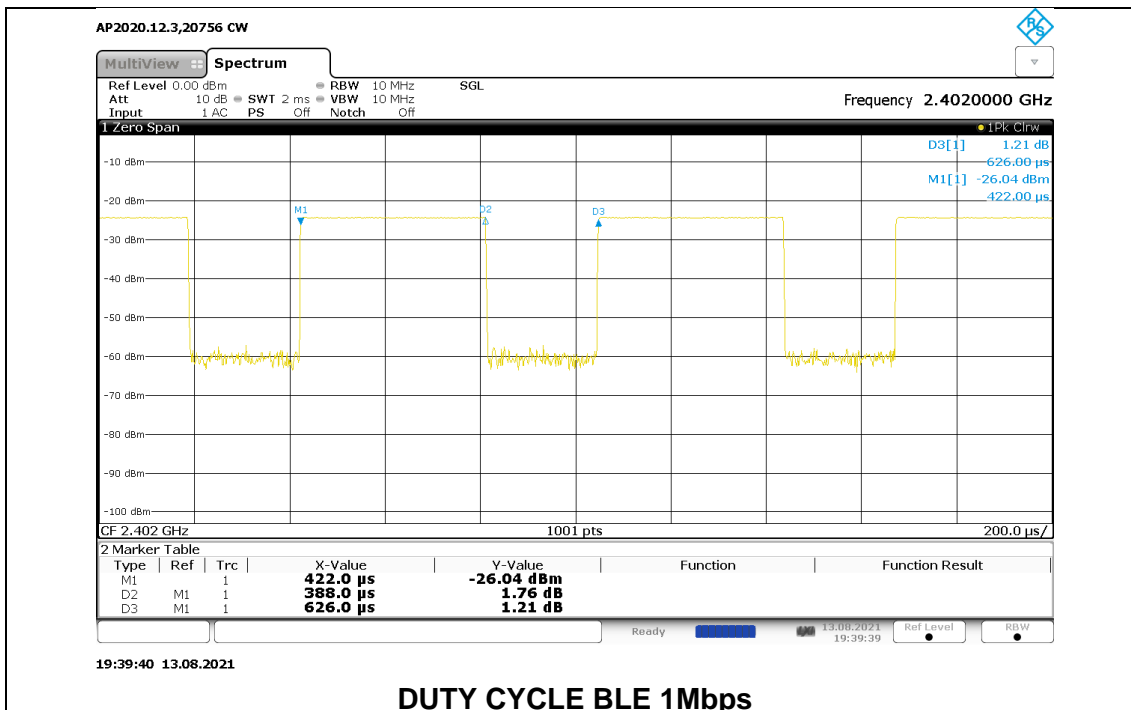
PROCEDURE

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						
BLE 1Mbps	0.388	0.626	0.620	61.98	2.08	2.577
BLE 2Mbps	0.204	0.624	0.327	32.69	4.86	4.902

DUTY CYCLE PLOTS



9.2. 99% BANDWIDTH

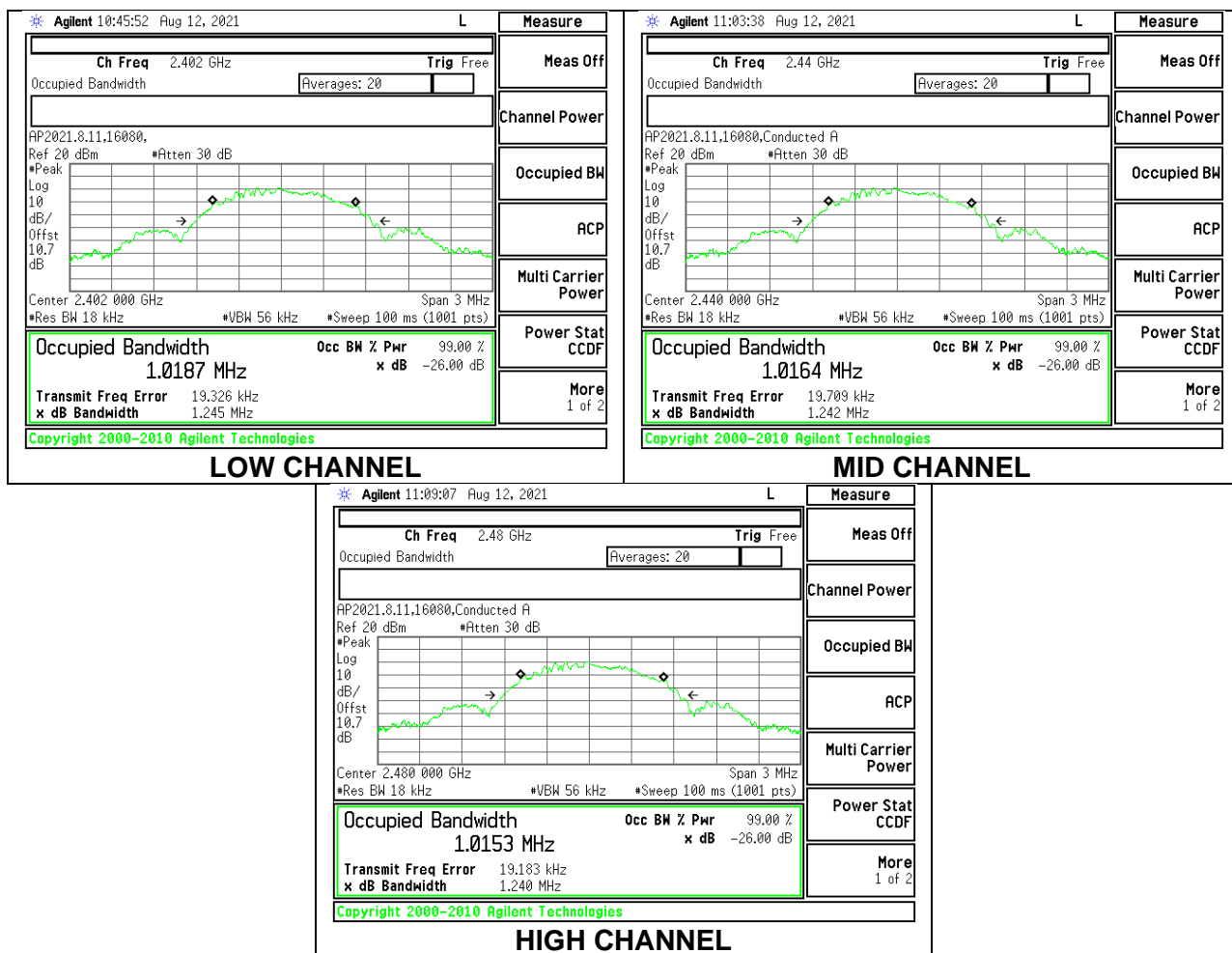
LIMITS

None; for reporting purposes only.

RESULTS

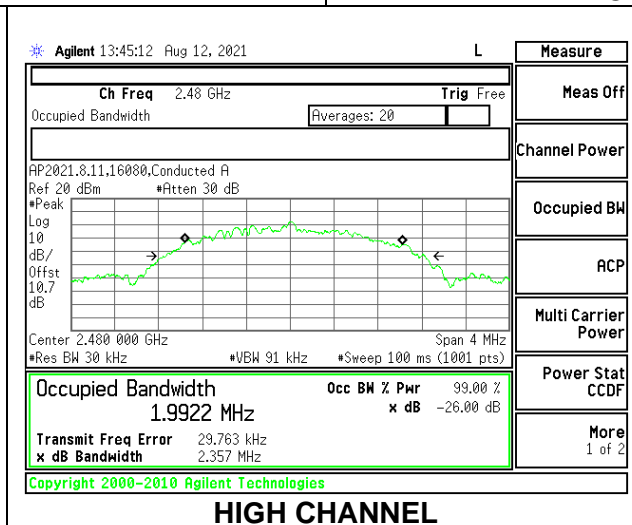
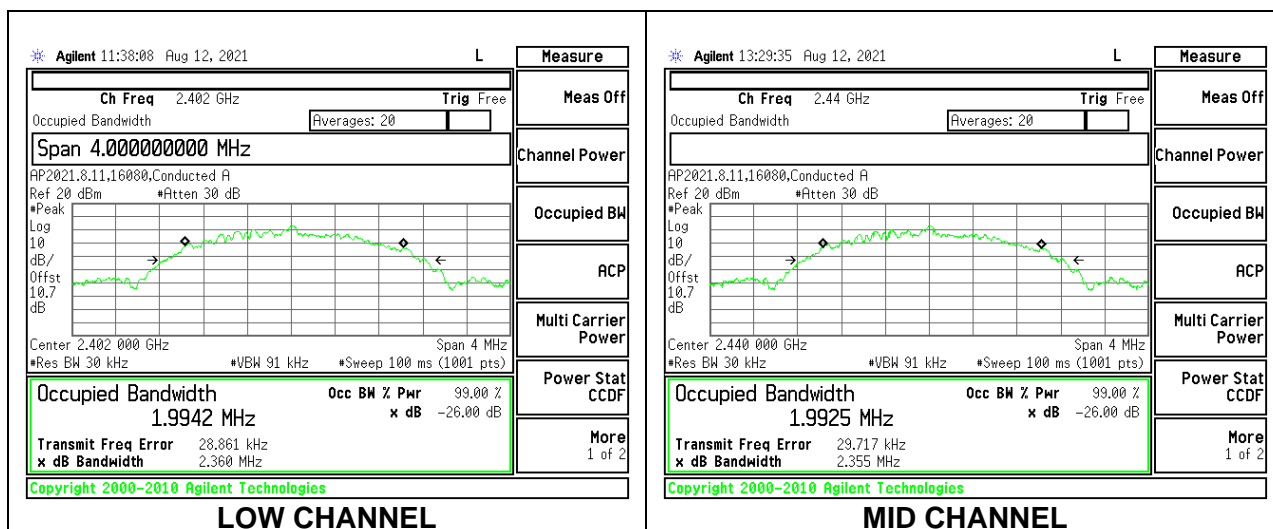
9.2.1. BLE (1Mbps)

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0187
Middle	2440	1.0164
High	2480	1.0153



9.2.2. BLE (2Mbps)

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.9942
Middle	2440	1.9925
High	2480	1.9922



9.3. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

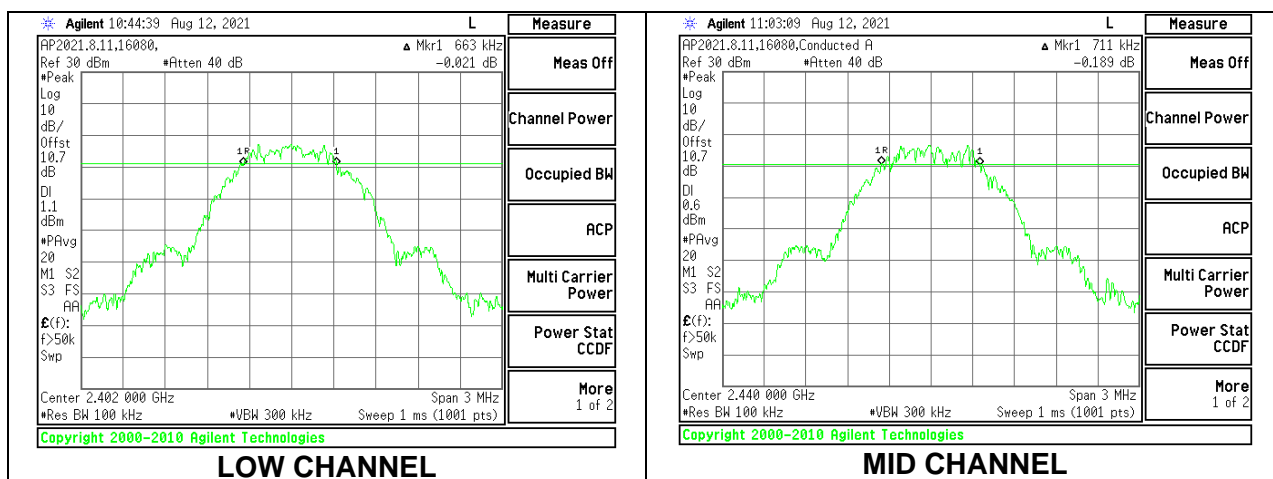
RSS-247 5.2 (a)

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

RESULTS

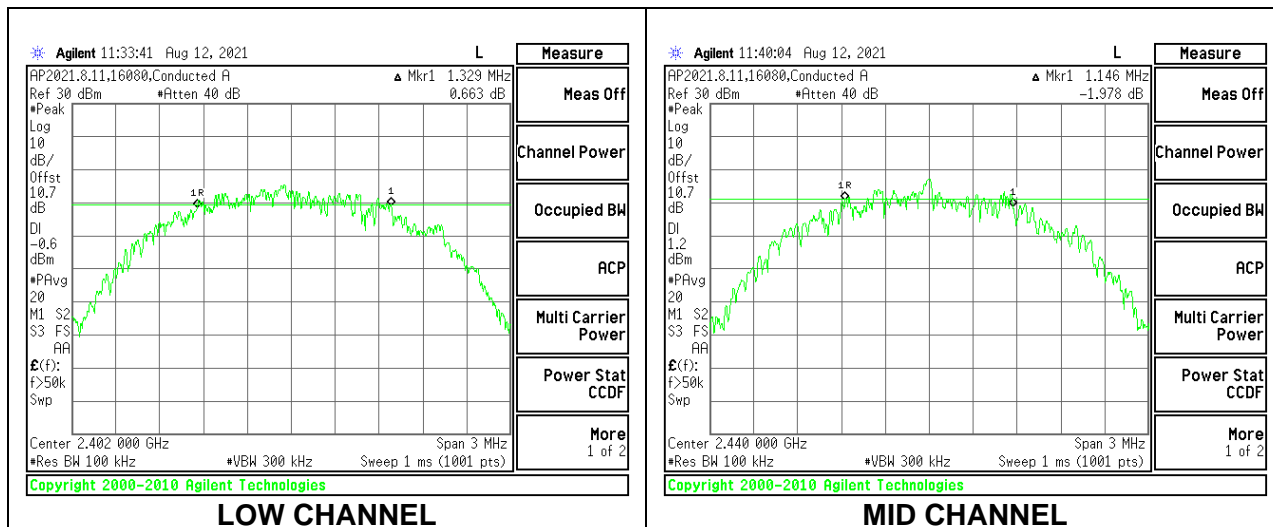
9.3.1. BLE (1Mbps)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.663	0.5
Middle	2440	0.711	0.5
High	2480	0.678	0.5



9.3.2. BLE (2Mbps)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	1.329	0.5
Middle	2440	1.146	0.5
High	2480	1.125	0.5



9.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

RSS-247 5.4 (d)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

The transmitter output is connected to a 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 power meter.

RESULTS

9.4.1. BLE (1Mbps)

Tested By:	16080 ZS
Date:	8/11/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	7.56	30	-22.440
Middle	2440	7.29	30	-22.710
High	2480	6.77	30	-23.230

9.4.2. BLE (2Mbps)

Tested By:	16080 ZS
Date:	8/11/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	7.78	30	-22.220
Middle	2440	7.49	30	-22.510
High	2480	6.98	30	-23.020

9.5. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a 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. BLE (1Mbps)

Tested By:	16080 ZS
Date:	8/11/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	7.42
Middle	2440	7.14
High	2480	6.6

9.5.2. BLE (2Mbps)

Tested By:	16080 ZS
Date:	8/11/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	7.43
Middle	2440	7.14
High	2480	6.6

9.6. POWER SPECTRAL DENSITY

LIMITS

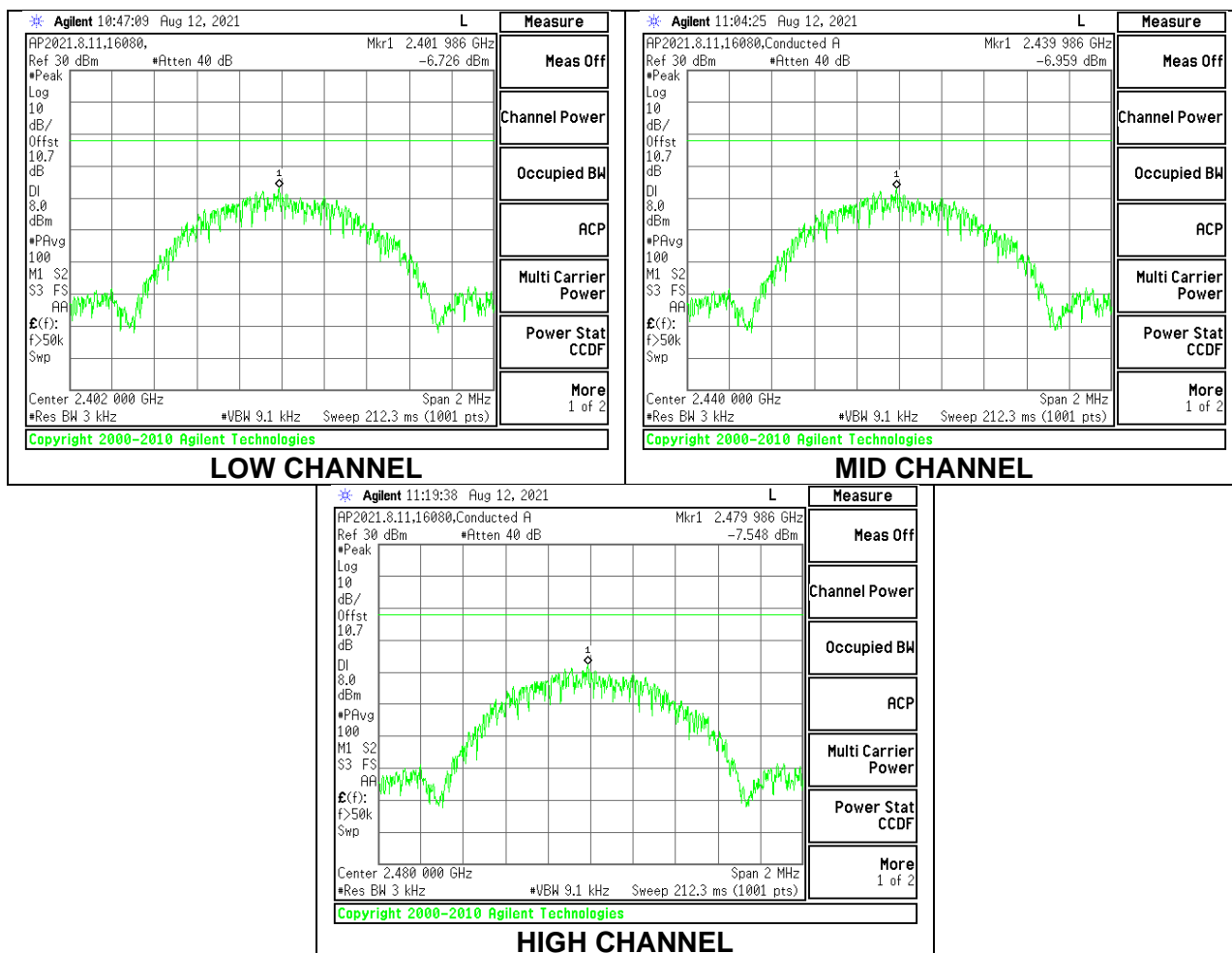
FCC §15.247 (e)
 RSS-247 (5.2) (b)

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

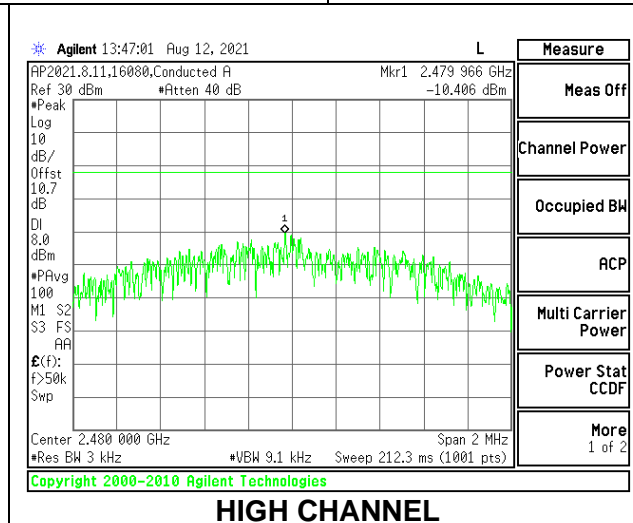
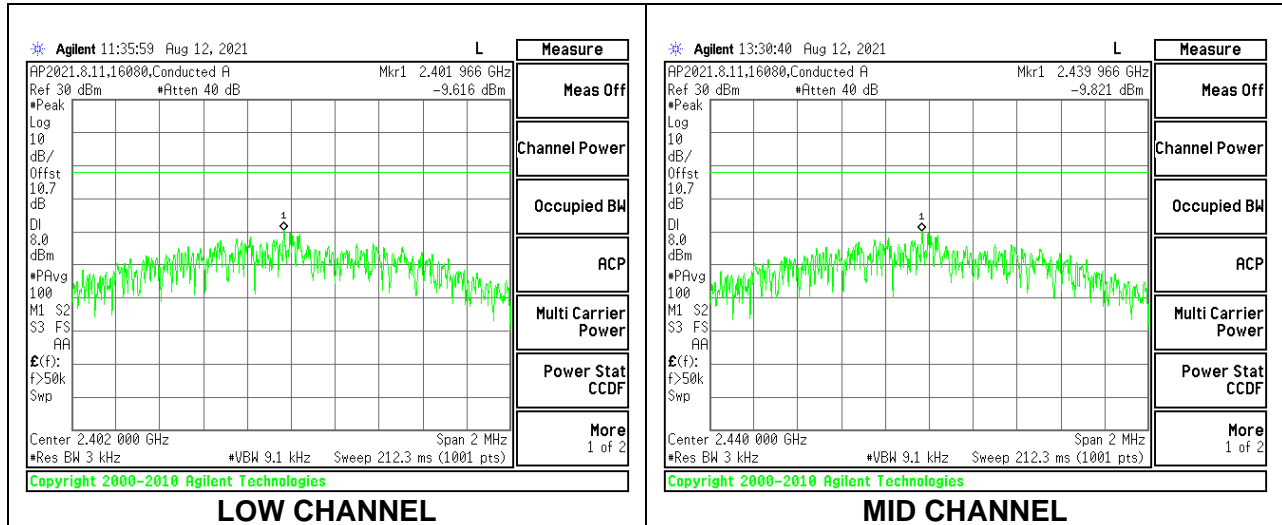
9.6.1. BLE (1Mbps)

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-6.726	8	-14.73
Middle	2440	-6.959	8	-14.96
High	2480	-7.548	8	-15.55



9.6.2. BLE (2Mbps)

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-9.616	8	-17.62
Middle	2440	-9.821	8	-17.82
High	2480	-10.406	8	-18.41



9.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

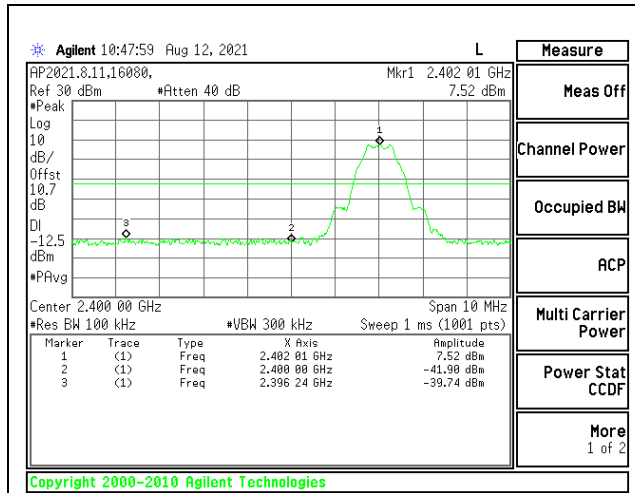
FCC §15.247 (d)

RSS-247 5.5

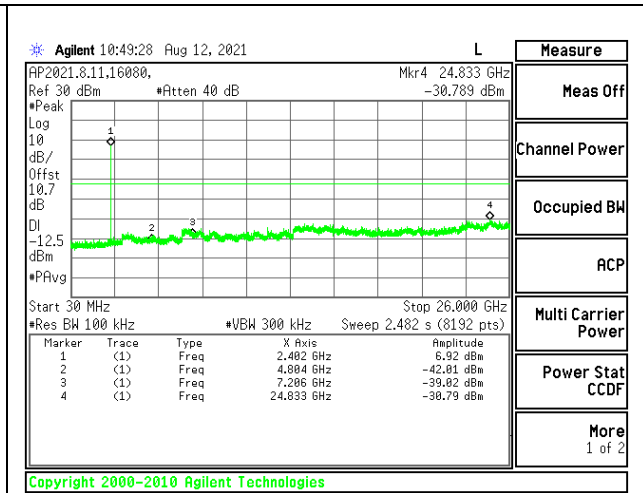
Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

RESULTS

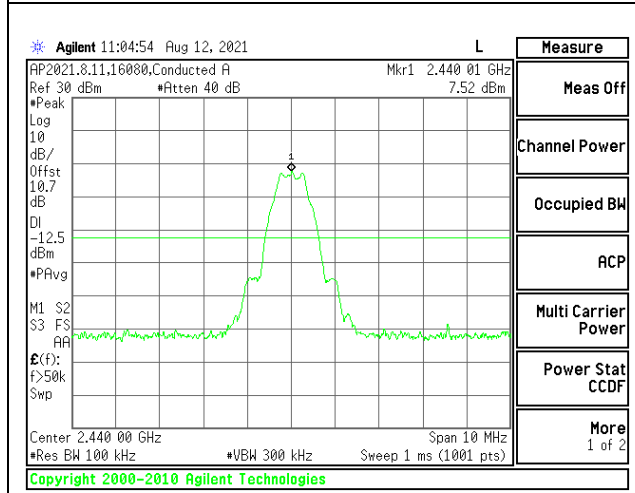
9.7.1. BLE (1Mbps)



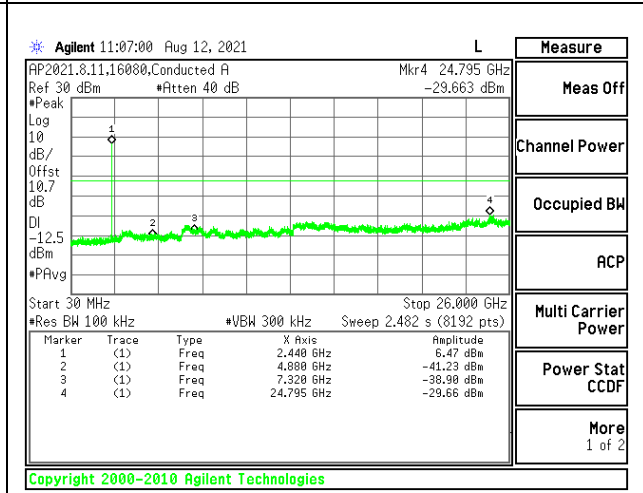
LOW CHANNEL BANDEDGE



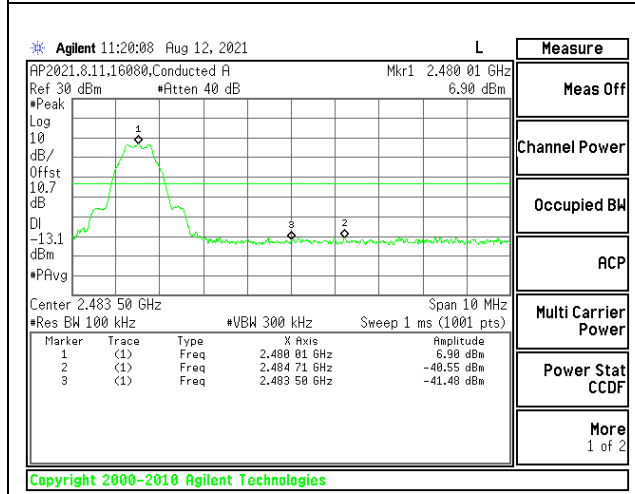
OUT-OF-BAND LOW CHANNEL



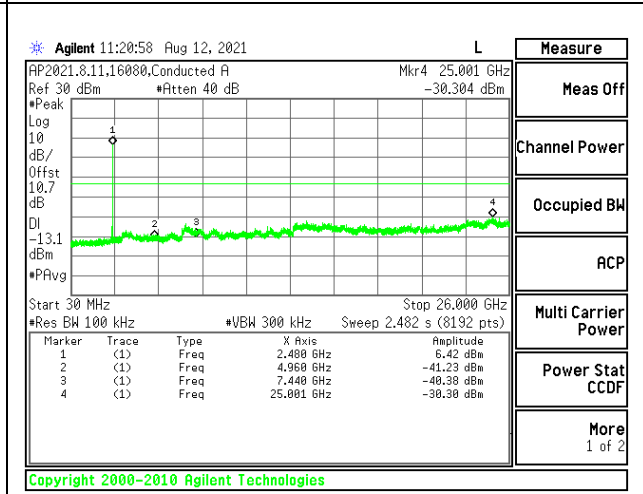
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL

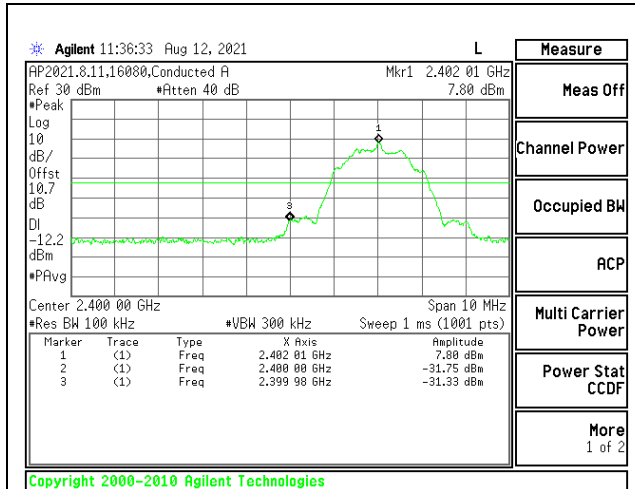


HIGH CHANNEL BANDEDGE

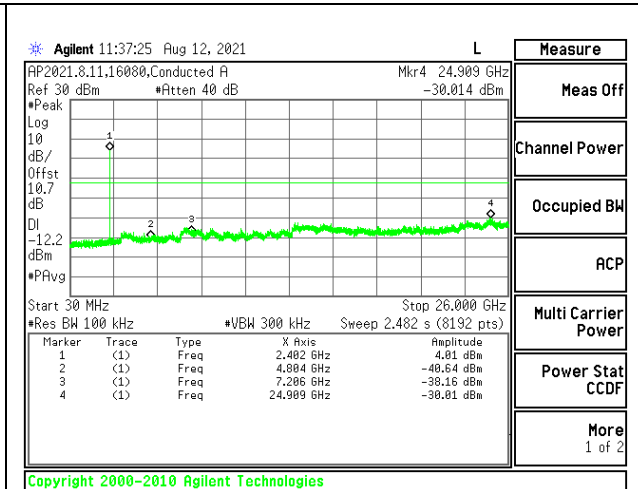


OUT-OF-BAND HIGH CHANNEL

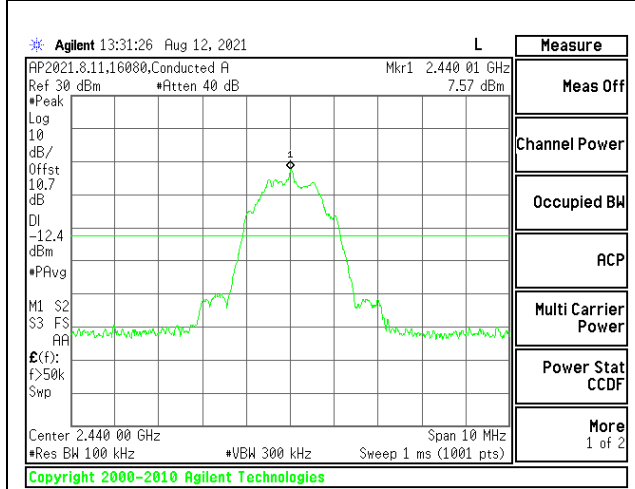
9.7.2. BLE (2Mbps)



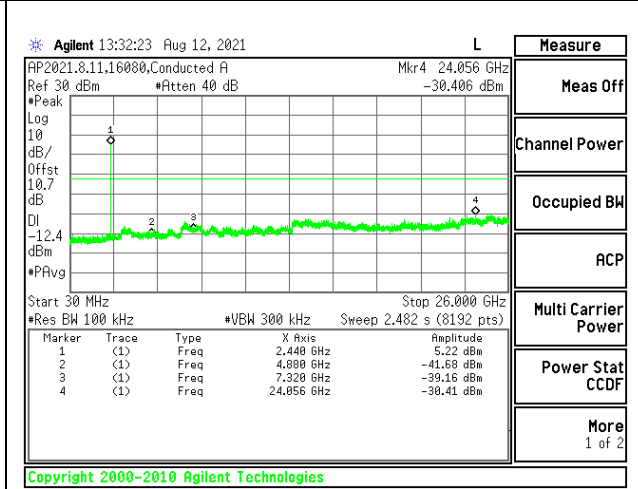
LOW CHANNEL BANDEDGE



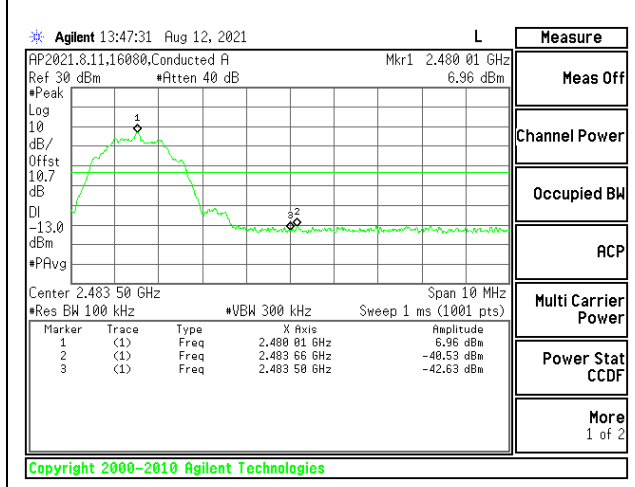
OUT-OF-BAND LOW CHANNEL



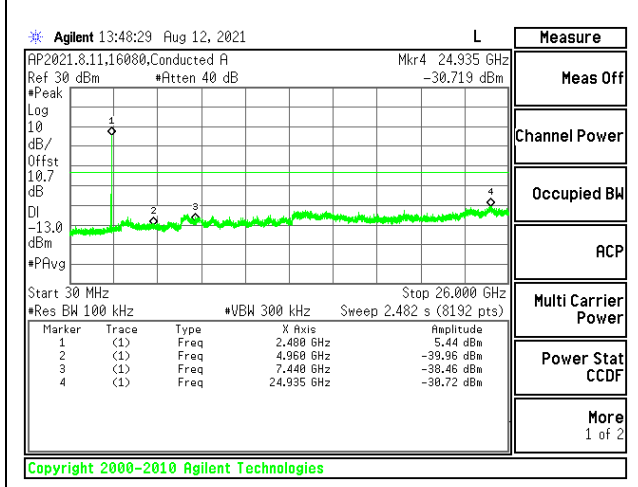
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

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 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 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.

2D antenna use - For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel), parallel and perpendicular are the worst orientations, therefore testing was performed on these two orientations only.

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.

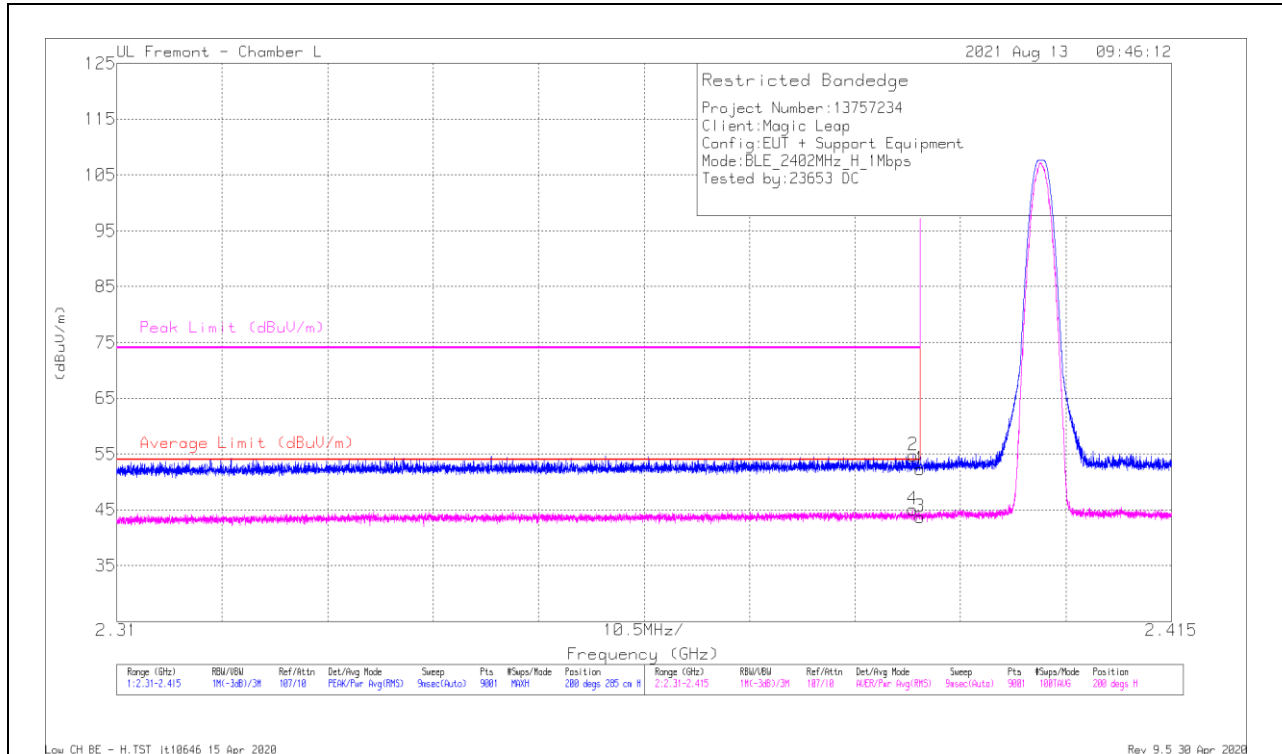
NOTE: The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table), using the free space impedance 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.

10.2. TRANSMITTER ABOVE 1 GHz

10.2.1. BLE (1Mbps)

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



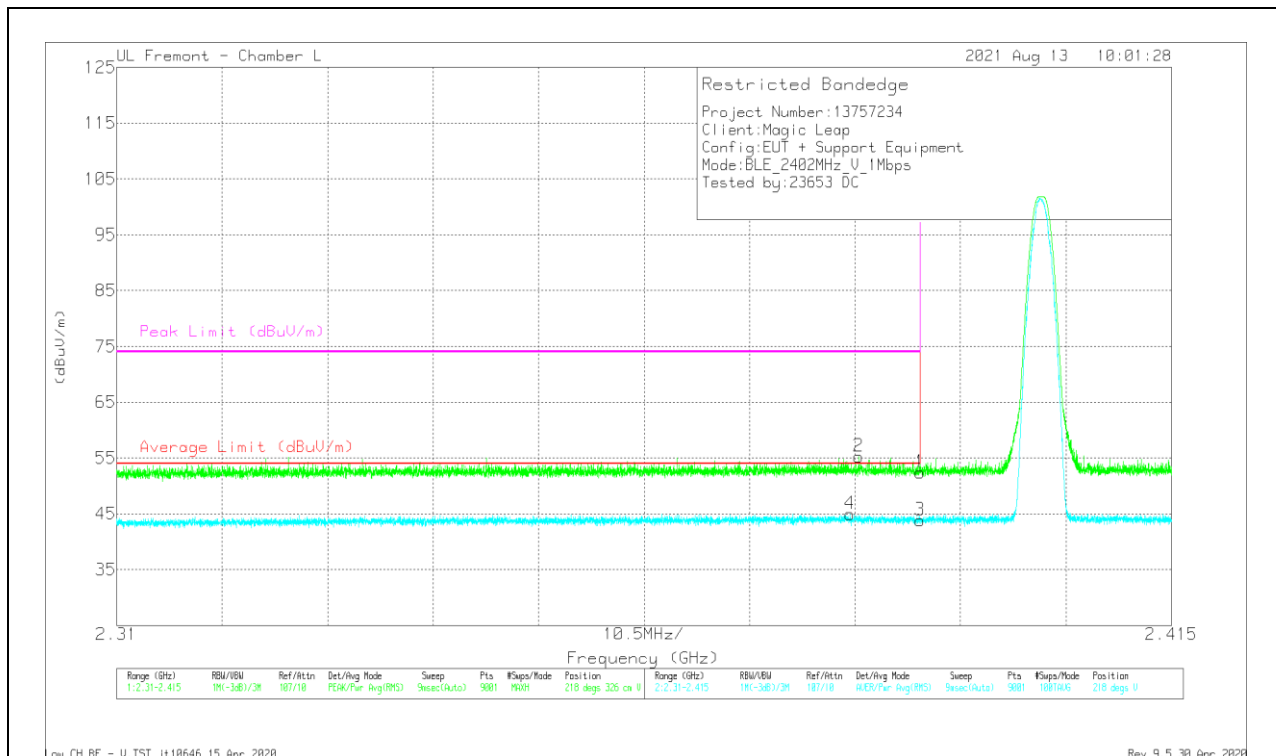
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/CBI/Filt/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38999	39.57	Pk	32	-19.3	0	52.27	-	-	74	-21.73	200	285	H
2	* 2.3893	42.17	PK	32	-19.4	0	54.77	-	-	74	-19.23	200	285	H
3	* 2.38999	28.89	RMS	32	-19.3	2.08	43.67	54	-10.33	-	-	200	285	H
4	* 2.38921	30.36	RMS	32	-19.4	2.08	45.04	54	-8.96	-	-	200	285	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	AF 1119 (dBm)	Amp/Cal/Fit/Pad (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	* 2.38999	39.74	Pk	32	-19.3	0	52.44	-	-	74	-21.56	218	326	V
2	* 2.38388	42.42	Pk	32.1	-19.3	0	55.22	-	-	74	-18.78	218	326	V
3	* 2.38999	29.1	RMS	32	-19.3	2.08	43.88	54	-10.12	-	-	218	326	V
4	* 2.38301	30.21	RMS	32.1	-19.4	2.08	44.99	54	-9.01	-	-	218	326	V

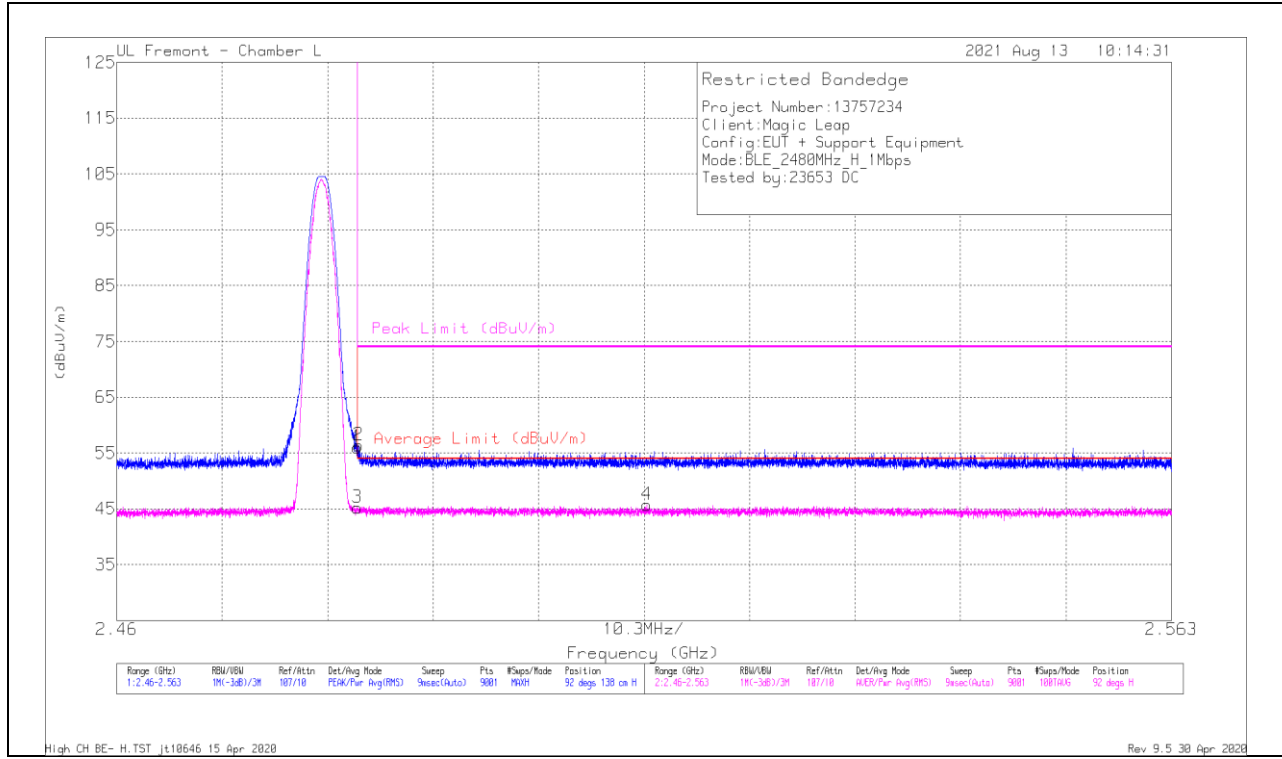
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL)

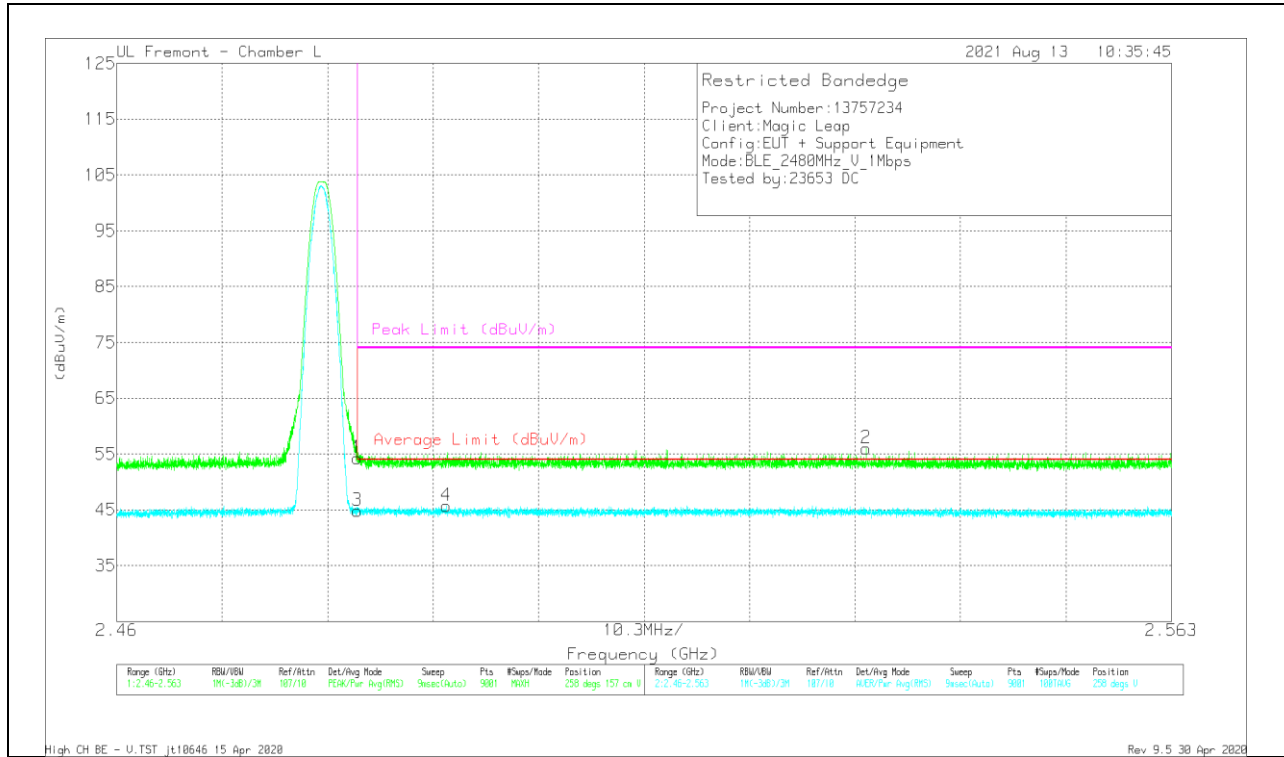
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dBm)	Amp/Cbl/Fitr/Pad (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	* 2.48351	42.73	Pk	32.3	-19	0	56.03	-	-	74	-17.97	92	138	H
2	* 2.48356	43.07	Pk	32.3	-19	0	56.37	-	-	74	-17.63	92	138	H
3	* 2.48351	29.79	RMS	32.3	-19	2.08	45.17	54	-8.83	-	-	92	138	H
4	2.51176	30.17	RMS	32.4	-19	2.08	45.65	54	-8.35	-	-	92	138	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 RMS - RMS detection

VERTICAL RESULT

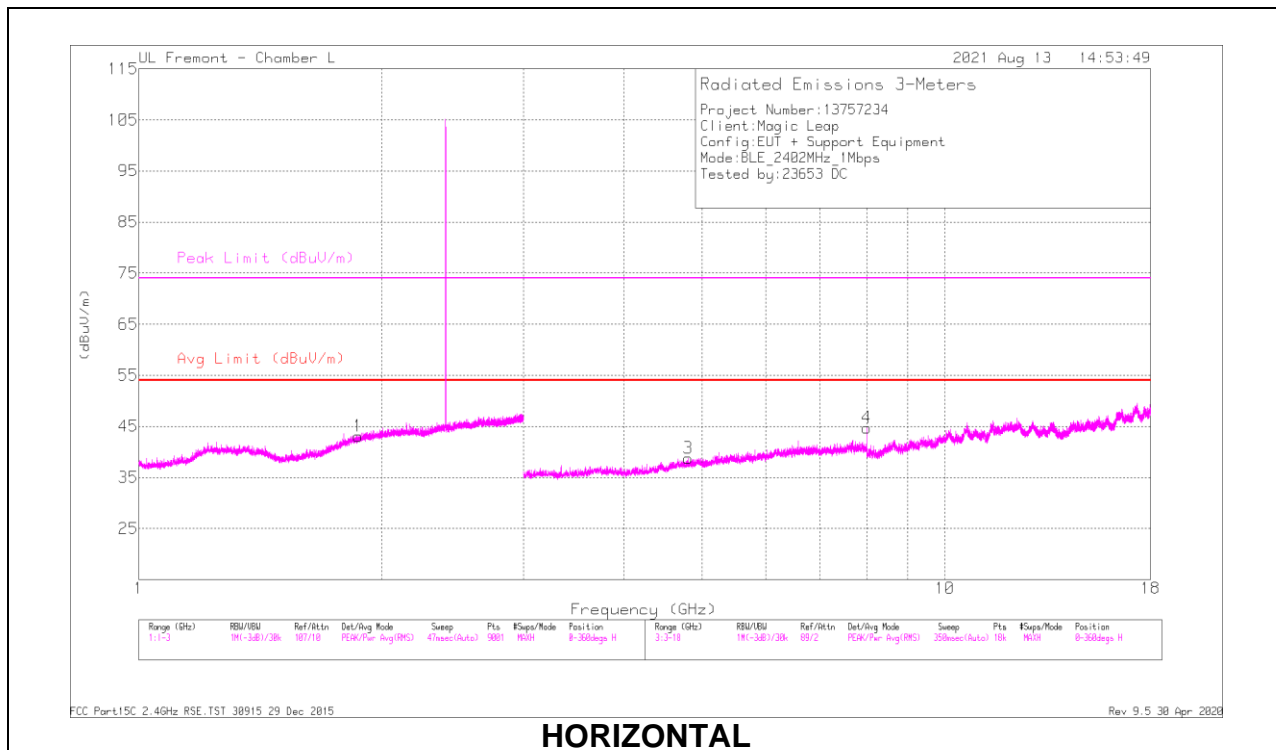


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF 1119 (dBm)	Amp/Cal/Fit/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48351	40.31	PK	32.3	-19	0	54.21	-	-	74	-19.79	258	157	V
2	2.53318	42.57	PK	32.4	-19	0	55.57	-	-	74	-18.03	258	157	V
3	* 2.48351	29.47	RMS	32.3	-19	2.08	44.85	54	-9.15	-	-	258	157	V
4	* 2.49218	30.31	RMS	32.4	-19.1	2.08	45.69	54	-8.31	-	-	258	157	V

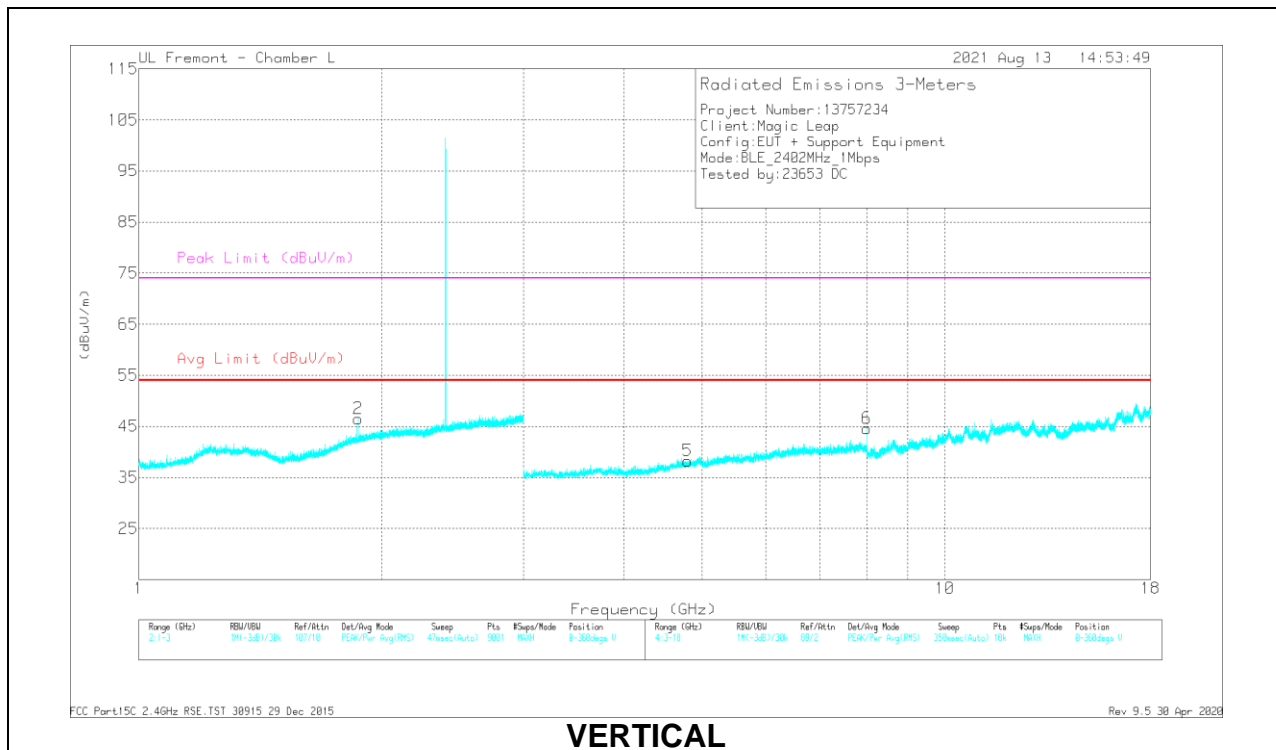
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

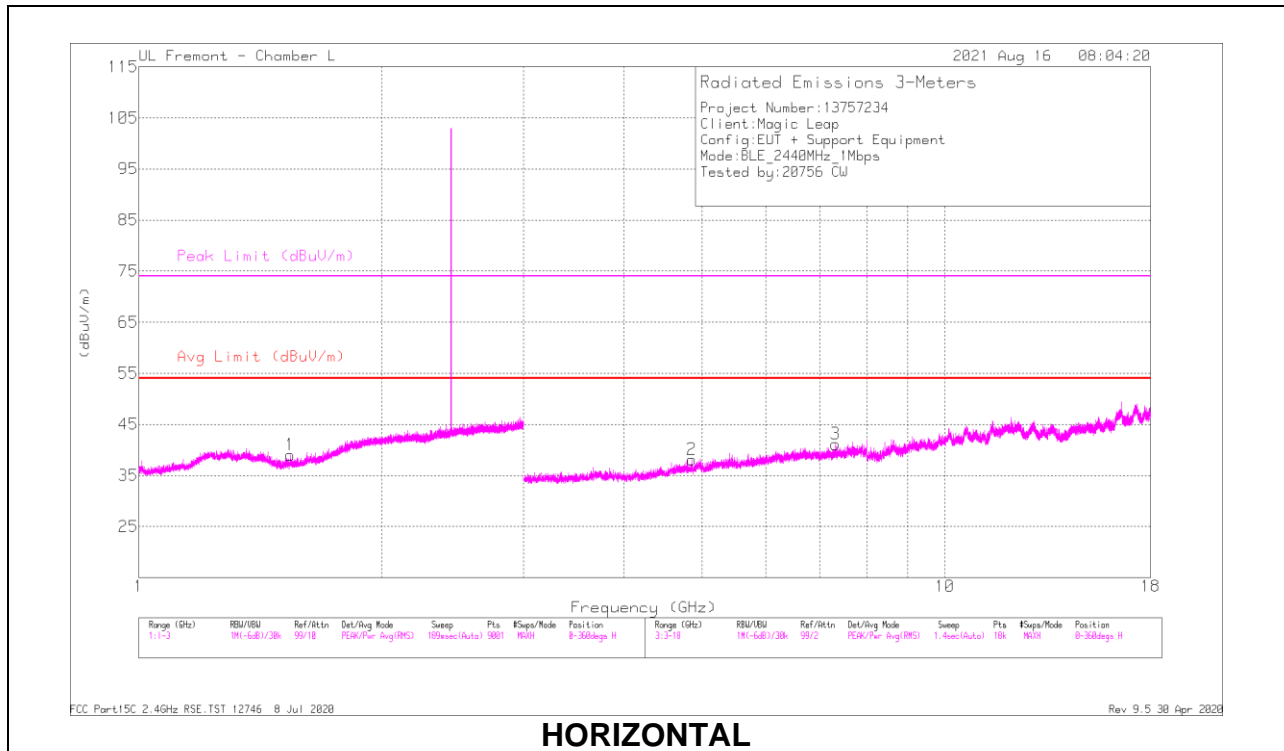
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filtr/ Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.87414	40.65	PK2	31.1	-20.9	0	50.85	-	-	-	-	270	178	H
	1.87044	30.47	MAv1	31	-20.9	2.08	42.65	-	-	-	-	270	178	H
2	1.87109	40.53	PK2	31	-20.9	0	50.63	-	-	-	-	234	272	V
	1.86955	30.3	MAv1	31	-20.9	2.08	42.48	-	-	-	-	234	272	V
3	* 4.80201	38.57	PK2	34.1	-24.5	0	48.17	-	-	74	-25.83	199	173	H
	* 4.80188	26.7	MAv1	34.1	-24.5	2.08	38.38	54	-15.62	-	-	199	173	H
4	8.00009	35.4	PK2	35.8	-19.2	0	52	-	-	-	-	324	134	H
	8.00005	27.9	MAv1	35.8	-19.2	2.08	46.58	-	-	-	-	324	134	H
5	* 4.80044	36.25	PK2	34.1	-24.5	0	45.85	-	-	74	-28.15	256	216	V
	* 4.80146	25.4	MAv1	34.1	-24.5	2.08	37.08	54	-16.92	-	-	256	216	V
6	8.00003	34.37	PK2	35.8	-19.2	0	50.97	-	-	-	-	319	112	V
	8.00008	25.62	MAv1	35.8	-19.2	2.08	44.3	-	-	-	-	319	112	V

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

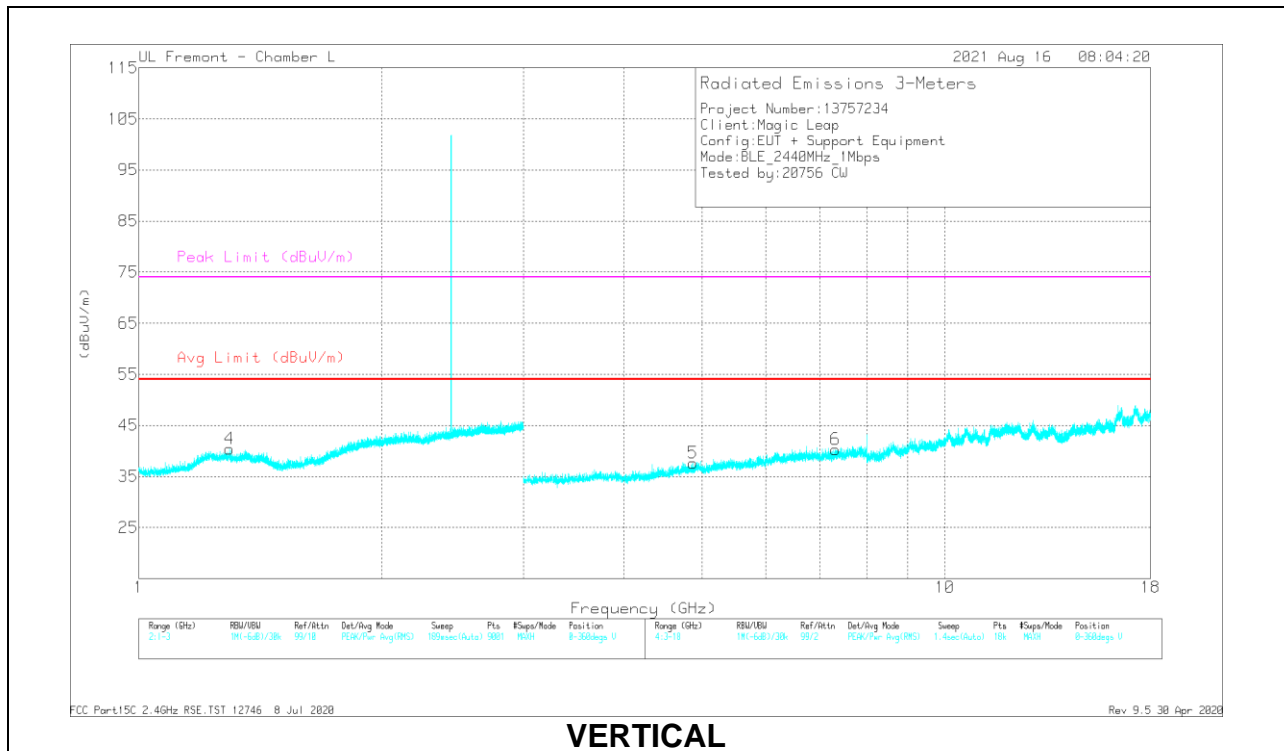
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

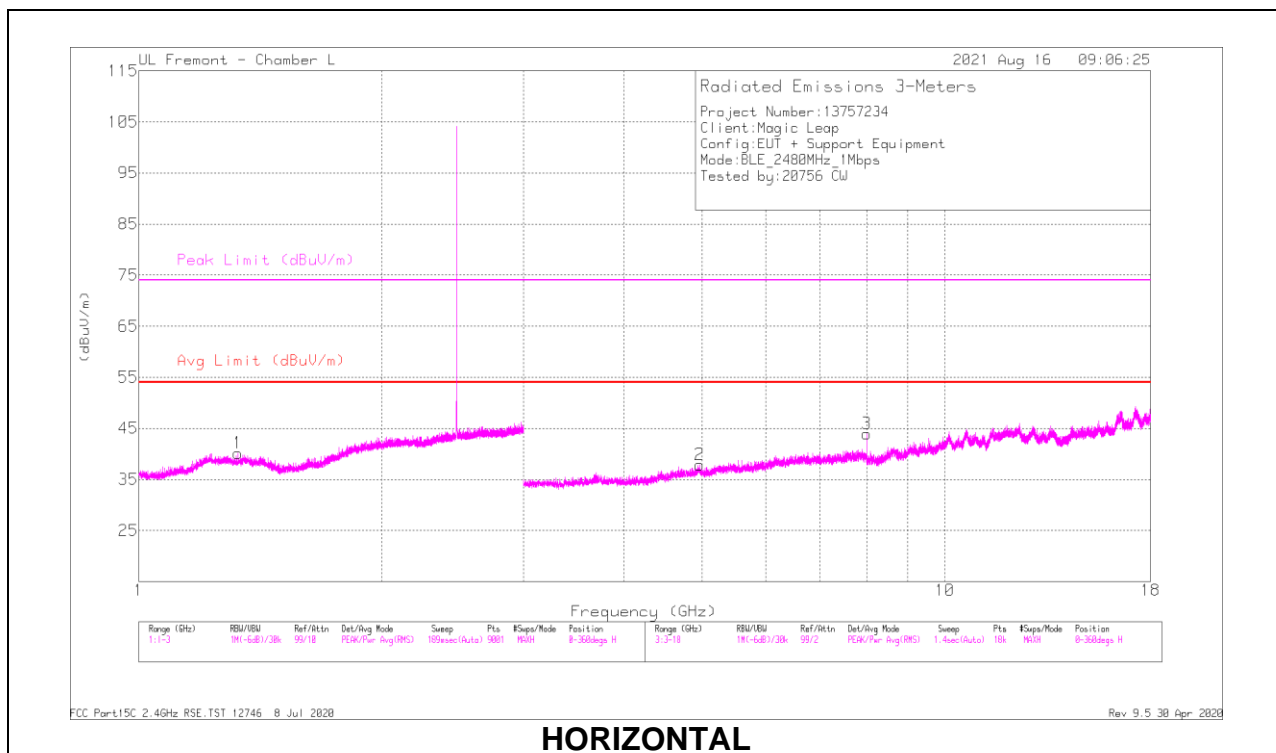
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filtr/ Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.54096	39.87	PK2	27.9	-22	0	45.77	-	-	74	-28.23	309	398	H
	* 1.54326	28.7	MAv1	27.9	-22	2.08	36.68	54	-17.32	-	-	309	398	H
4	* 1.29396	41.12	PK2	29.8	-22.8	0	48.12	-	-	74	-25.88	13	382	V
	* 1.29426	29.21	MAv1	29.8	-22.8	2.08	38.29	54	-15.71	-	-	13	382	V
2	* 4.85252	35.43	PK2	34.2	-24.7	0	44.93	-	-	74	-29.07	282	125	H
	* 4.84936	24.67	MAv1	34.2	-24.7	2.08	36.25	54	-17.75	-	-	282	125	H
3	* 7.31583	32.29	PK2	35.7	-20.1	0	47.89	-	-	74	-26.11	310	103	H
	* 7.31607	20.86	MAv1	35.7	-20.1	2.08	38.54	54	-15.46	-	-	310	103	H
5	* 4.86725	34.66	PK2	34.2	-24.6	0	44.26	-	-	74	-29.74	226	398	V
	* 4.86633	23.74	MAv1	34.2	-24.7	2.08	35.32	54	-18.68	-	-	226	398	V
6	* 7.31317	32	PK2	35.7	-20	0	47.7	-	-	74	-26.3	214	214	V
	* 7.31529	20.27	MAv1	35.7	-20.1	2.08	37.95	54	-16.05	-	-	214	214	V

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

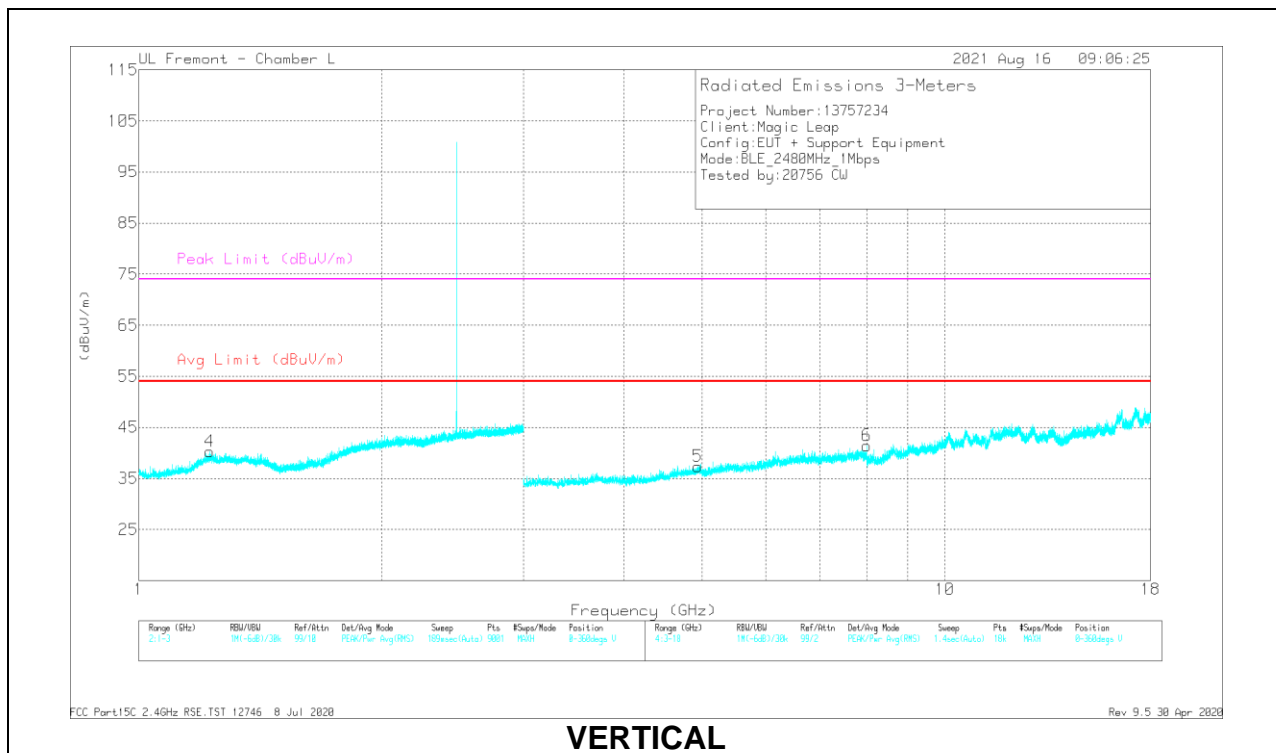
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filtr/ Pad (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	* 1.32839	40.08	PK2	29.5	-22.7	0	46.88	-	-	74	-27.12	234	101	H
	* 1.32918	29.08	MAv1	29.5	-22.7	2.08	37.96	54	-16.04	-	-	234	101	H
4	* 1.22578	40.29	PK2	30.2	-23.1	0	47.39	-	-	74	-26.61	342	259	V
	* 1.22414	28.64	MAv1	30.2	-23.1	2.08	37.82	54	-16.18	-	-	342	259	V
2	* 4.96084	34.74	PK2	34.2	-23.2	0	45.74	-	-	74	-28.26	80	183	H
	* 4.96	23.23	MAv1	34.2	-23.2	2.08	36.31	54	-17.69	-	-	80	183	H
3	8.00014	32.12	PK2	35.8	-19.2	0	48.72	-	-	-	-	55	102	H
	8.0001	22.58	MAv1	35.8	-19.2	2.08	41.26	-	-	-	-	55	102	H
5	* 4.93761	34.11	PK2	34.2	-23.2	0	45.11	-	-	74	-28.89	230	153	V
	* 4.93969	22.13	MAv1	34.2	-23.2	2.08	35.21	54	-18.79	-	-	230	153	V
6	8.00005	31.66	PK2	35.8	-19.2	0	48.26	-	-	-	-	351	155	V
	8.00012	21.77	MAv1	35.8	-19.2	2.08	40.45	-	-	-	-	351	155	V

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

PK2 - KDB558074 Method: Maximum Peak

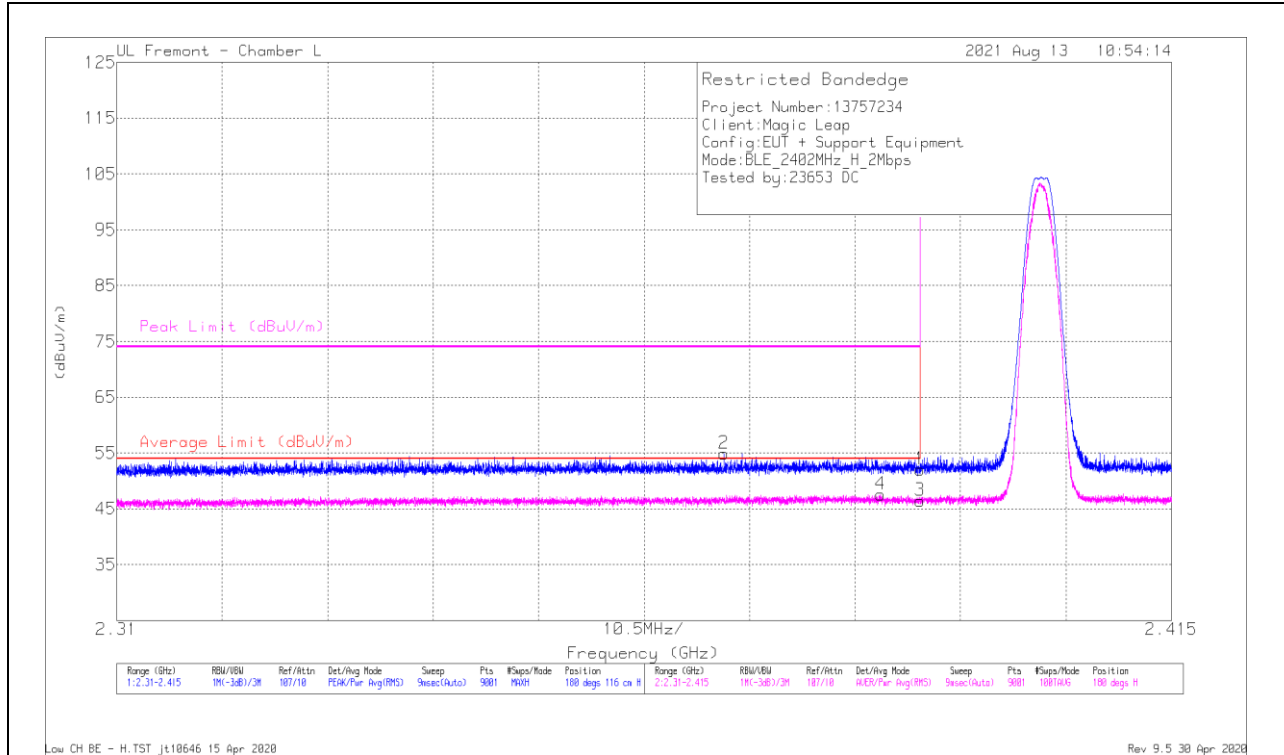
MAv1 - KDB558074 Option 1 Maximum RMS Average

10.2.2. BLE (2Mbps)

Antenna 1

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



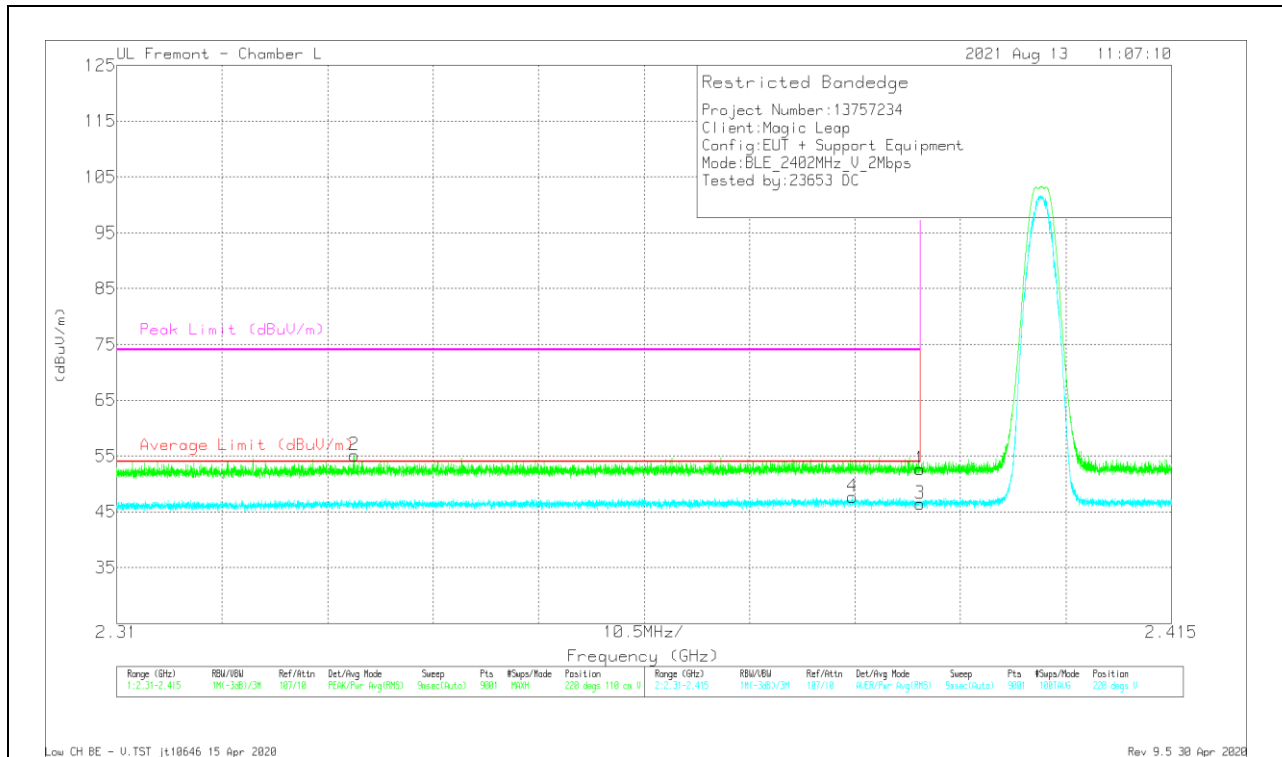
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/CM/Fit/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38999	39.34	Pk	32	-19.3	0	52.04	-	-	74	-21.96	180	116	H
2	* 2.37044	42.32	Pk	32	-19.4	0	54.92	-	-	74	-19.08	180	116	H
3	* 2.38999	28.92	RMS	32	-19.3	4.86	46.48	54	-7.52	-	-	180	116	H
4	* 2.38606	29.95	RMS	32.1	-19.4	4.86	47.51	54	-6.49	-	-	180	116	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	AF 1119 (dBm)	Amp/Cal/Fit/Pad (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	* 2.38999	39.36	PK	32	-19.3	0	52.66	-	-	74	-21.34	220	110	V
2	* 2.33361	42.7	PK	31.9	-19.5	0	55.1	-	-	74	-18.3	220	110	V
3	* 2.38999	28.92	RMS	32	-19.3	4.86	46.48	54	-7.52	-	-	220	110	V
4	* 2.38326	30.15	RMS	32.1	-19.4	4.86	47.71	54	-6.29	-	-	220	110	V

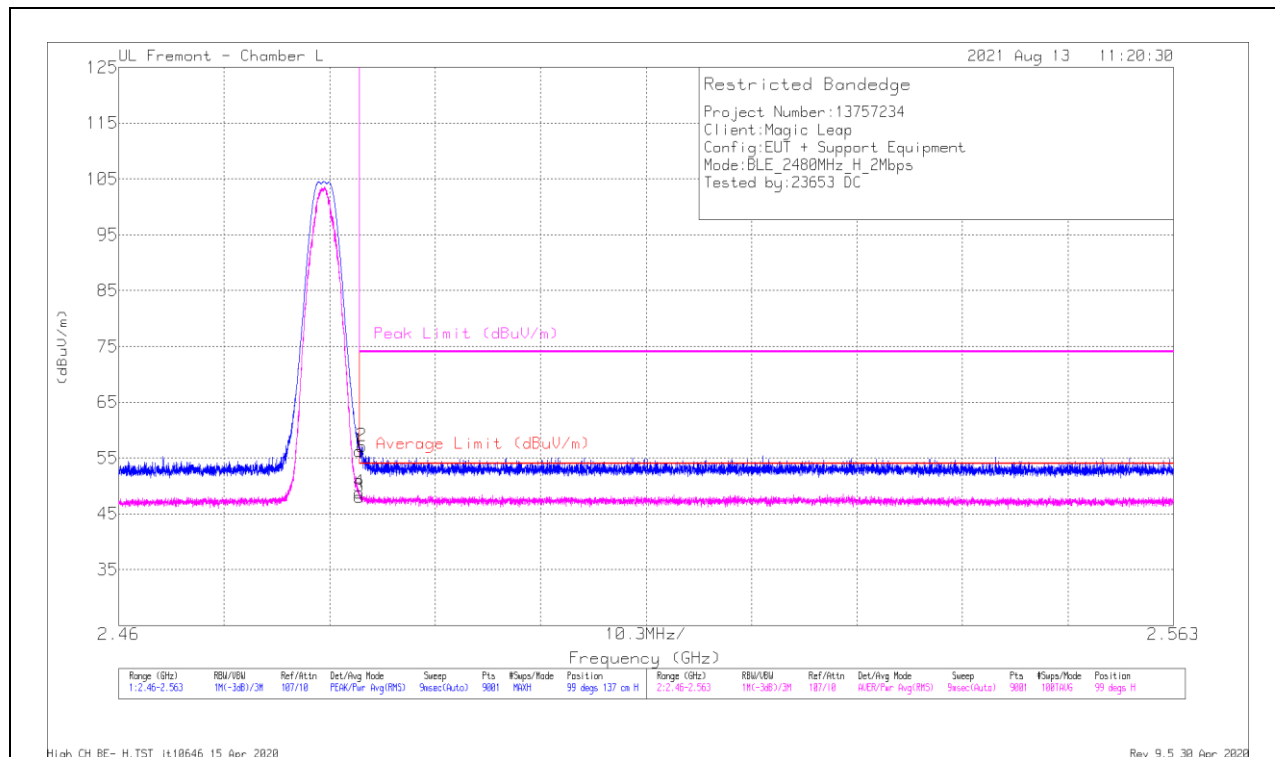
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL)

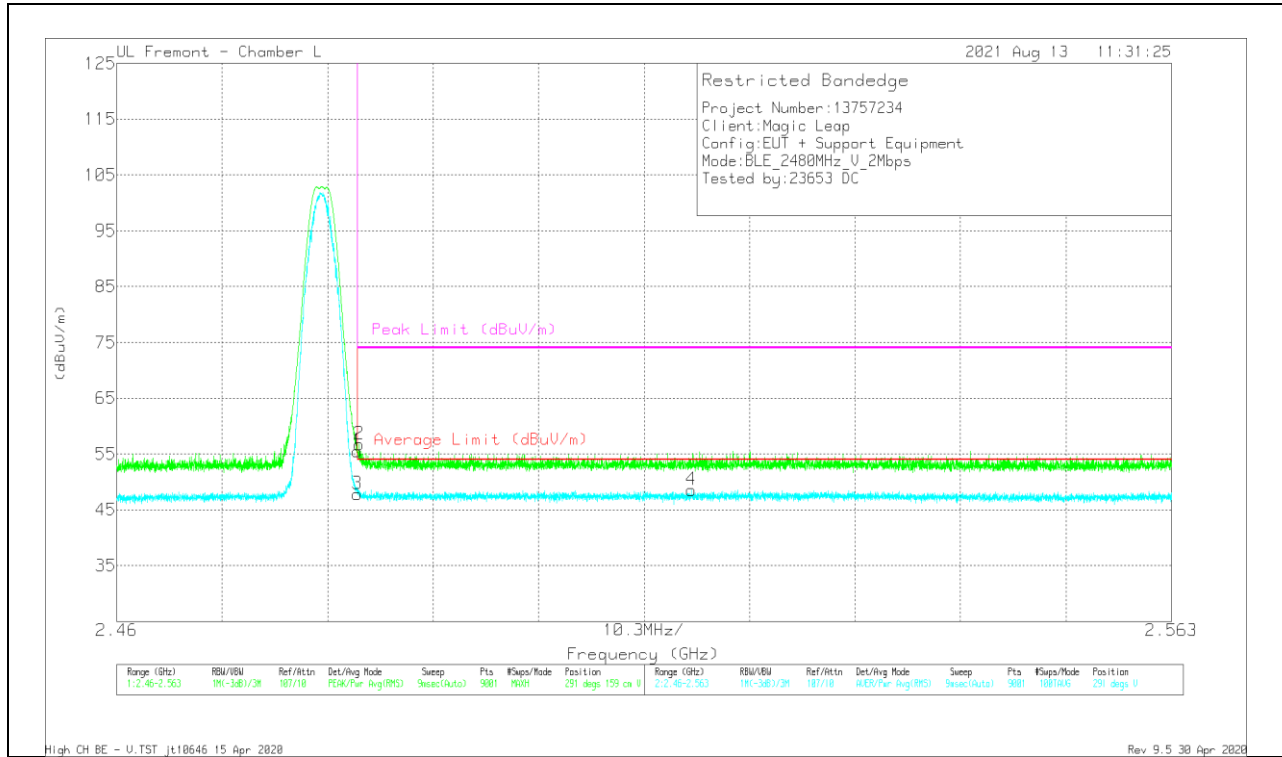
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dBm)	Amp/Cbl/Ftr/Pad (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	* 2.48351	42.98	Pk	32.3	-19	0	56.28	-	-	74	-17.72	99	137	H
2	* 2.48371	43.86	Pk	32.3	-19	0	57.16	-	-	74	-16.84	99	137	H
3	* 2.48351	29.88	RMS	32.3	-19	4.86	48.04	54	-5.96	-	-	99	137	H
4	* 2.48352	30.6	RMS	32.3	-19	4.86	48.76	54	-5.24	-	-	99	137	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	AF T119 (dBm)	Amp/Cal/Fit/Pad (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	* 2.48351	42.23	PK	32.3	-19	0	55.53	-	-	74	-18.47	291	159	V
2	* 2.48365	43.5	PK	32.3	-19	0	56.8	-	-	74	-17.2	291	159	V
3	* 2.48351	29.67	RMS	32.3	-19	4.86	47.83	54	-6.17	-	-	291	159	V
4	2.5161	30.41	RMS	32.4	-19.1	4.86	48.57	54	-5.43	-	-	291	159	V

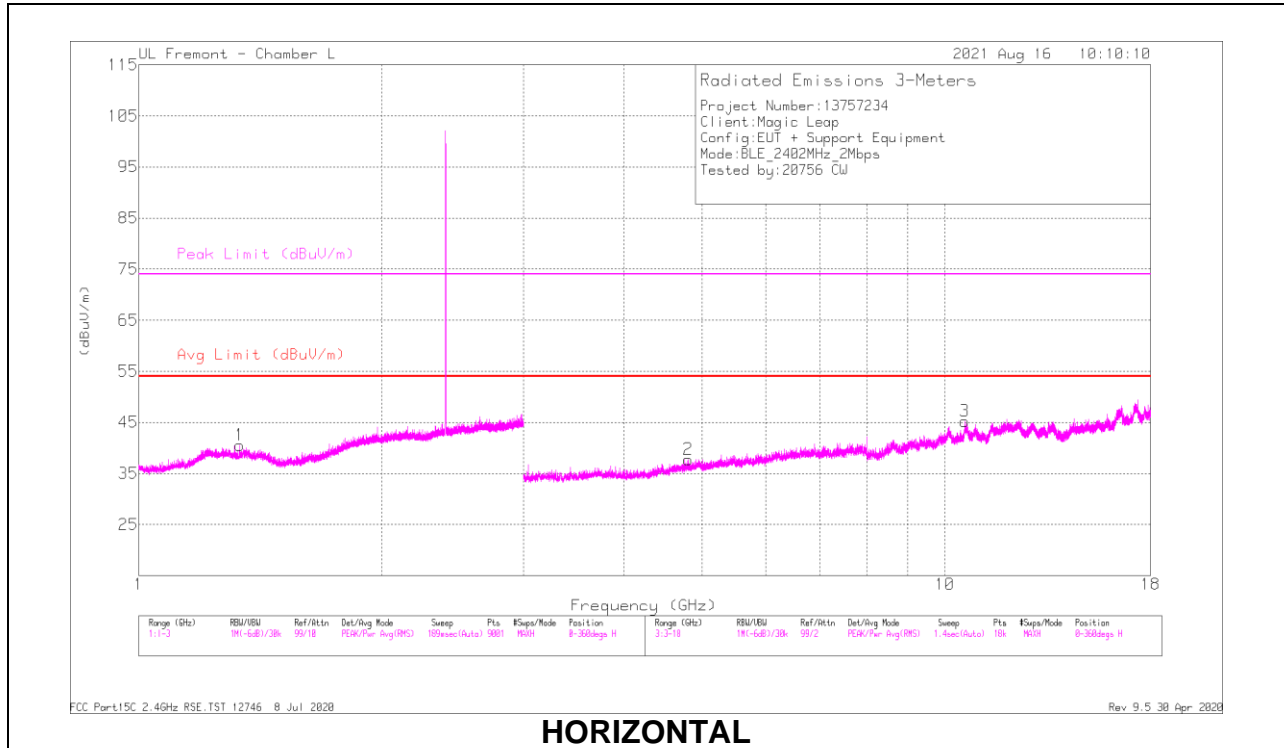
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

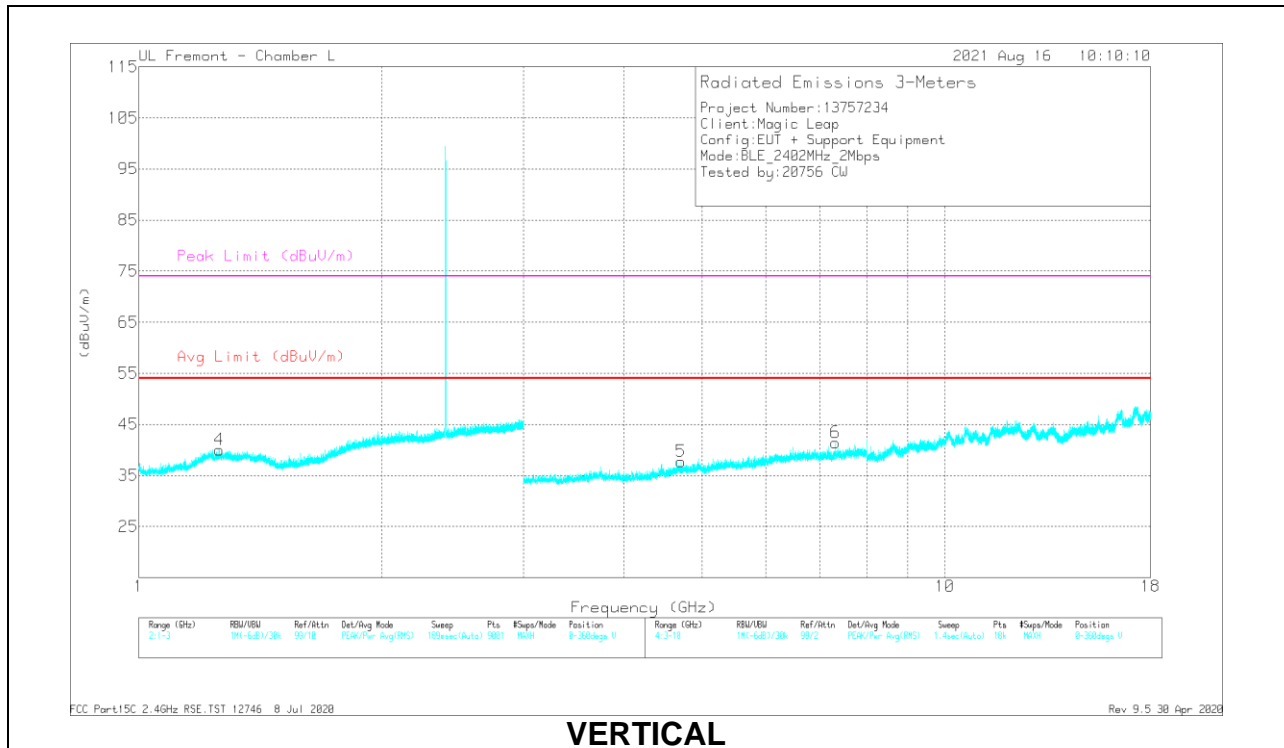
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

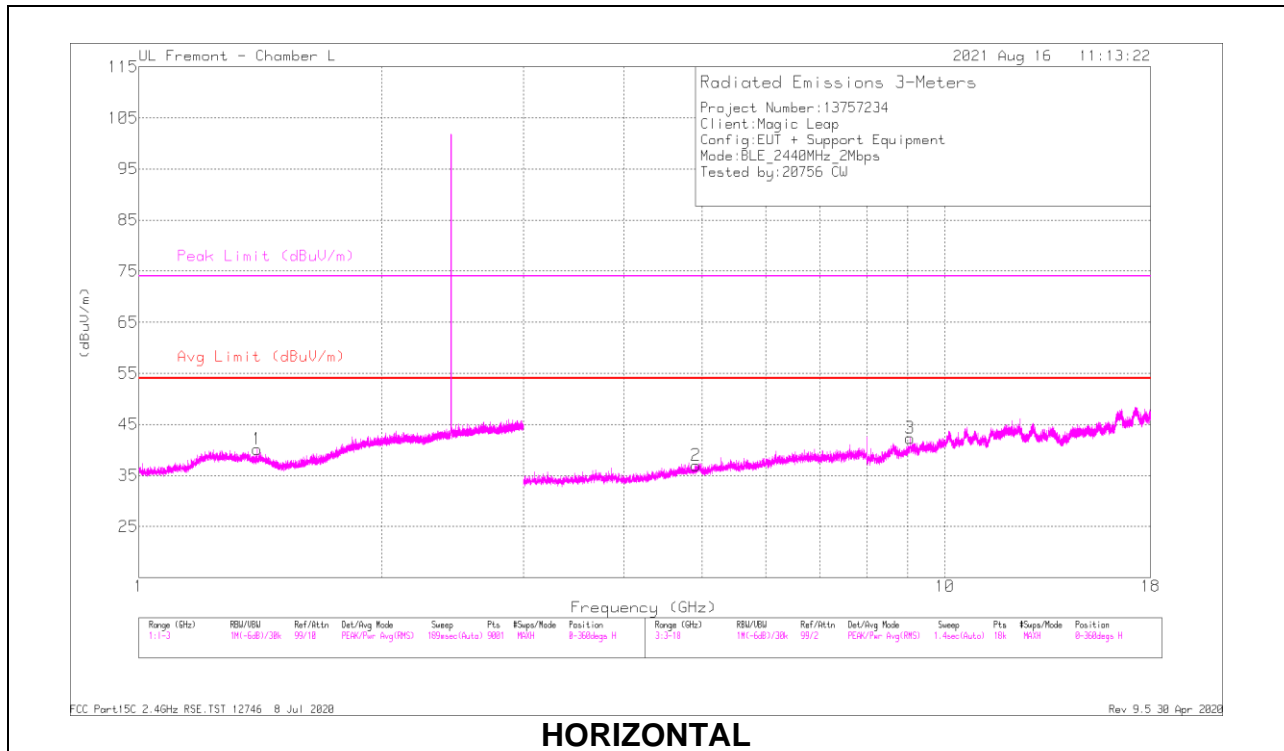
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filtr/ Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.33255	40.51	PK2	29.6	-22.7	0	47.41	-	-	74	-26.59	21	318	H
	* 1.33136	29.1	MAv1	29.6	-22.7	4.86	40.86	54	-13.14	-	-	21	318	H
4	* 1.25908	40.05	PK2	29.9	-23	0	46.95	-	-	74	-27.05	188	195	V
	* 1.25642	29.07	MAv1	29.8	-23	4.86	40.73	54	-13.27	-	-	188	195	V
2	* 4.80874	34.47	PK2	34.1	-24.6	0	43.97	-	-	74	-30.03	68	328	H
	* 4.80792	23.68	MAv1	34.1	-24.5	4.86	38.14	54	-15.86	-	-	68	328	H
3	10.5887	27.87	PK2	37.8	-14.9	0	50.77	-	-	-	-	40	157	H
	10.5899	17.02	MAv1	37.8	-14.8	4.86	44.88	-	-	-	-	40	157	H
5	* 4.70761	34.31	PK2	34	-24.4	0	43.91	-	-	74	-30.09	217	159	V
	* 4.70639	23.32	MAv1	34	-24.4	4.86	37.78	54	-16.22	-	-	217	159	V
6	* 7.31863	31.94	PK2	35.7	-20.1	0	47.54	-	-	74	-26.46	285	148	V
	* 7.31928	20.28	MAv1	35.6	-20.1	4.86	40.64	54	-13.36	-	-	285	148	V

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

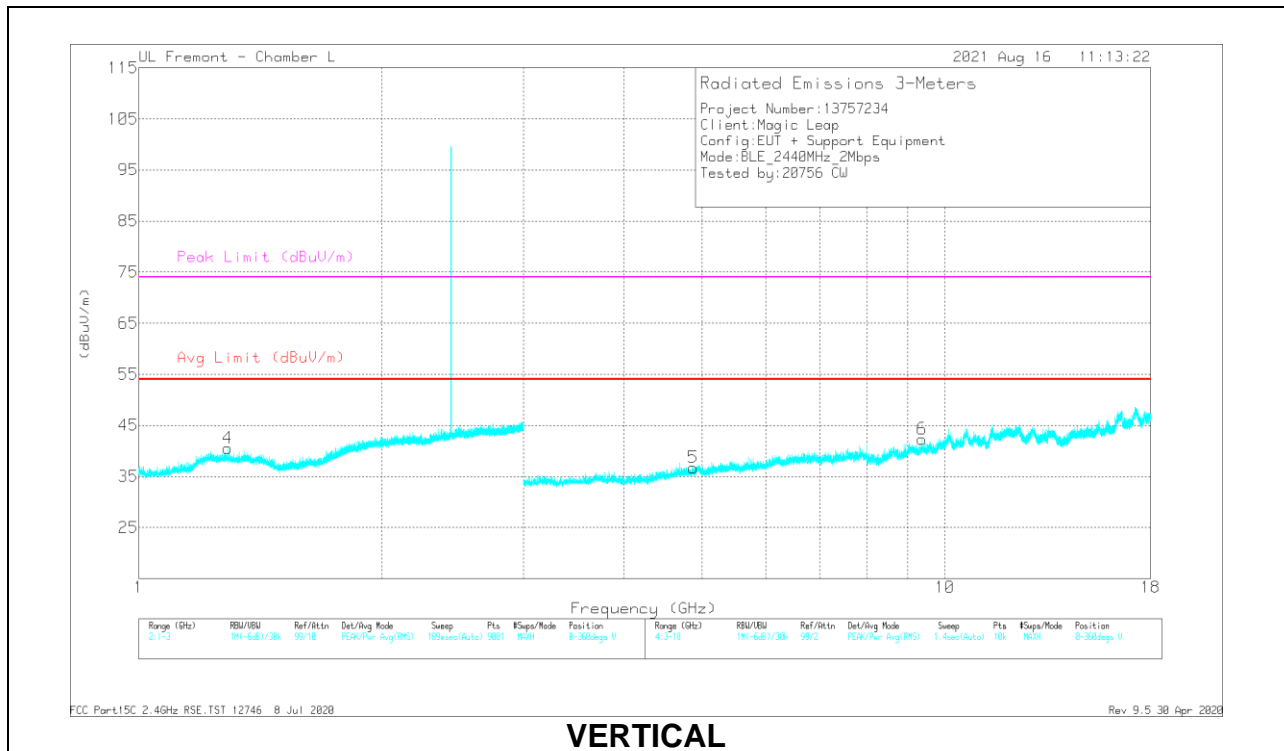
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

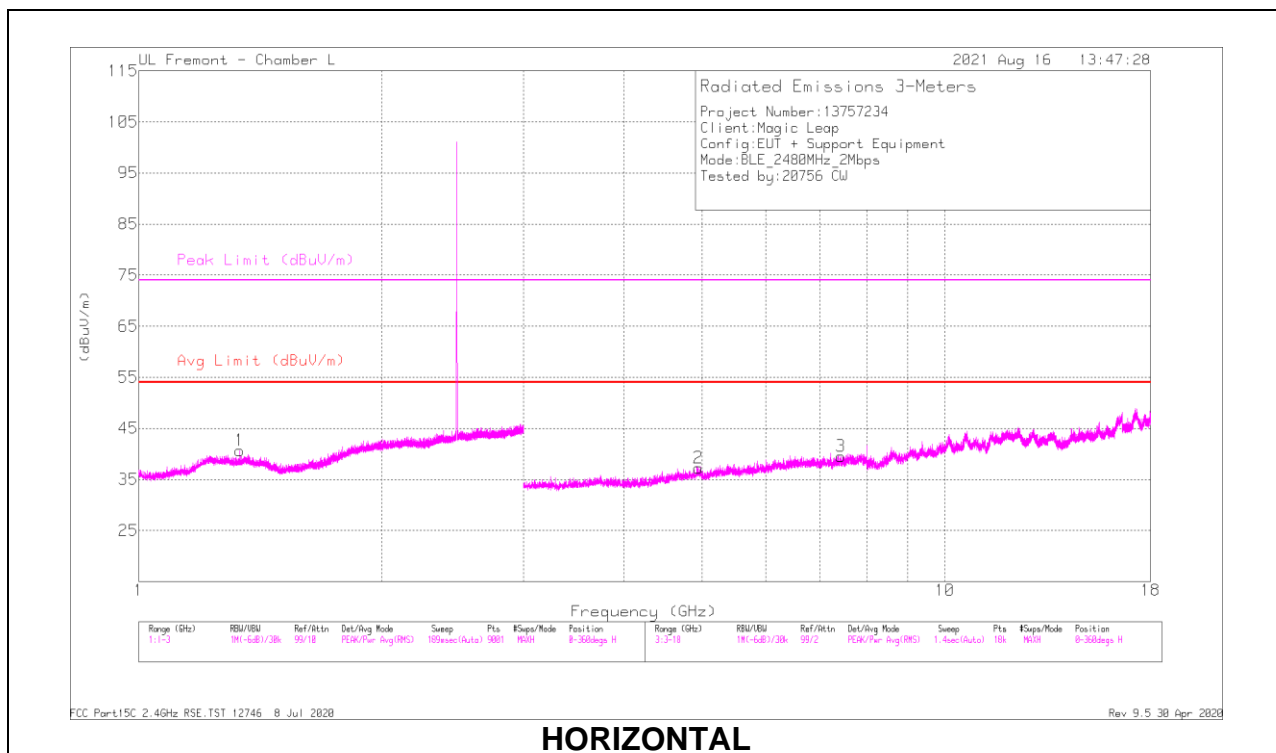
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filtr/ Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.40116	39.91	PK2	29.2	-22.5	0	46.61	-	-	74	-27.39	64	123	H
	* 1.40036	28.72	MAv1	29.2	-22.5	4.86	40.28	54	-13.72	-	-	64	123	H
4	* 1.2887	39.59	PK2	29.8	-22.8	0	46.59	-	-	74	-27.41	162	159	V
	* 1.28925	29.66	MAv1	29.8	-22.8	4.86	41.52	54	-12.48	-	-	162	159	V
2	* 4.91359	34.3	PK2	34.1	-23.9	0	44.5	-	-	74	-29.5	268	314	H
	* 4.91527	23.23	MAv1	34.1	-23.8	4.86	38.39	54	-15.61	-	-	268	314	H
3	* 9.04937	29.48	PK2	36.2	-17.1	0	48.58	-	-	74	-25.42	252	175	H
	* 9.05121	18.02	MAv1	36.1	-17	4.86	41.98	54	-12.02	-	-	252	175	H
5	* 4.87363	35.29	PK2	34.2	-24.5	0	44.99	-	-	74	-29.01	73	127	V
	* 4.87701	23.19	MAv1	34.2	-24.4	4.86	37.85	54	-16.15	-	-	73	127	V
6	* 9.37573	29.14	PK2	36.5	-16.8	0	48.84	-	-	74	-25.16	27	279	V
	* 9.37664	16.62	MAv1	36.5	-16.8	4.86	41.18	54	-12.82	-	-	27	279	V

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

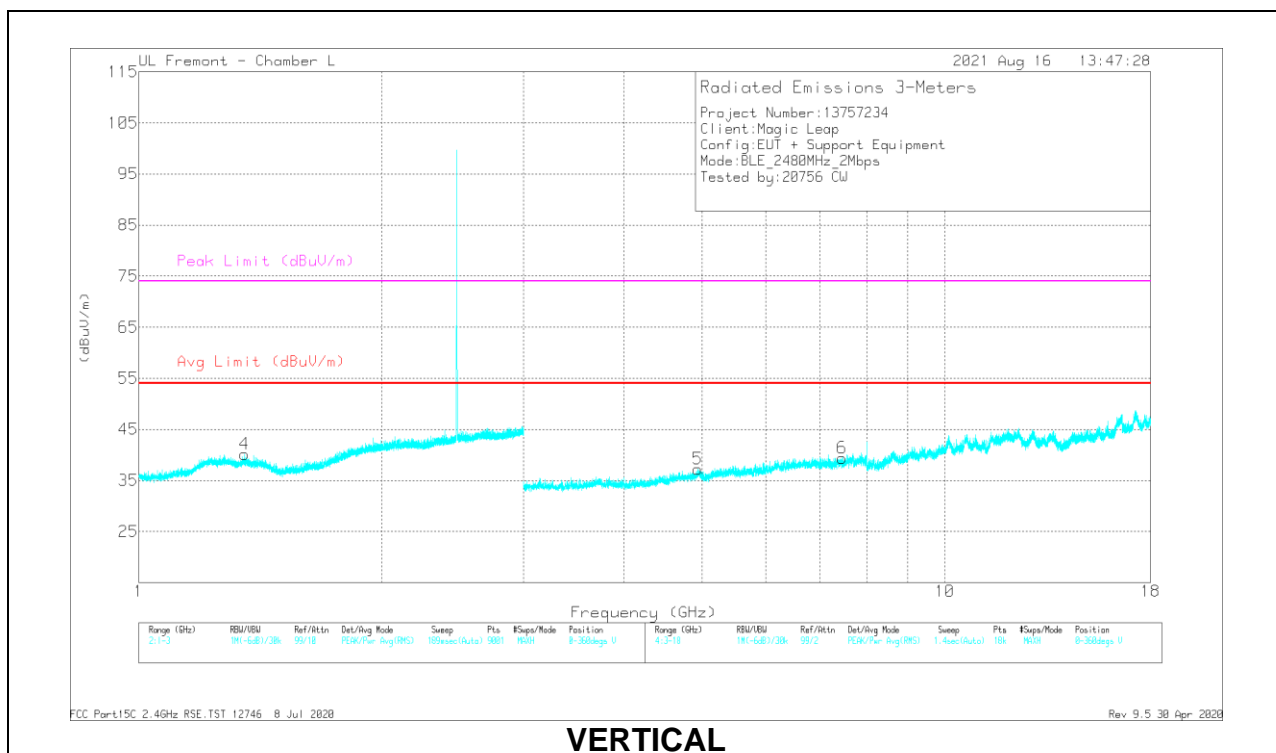
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filtr/ Pad (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	* 1.33147	39.5	PK2	29.6	-22.7	0	-46.4	-	-	74	-27.6	288	224	H
	* 1.33484	28.51	MAv1	29.6	-22.7	4.86	40.27	54	-13.73	-	-	288	224	H
4	* 1.3521	40.52	PK2	29.8	-22.6	0	47.72	-	-	74	-26.28	268	108	V
	* 1.35046	29.04	MAv1	29.8	-22.6	4.86	41.1	54	-12.9	-	-	268	108	V
2	* 4.9427	33.42	PK2	34.2	-23.1	0	44.52	-	-	74	-29.48	80	155	H
	* 4.94234	22.15	MAv1	34.2	-23.1	4.86	38.11	54	-15.89	-	-	80	155	H
3	* 7.42928	31.54	PK2	35.7	-19.8	0	47.44	-	-	74	-26.56	101	126	H
	* 7.42898	20.55	MAv1	35.7	-19.7	4.86	41.41	54	-12.59	-	-	101	126	H
5	* 4.93974	33.77	PK2	34.2	-23.2	0	44.77	-	-	74	-29.23	351	123	V
	* 4.93759	22.58	MAv1	34.2	-23.2	4.86	38.44	54	-15.56	-	-	351	123	V
6	* 7.45254	31.03	PK2	35.7	-19.9	0	46.83	-	-	74	-27.17	360	143	V
	* 7.45298	19.04	MAv1	35.7	-19.9	4.86	39.7	54	-14.3	-	-	360	143	V

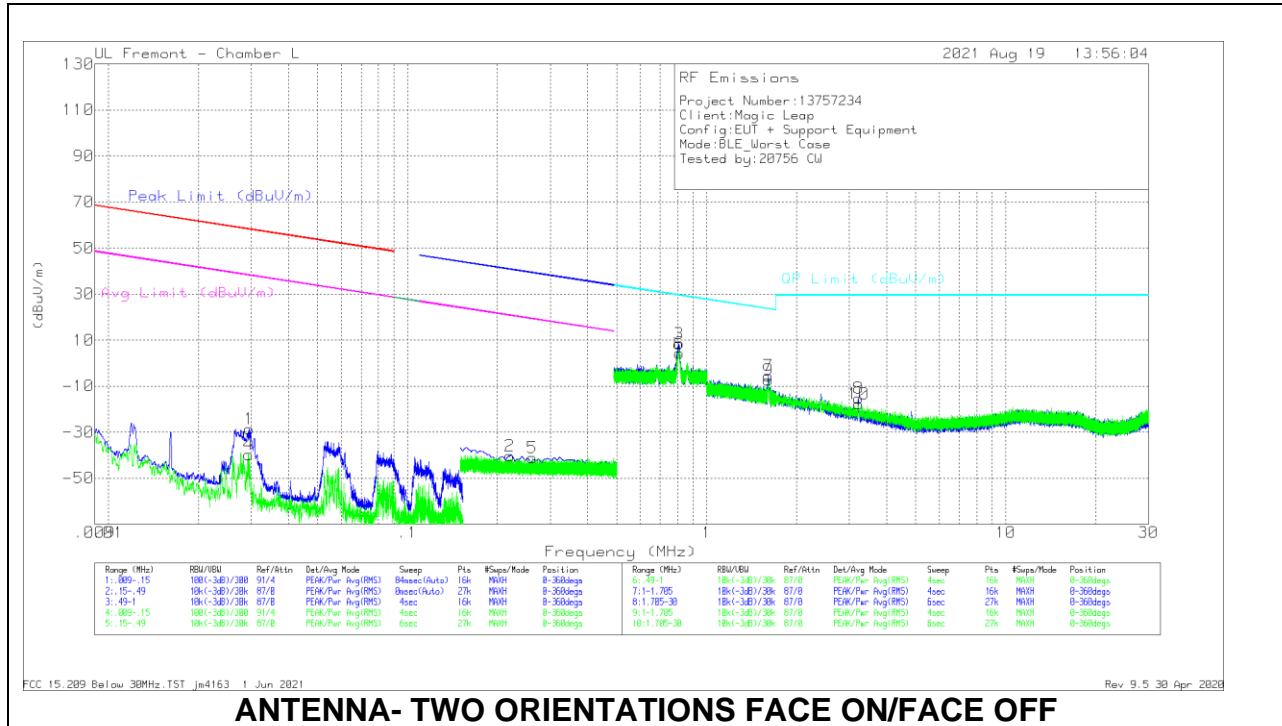
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

10.3. WORST CASE BELOW 30MHZ

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION)



ANTENNA- TWO ORIENTATIONS FACE ON/FACE OFF

Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (E ACF)	Amp/Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	.02955	24.99	Pk	57.9	-31.5	-80	-28.61	58.17	-86.78	38.17	-66.78	0-360
2	.22006	15.48	Pk	56.2	-32	-80	-40.32	40.77	-81.09	20.77	-61.09	0-360
4	.02948	13.74	Pk	58	-31.5	-80	-39.76	58.2	-97.96	38.2	-77.96	0-360
5	.26194	14.8	Pk	56.2	-32	-80	-41	39.25	-80.25	19.25	-60.25	0-360

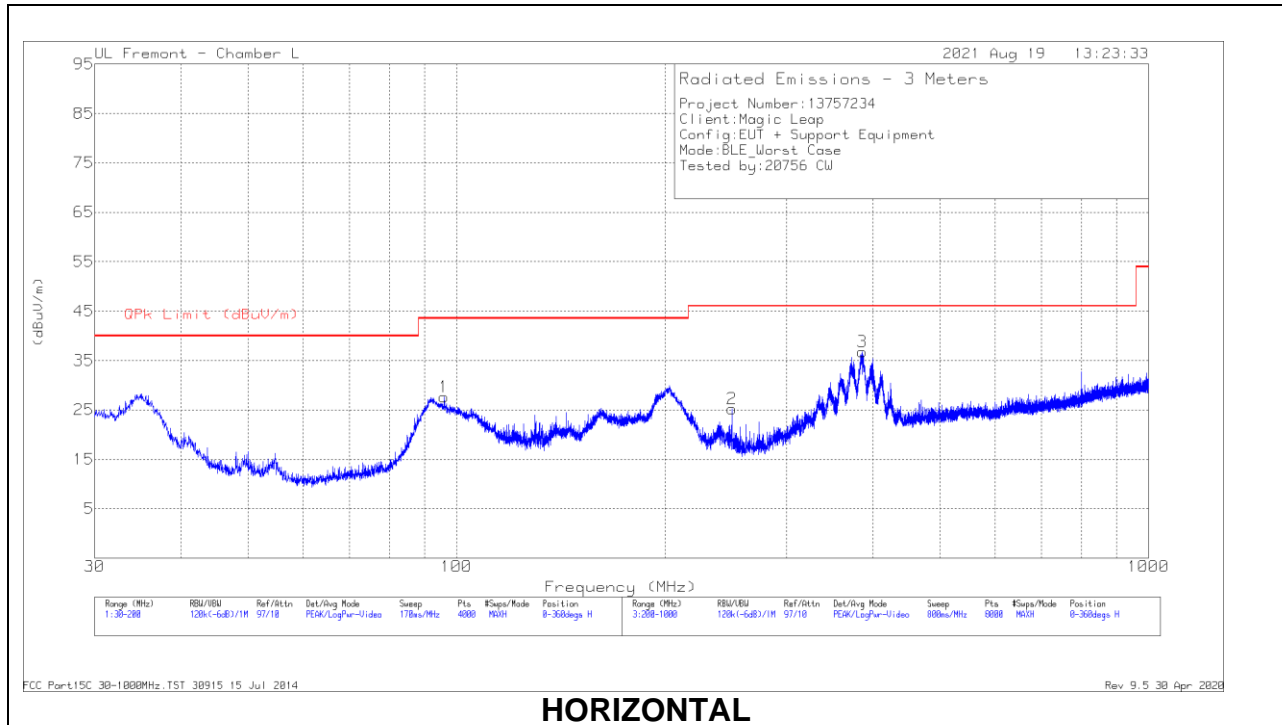
Pk - Peak detector

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (E ACF)	Amp/Cbl (dB)	Dist Corr 300m (dB)	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
3	.80747	24.1	Pk	56.2	-31.9	-40	8.4	29.47	-21.07	0-360
6	.81109	19.98	Pk	56.2	-31.9	-40	4.28	29.43	-25.15	0-360
7	1.60936	22.93	Pk	43.5	-31.9	-40	-5.47	23.5	-28.97	0-360
8	3.21622	18.3	Pk	38.3	-31.8	-40	-15.2	29.5	-44.7	0-360
9	1.60883	21.1	Pk	43.5	-31.9	-40	-7.3	23.5	-30.8	0-360
10	3.2246	15.88	Pk	38.3	-31.8	-40	-17.62	29.5	-47.12	0-360

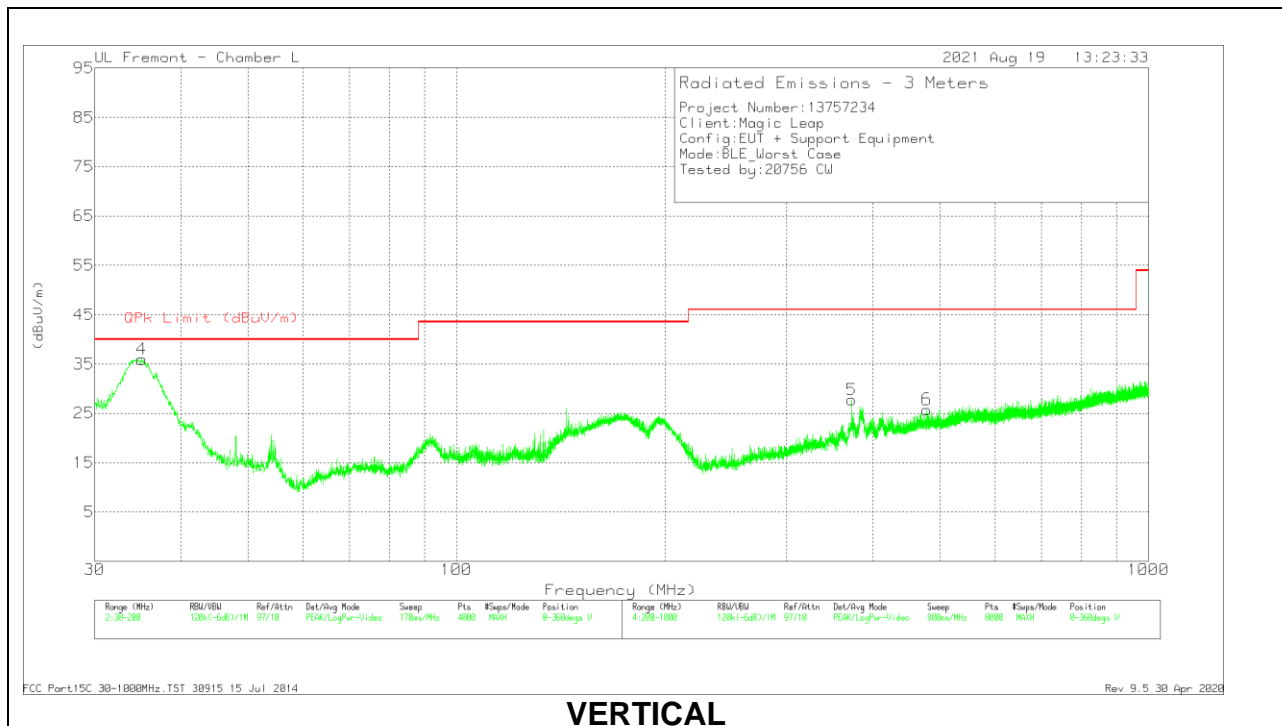
Pk - Peak detector

10.4. WORST CASE BELOW 1 GHZ

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



HORIZONTAL



VERTICAL

Below 1GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF 174373 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	96.0196	43.48	Pk	15	-30.8	27.68	43.52	-15.84	0-360	299	H
4	34.8946	41.86	Qp	23.2	-31.3	33.76	40	-6.24	333	104	V
2	* 250.0065	37.77	Pk	17.3	-29.8	25.27	46.02	-20.75	0-360	100	H
3	386.0242	45.05	Pk	20.8	-29.1	36.75	46.02	-9.27	0-360	100	H
5	372.5224	36.21	Pk	20.7	-29.1	27.81	46.02	-18.21	0-360	299	V
6	477.8361	31.29	Pk	23.4	-28.9	25.79	46.02	-20.23	0-360	100	V

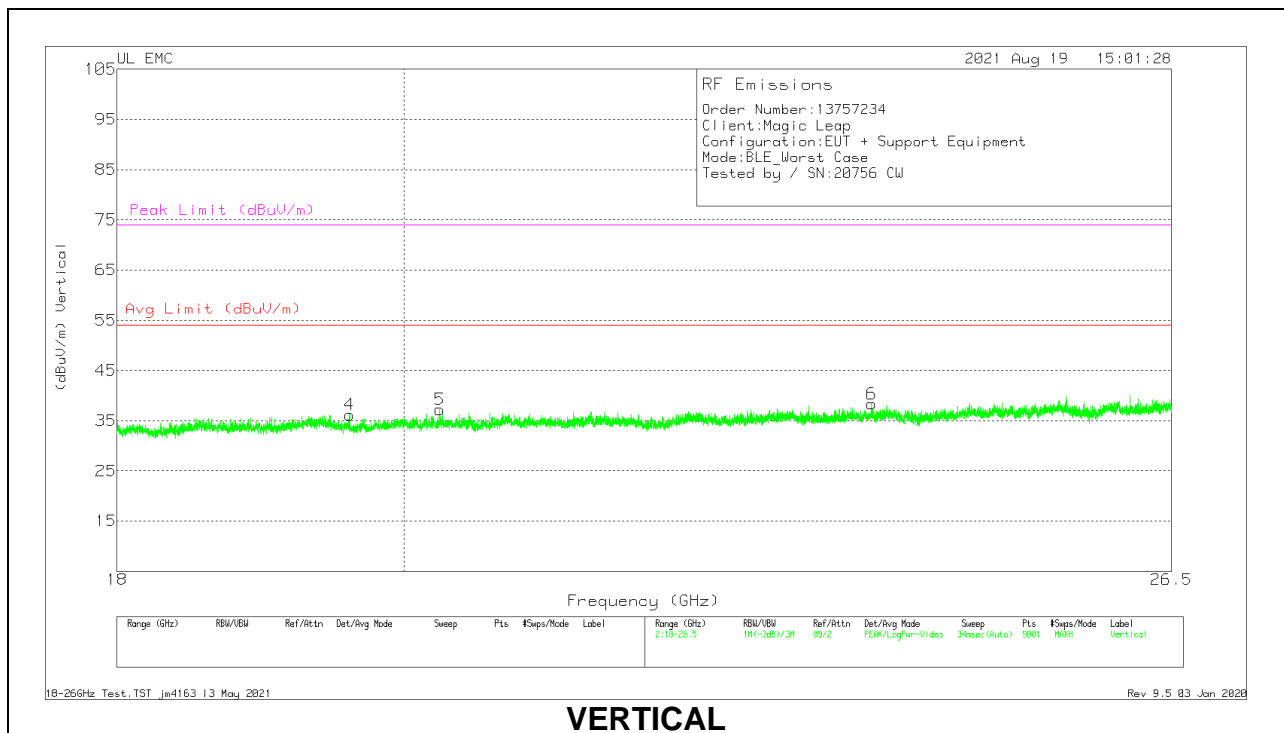
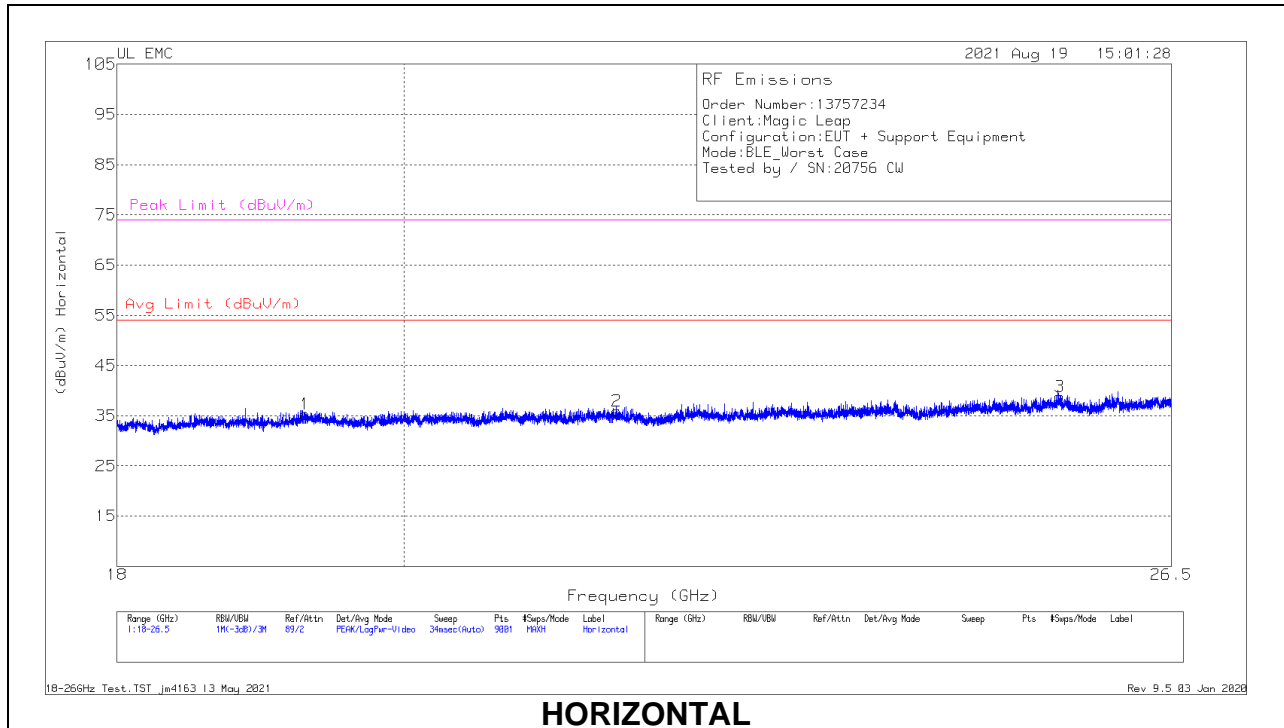
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

Qp - Quasi-Peak detector

10.5. WORST CASE 18-26 GHZ

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



18 – 26GHz DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T447 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	19.28633	68.78	Pk	33.1	-57.1	-9.5	35.28	54	-18.72	74	-38.72
2	21.62289	68.94	Pk	33.8	-57.3	-9.5	35.94	54	-18.06	74	-38.06
3	25.43561	68.12	Pk	35.5	-55.3	-9.5	38.82	54	-15.18	74	-35.18
4	19.60367	69.49	Pk	33.2	-57	-9.5	36.19	54	-17.81	74	-37.81
5	20.261	70.22	Pk	33.5	-57	-9.5	37.22	54	-16.78	74	-36.78
6	23.73844	70.05	Pk	34.6	-56.8	-9.5	38.35	54	-15.65	74	-35.65

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.

RESULTS

AC Power Line Norm

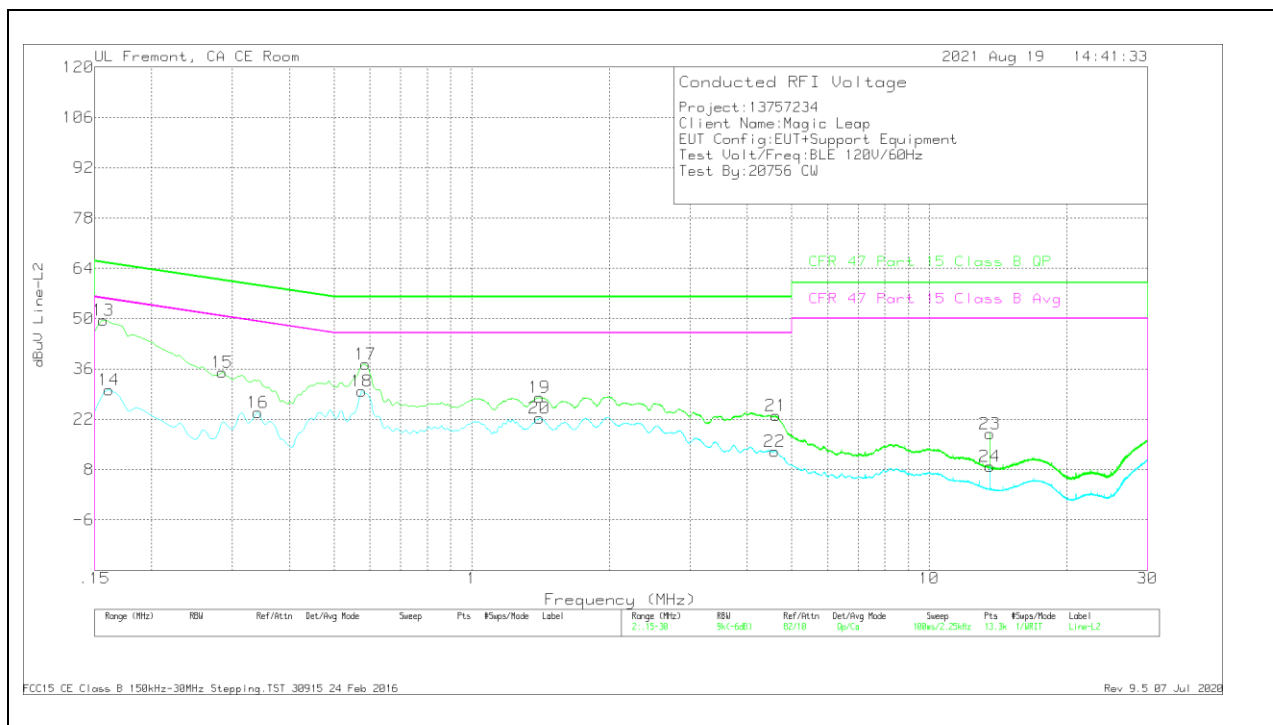
LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE0186446 L1	LC Cables C1&C3 dB	TekBox Limiter TBFL1 Model 207	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR)M argin (dB)
2	.16125	23.06	Ca	0	0	9.4	32.46	-	-	55.4	-22.94
4	.58875	12.92	Ca	0	0	9.3	22.22	-	-	46	-23.78
6	1.203	11.72	Ca	0	.1	9.3	21.12	-	-	46	-24.88
8	2.85	5.96	Ca	0	.1	9.3	15.36	-	-	46	-30.64
10	4.02	7.57	Ca	0	.1	9.3	16.97	-	-	46	-29.03
12	13.56	4.52	Ca	.1	.2	9.3	14.12	-	-	50	-35.88
1	.159	40.7	Qp	.1	0	9.4	50.2	65.52	-15.32	-	-
3	.582	22.21	Qp	0	0	9.3	31.51	56	-24.49	-	-
5	1.23	18	Qp	0	.1	9.3	27.4	56	-28.6	-	-
7	2.90625	12.91	Qp	0	.1	9.3	22.31	56	-33.69	-	-
9	4.07625	14.97	Qp	0	.1	9.3	24.37	56	-31.63	-	-
11	13.56	11.56	Qp	.1	.2	9.3	21.16	60	-38.84	-	-

Qp - Quasi-Peak detector
 Ca - CISPR average detection

LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE0186446 L2	LC Cables C2&C3 dB	TekBox Limiter TBFL1 Model	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR)M argin (dB)
14	.16125	20.75	Ca	0	0	9.4	30.15	-	-	55.4	-25.25
16	.34125	14.53	Ca	0	0	9.3	23.83	-	-	49.17	-25.34
18	.57525	20.5	Ca	0	0	9.3	29.8	-	-	46	-16.2
20	1.40775	12.91	Ca	0	.1	9.3	22.31	-	-	46	-23.69
22	4.59263	3.76	Ca	0	.1	9.3	13.16	-	-	46	-32.84
24	13.56	-76	Ca	.1	.2	9.3	8.84	-	-	50	-41.16
13	.15675	40.23	Qp	0	0	9.4	49.63	65.63	-16	-	-
15	.285	25.8	Qp	0	0	9.3	35.1	60.67	-25.57	-	-
17	.5865	28.01	Qp	0	0	9.3	37.31	56	-18.69	-	-
19	1.40775	18.72	Qp	0	.1	9.3	28.12	56	-27.88	-	-
21	4.6185	13.65	Qp	0	.1	9.3	23.05	56	-32.95	-	-
23	13.56	8.36	Qp	.1	.2	9.3	17.96	60	-42.04	-	-

Qp - Quasi-Peak detector

Ca - CISPR average detection

Markers 11, 12, 23 and 24, the 13.56 MHz signal is an external NFC signal unrelated to the EUT.

12. SETUP PHOTOS

Please refer to UL Verification Services Report number 13757234-EP2V1.

END OF TEST REPORT