



SIMULTANEOUS TRANSMISSION TEST REPORT

Report Number.: 13757234-E13V1

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 : Computer Pack

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
FCC 47 CFR PART 15 SUBPART E
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	5/13/2022	Initial Issue	---

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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

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

MODEL TESTED: M1003000

BRAND: Magic Leap Inc.

SERIAL NUMBER: P552X8E001Q (Radiated)

SAMPLE RECEIPT DATE: AUGUST 10, 2021

DATE TESTED: JANUARY 21, 2022 – JANUARY 31, 2022

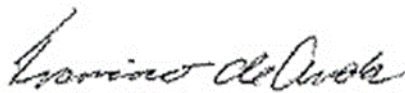
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Complies
CFR 47 Part 15 Subpart E	Complies
ISED RSS-247 Issue 2	Complies
ISED RSS-GEN Issue 5 + A1 + A2	Complies

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.

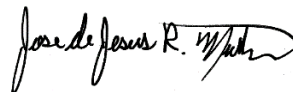
This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This 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
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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	Per ANSI C63.10, Section 12.2.
15.209, 15.205, 15.407 (b) (1-4)	RSS-GEN 8.9, 8.10, RSS-247 6.2	Radiated Emissions	Complies	For colocation testing

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with:

- FCC CFR 47 Part 2
- FCC CFR 47 Part 15
- FCC KDB 662911 D01 v02r01
- FCC KDB 905462 D02 v02/D03 v01r02/D06 v02
- KDB 558074 D01 15.247 Meas Guidance v05r02
- FCC KDB 789033 D02 v02r01
- KDB 414788 D01 Radiated Test Site v01r01
- ANSI C63.10-2013
- RSS-GEN Issue 5 + A1 + A2
- RSS-247 Issue 2

The scope of this report covers the co-location modes in the 2.4GHz and 5Ghz band.

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 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 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

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

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

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

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

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

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

EUT is a spatial AR computing device consists of compute pack and headset. The compute pack includes BT, BLE, 2.4GHz and 5GHz Wifi 802.11 a/b/g/n/ac/ax radio transceivers.

6.2. MAXIMUM OUTPUT POWER & DESCRIPTION OF AVAILABLE ANTENNAS

Refer to reports 13757234-E6, -E7, -E8, -E9, -E10, and -E11 for output power and antenna gain and type information.

6.3. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was PEQ3B.

For BLE Mode

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

The test utility software used during testing was Qualcomm Radio Control Toolkit V4.0, Version: 4.0.00194.0.

6.4. WORST-CASE CONFIGURATION AND MODE

For BT

The fundamental of the EUT was investigated in three orthogonal orientations X, Y, Z, it was determined that Y orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Y orientation.

Worst-case data rates as provided by the client were:

GFSK mode: DH5
8PSK mode: 3-DH5

For BLE

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

For 2.4 DTS

The fundamental of the EUT was investigated in three orthogonal orientations X, Y, Z, it was determined that SISO ANT1 X, SISO ANT2 Y, MIMO Z orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in its corresponding worst-case orientation. Photos are shown for Z-orientation.

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

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20 mode: MCS0
802.11ax HE20 mode: MCS0

For 5GHz UNII

The fundamental of the EUT was investigated in three orthogonal orientations X, Y, Z, it was determined that SISO ANT1 Y, SISO ANT2 X, MIMO Y orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in its corresponding worst-case orientation.

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

802.11a mode: 6 Mbps
802.11n HT20 mode: MCS0
802.11n HT40 mode: MCS0
802.11ac VHT80 mode: MCS0
802.11ac VHT160 mode: MCS0
802.11ax HE20 mode: MCS0
802.11ax HE40 mode: MCS0
802.11ax HE80 mode: MCS0
802.11ax HE160 mode: MCS0

6.5. SIMULTANEOUS TRANSMISSION CONFIGURATIONS

Simultaneous transmission of the following was investigated:

- 5GHz and Bluetooth
- 5GHz WLAN and BLE
- 5GHz WLAN and 2.4GHz WLAN

Per the manufacturer, no other radios transmit simultaneously. See section 9.3 for modes tested.

6.6. 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	M3017	E135498	DoC		
Laptop (Conducted)	HP	EliteBook 840 G3	5CG65235OJ	DoC		
Laptop AC Adapter (Conducted)	HP	854055-002	CTWFTKVOEGC95379	DoC		
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 EUT and then removed during radiated tests. Test software exercised the radio card. BT tester was used during BT+WLAN testing to maintain BT signal. For radiated emissions, EUT was powered by AC/DC adapter.

The computer pack and headset are permanently connected.

7. MEASUREMENT METHOD

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

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

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, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	143449	08/04/2022	08/04/2021
RF Filter Box, 8 port, 1-18GHz	UL-FR1 (CTECH)	SAC 8 port rf box 1	197920	04/08/2022	04/08/2021
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	169927	02/21/2022	02/21/2021
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	79834	05/07/2022	05/07/2021
RF Filter Box, 1-18GHz	FREMONT	SAC-L1	171013	04/09/2022	04/09/2021
EMI TEST RECEIVER, with B8 option	Rohde & Schwarz	ESW44	169937	02/23/2022	02/23/2021
UL TEST SOFTWARE LIST					
Radiated Software	UL	UL EMC	Rev 9.5, Apr 30, 2020/Jan 3, 2020		

9. SIMULTANEOUS TRANSMISSION TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

Note – The following duty cycle data was pulled from the following UL Verification services report numbers 13757234-E6, E7, E8, E9, E10 & E11. Below is data from reference reports:

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
802.11b	0.656	0.668	0.982	98.20	0.00	0.010
802.11g	2.091	2.110	0.991	99.12	0.00	0.010
802.11n HT20	5.410	5.450	0.993	99.27	0.00	0.010
802.11ax HE20 SU OFDM	5.444	5.462	0.997	99.67	0.00	0.010
802.11ax HE20 OFDMA, RU Index 242T	2.756	2.778	0.992	99.21	0.00	0.010

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
5GHz Band						
802.11a	2.096	2.114	0.992	99.18%	0.00	0.010
802.11n HT20	5.428	5.444	0.997	99.72%	0.00	0.010
802.11n HT40	5.430	5.444	0.998	99.76%	0.00	0.010
802.11ac VHT80	5.430	5.444	0.998	99.76%	0.00	0.010
802.11ac VHT160	5.428	5.444	0.997	99.72%	0.00	0.010
802.11ax HE20 OFDM, SU	5.444	5.462	0.997	99.67%	0.00	0.010
802.11ax HE20 OFDMA, RU size 242T	2.755	2.771	0.994	99.42%	0.00	0.010
802.11ax HE40 OFDM, SU	5.444	5.462	0.997	99.67%	0.00	0.010
802.11ax HE40 OFDMA, RU size 484T	2.755	2.773	0.994	99.35%	0.00	0.010
802.11ax HE80 OFDM, SU	5.444	5.462	0.997	99.67%	0.00	0.010
802.11ax HE80 OFDMA, RU size 996T	1.371	1.388	0.988	98.78%	0.00	0.010
802.11ax HE160 OFDM, SU	5.444	5.459	0.997	99.73%	0.00	0.010
802.11ax HE160 OFDMA, RU size 2x996T	0.724	0.740	0.978	97.80%	0.10	1.382

9.2. LIMITS AND PROCEDURE

FCC §15.205 and §15.209

FCC §15.407(b)(1-4) -

RSS-GEN, Section 8.9 and 8.10

RSS 247 Issue 2 Sections

6.2.1.2 (for 5150-5250 MHz band)

6.2.2.2 (for 5250-5350 MHz band)

6.2.3.2 (for 5470-5600 MHz and 5650-5725 MHz bands)

6.2.4.2 (for 5725-5850 MHz band)

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 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 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.

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.

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 558074 D01 15.247 Meas Guidance v05r02

Use of a duty cycle correction factor (DCCF) is permitted for calculating average radiated field strength emission levels for an FHSS device in 15.247. This DCCF can be applied when the field strength limit (e.g., within a Government Restricted band) and the conditions specified in Section 15.35(c) can be satisfied. The average radiated field strength is calculated by subtracting the DCCF from the maximum radiated field strength level as determined through measurement. The maximum radiated field strength level represents the worst-case (maximum amplitude) RMS measurement of the emission(s) during continuous transmission (i.e., not including any time intervals during which the transmitter is off or is transmitting at a reduced power level). It is also acceptable to apply the DCCF to a measurement performed with a peak detector instead of the specified RMS power averaging detector. Note that Section 15.35(c) specifies that the DCCF shall represent the worst-case (greatest duty cycle) over any 100 msec transmission period.

Note - For this test program, Peak detection was used. The DCCF was then subtracted from the peak value. The DCCF was calculated based on the worst case on-time when the device transmits DH5 packets and operates on 20 channels (5/1600 s per hop = 3.125 ms per channel). In this mode, the device will have a maximum of 2 hops on a channel in 100ms or $2 \times 3.125 \text{ ms} = 6.25 \text{ ms}$ on any channel. Therefore, $\text{DCCF} = 20 \log (6.25 / 100) = -24 \text{ dB}$.

9.3. SPURIOUS EMISSIONS FOR COLLOCATION

TEST-CASE CONDITIONS

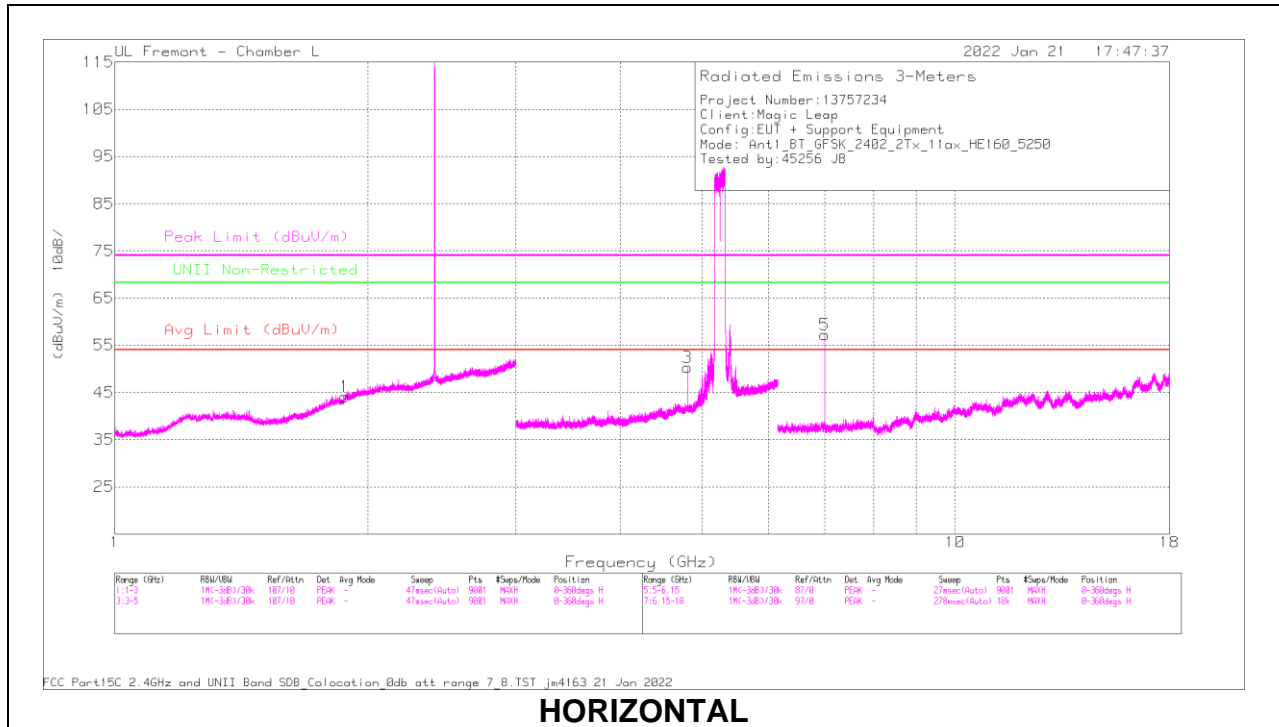
Test Case #	Antenna	Mode	Frequency (MHz)
1	Ant 1	BT GFSK	2402
	Ant 1 + Ant 2	WLAN 5GHz 11a	5200
2	Ant 1	BLE 1mbps	2402
	Ant 1 + Ant 2	WLAN 5GHz 11a	5200
3	Ant 1	WLAN 2.4 GHz 11b	2437
	Ant 1	WLAN 5 GHz 11a	5200
4	Ant 2	WLAN 2.4 GHz 11b	2437
	Ant 2	WLAN 5 GHz 11a	5200
5	Ant 1	WLAN 2.4 GHz 11b	2437
	Ant 2	WLAN 5 GHz 11a	5200
6	Ant 2	WLAN 2.4 GHz 11b	2437
	Ant 1	WLAN 5 GHz 11a	5200
7	Ant 1 + Ant 2	WLAN 2.4 GHz 11b	2437
	Ant 1	WLAN 5 GHz 11a	5200
8	Ant 1 + Ant 2	WLAN 2.4 GHz 11b	2437
	Ant 2	WLAN 5 GHz 11a	5200
9	Ant 1	WLAN 2.4 GHz 11b	2437
	Ant 1 + Ant 2	WLAN 5 GHz 11a	5200
10	Ant 2	WLAN 2.4 GHz 11b	2437
	Ant 1 + Ant 2	WLAN 5 GHz 11a	5200
11	Ant 1 + Ant 2	WLAN 2.4 GHz 11b	2437
	Ant 1 + Ant 2	WLAN 5 GHz 11a	5200
12	Ant 1	BT GFSK	2402
	Ant 1 + Ant 2	WLAN 5 GHz 11ax HE160 2*996T	5250
13	Ant 1	BLE 1mbps	2402
	Ant 1 + Ant 2	WLAN 5 GHz 11ax HE160 2*996T	5250
14	Ant 1 + Ant 2	WLAN 2.4 GHz 11ax HE20 26T	2437
	Ant 1 + Ant 2	WLAN 5 GHz 11ax HE160 996*2T	5250

For simultaneous transmission of BT GFSK (2.4GHz) & WLAN (5 GHz) bands, BLE (2.4GHz) & WLAN (5 GHz) bands, and WLAN (2.4 GHz) & WLAN (5 GHz) bands, investigation has been performed and no noticeable new emission were found.

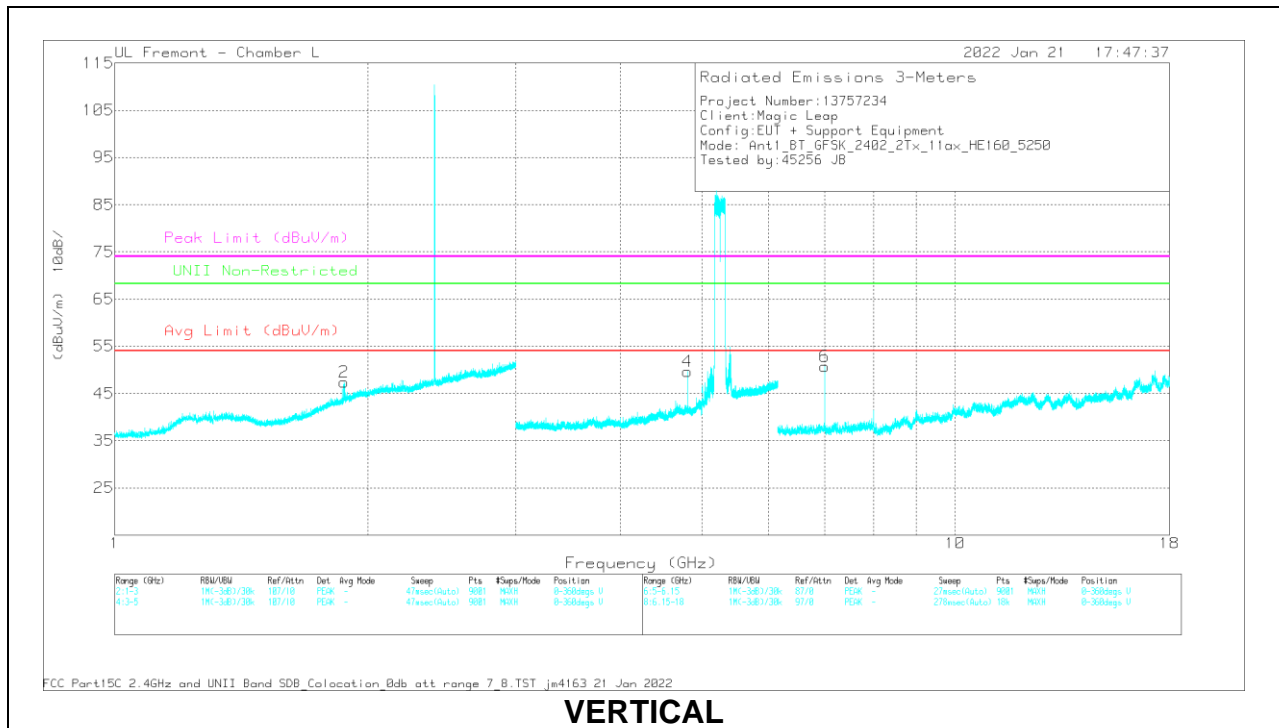
Above cases were all tested and case 12, 13 and 14 were reported to represent worst case.

9.3.1. TEST CASE 12

Ant 1 BT GFSK 2402MHz + Ant 1 & Ant 2 WLAN 5GHz 11ax HE160 2*996T



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (MHz)	Meas Reading (dBuV)	Det	AJ T119 (dBm)	Amp/Cal/Ret/Pad (dB)	Filter (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Unli Non-Restricted	PK Margin (dB)	Azimuth (Deg)	Height (m)	Polarity
1	1.875037	36.19	PK-U	31.1	-13.4	.5		54.29	-	-	-	-	68.2	-13.81	117	180	H
2	1.875042	36.88	PK-U	31.1	-13.4	.5		55.08	-	-	-	-	68.2	-13.12	113	119	V
3	* 4.804483	40.15	PK-U	34.1	-24.5	2		51.75	-	-	74	-22.25	-	-	143	112	H
	* 4.804671	28.73	PK	34.1	-24.5	2	-24	16.33	54	-37.67	-	-	-	-	143	112	H
4	* 4.8027	40.96	PK-U	34.1	-24.5	2		52.56	-	-	74	-21.44	-	-	113	136	V
	* 4.804558	29.11	PK	34.1	-24.5	2		16.71	54	-37.29	-	-	-	-	113	136	V
5	6.999885	46.21	PK-U	35.6	-20.5	.5		61.81	-	-	-	-	68.2	-6.39	357	136	H
6	6.998619	35.26	PK-U	35.6	-20.5	.5		50.86	-	-	-	-	68.2	-17.34	32	392	V

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

PK - Peak detector

PK-U - U-NII: Maximum Peak

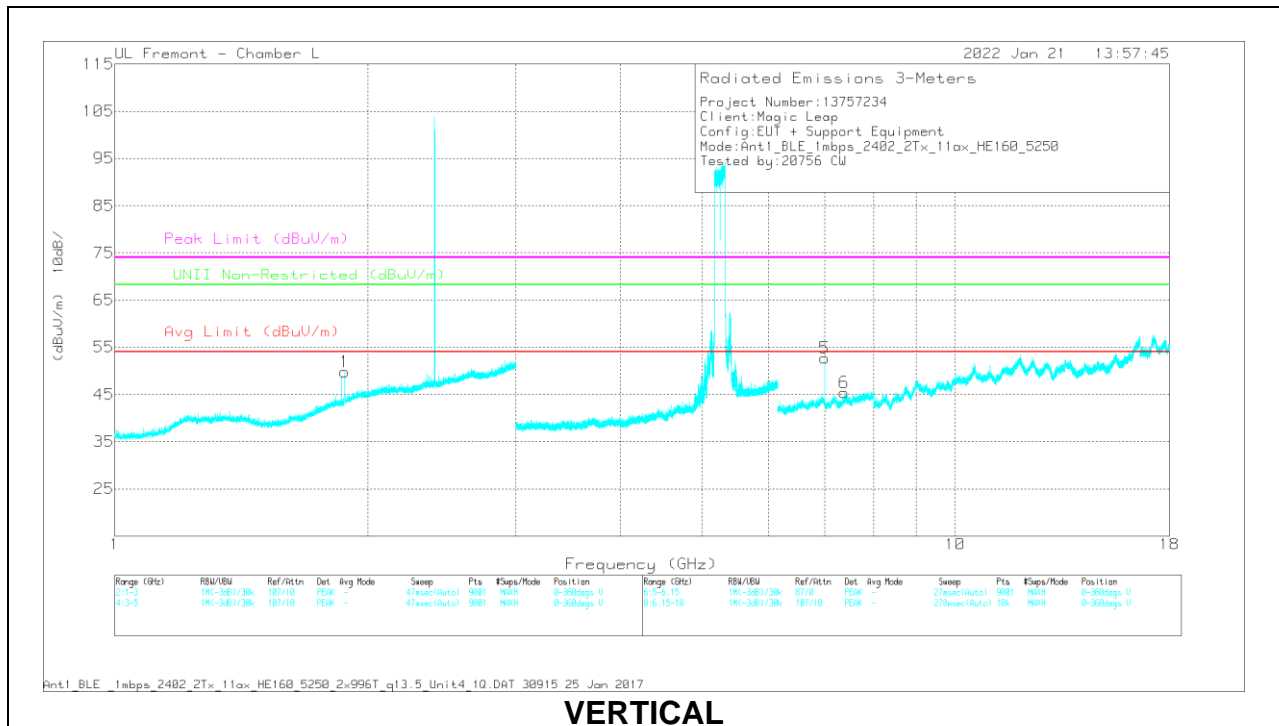
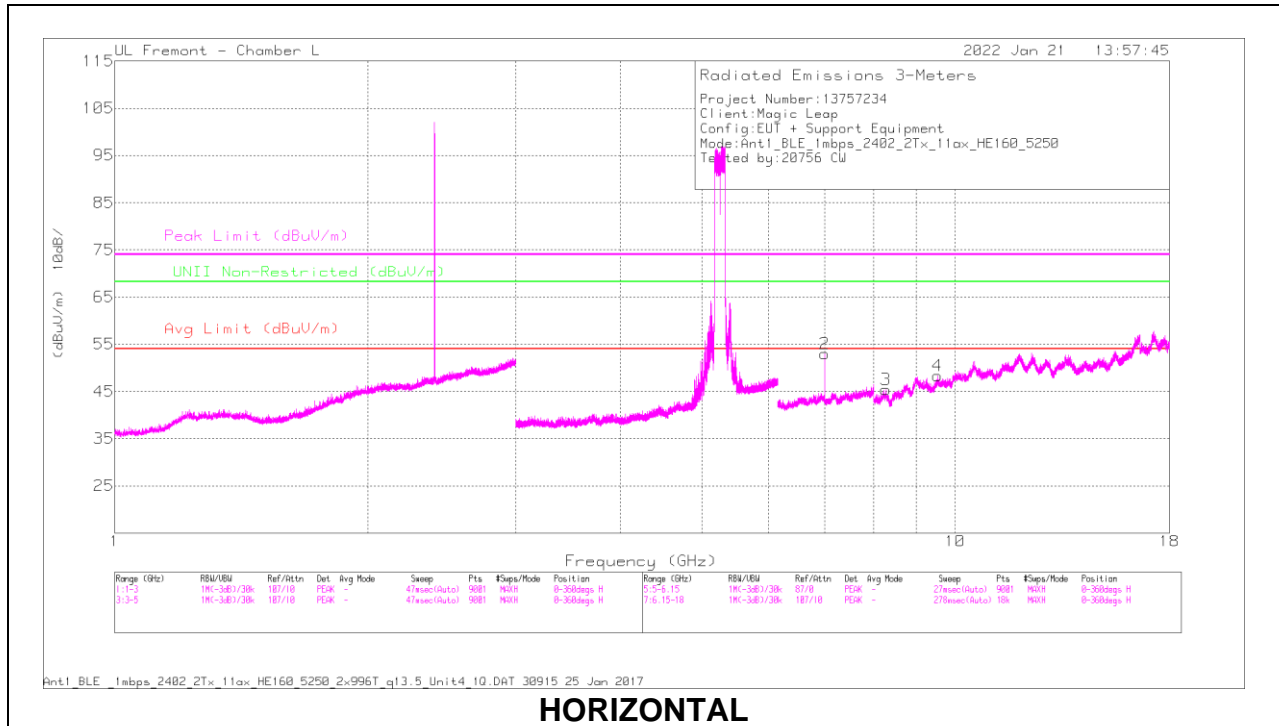
Note – Marker 3 and 4 is second harmonic of the BT signal.

Marker 5 and 6 is spurious signal from 5GHz signal.

The 5GHz sideband spurious signal is from the 5GHz signal and is compliant via bandedge testing in report # 13757234-E11.

9.3.2. TEST CASE 13

Ant 1 BLE 1Mbps 2402MHz + Ant 1 & Ant 2 WLAN 5GHz 11ax HE160 2*996T



RADIATED EMISSIONS

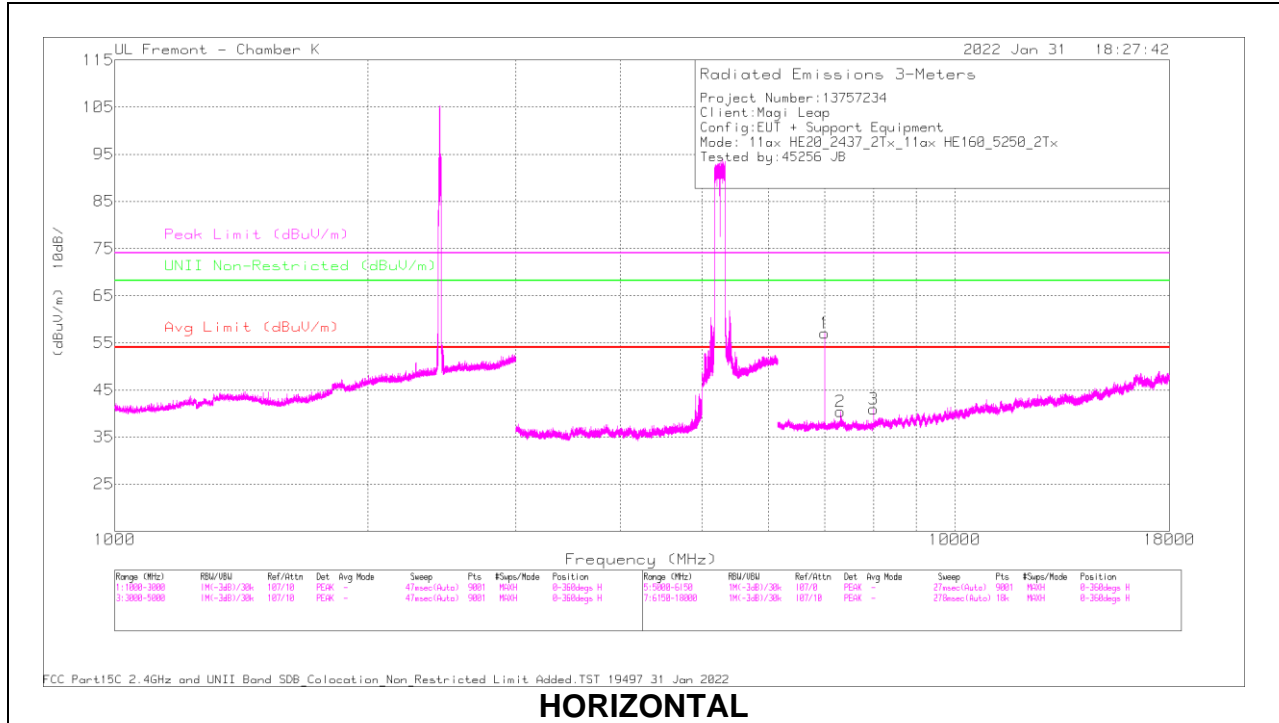
Marker	Frequency (MHz)	Meas Reading (dBuV)	Det	AF 1119 (dBm)	Amp/Cat/Pwr/Psd (dB)	Filter (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNI Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.877596	35.87	PK-U	31.1	-13.3	.5	-	54.17	-	-	-	-	68.2	-14.03	155	118	V
2	7.000953	42.11	PK-U	35.8	-20.9	.5	-	57.71	-	-	-	-	68.2	-10.49	268	101	H
3	* 8.274135	35.52	PK-U	35.8	-17.7	.5	-	55.12	-	-	74	-18.88	-	-	269	356	H
	* 8.274518	24.81	ADR	35.8	-17.7	.5	0.1	43.51	54	-10.49	-	-	-	-	269	356	H
4	9.540073	36.84	PK-U	36.6	-17.1	.5	-	56.84	-	-	-	-	68.2	-11.36	151	161	H
5	6.999991	48.8	PK-U	35.8	-20.5	.5	-	60.2	-	-	-	-	68.2	-8	105	389	V
6	* 7.379953	39.88	PK-U	35.8	-20	.5	-	54.88	-	-	74	-19.02	-	-	9	374	V
	* 7.379758	26.79	ADR	35.7	-20	.5	0.1	43.09	54	-10.91	-	-	-	-	9	374	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PK-U - U-NII: Maximum Peak
 ADR - U-NII AD primary method, RMS average

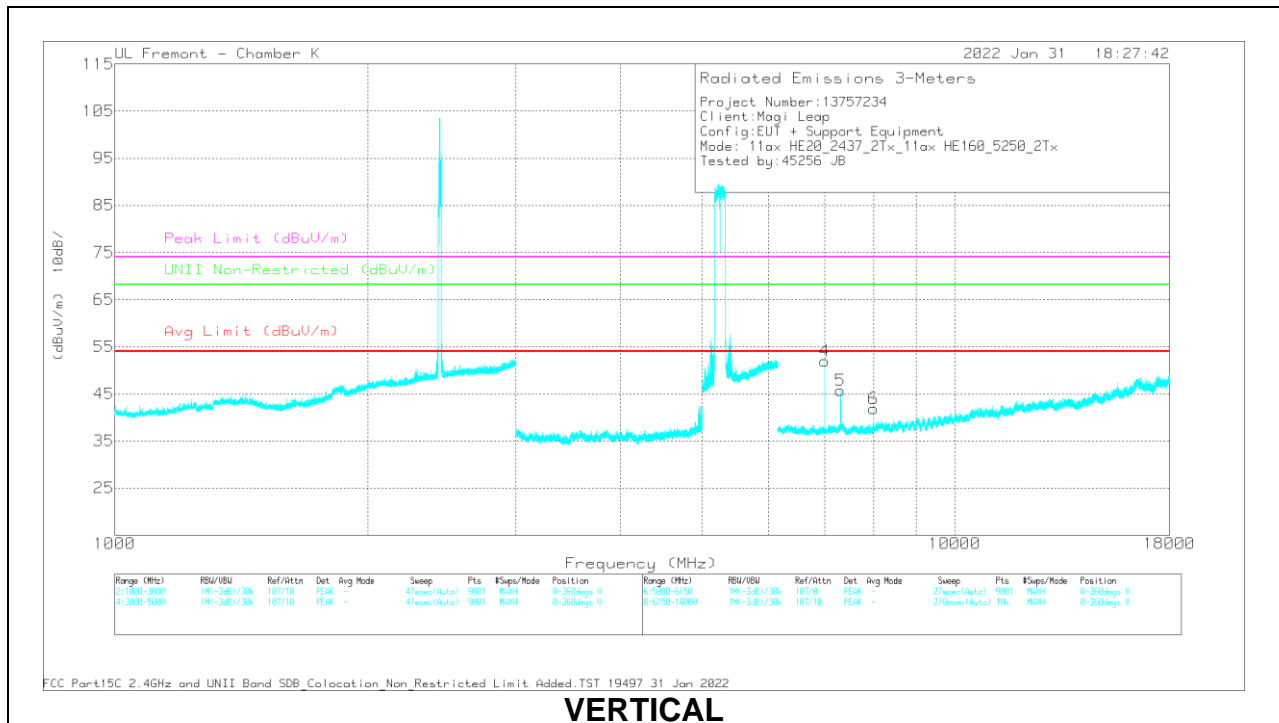
Note – Marker 2 and 5 is spurious signal from 5GHz signal.
 The 5GHz sideband spurious signal is from the 5GHz signal is compliant via bandedge testing in report # 13757234-E11.

9.3.3. TEST CASE 14

Ant 1 & Ant 2 WLAN 2.4GHz 11ax HE20 26T + Ant 1 & Ant 2 WLAN 5GHz 11ax HE160 2*996T



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (MHz)	Meas Reading (dBuV)	Det	AJ #0404 (dBm)	Amp/CoEff/InPad (dB)	Filter (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNI Non-Restricted (dBuV/m)	PK Margin (dB)	Altitude (Feet)	Height (cm)	Polarity
1	6999.925	61.54	PK-U	35.9	-37.8	.5	-	60.14	-	-	-	-	68.2	-8.06	284	246	H
3	8000.202	50.47	PK-U	35.9	-36.8	.5	-	50.07	-	-	-	-	68.2	-18.13	158	132	H
2	* 7312.599	58.52	PK-U	35.8	-36.4	.5	-	58.42	-	-	74	-15.58	-	-	267	210	H
	* 7310.617	42.07	ADR	35.8	-36.5	.5	0.1	41.67	54	-12.03	-	-	-	-	267	210	H
4	6999.762	55.9	PK-U	35.9	-37.8	.5	-	55.5	-	-	-	-	68.2	-12.7	82	215	V
6	7999.807	49.79	PK-U	35.9	-36.8	.5	-	49.39	-	-	-	-	68.2	-18.81	250	297	V
5	* 7312.527	64.28	PK-U	35.8	-36.4	.5	-	64.18	-	-	74	-9.82	-	-	303	113	V
	* 7310.221	48.04	ADR	35.8	-36.5	.5	0.1	47.94	54	-6.06	-	-	-	-	303	113	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PK-U - U-NII: Maximum Peak
 ADR - U-NII AD primary method, RMS average

Note – Marker 1 & 4 is spurious signal from 5GHz signal.
 Marker 5 is 3rd harmonic of 2.4GHz signal.

The 5GHz sideband spurious signal is from the 5GHz signal is compliant via bandedge testing in report # 13757234-E11.

10. SETUP PHOTOS

Please refer to UL Verification Services Report number 13757234-EP2.

END OF TEST REPORT