



CERTIFICATION TEST REPORT

Report Number. : 4789694343-FR1V1

Applicant : I.M.LAB Inc.
Haesung Bldg, 7F 165, Yeoksam-ro, Gangnam, Seoul, 06247,
South Korea

Model : CC3G

FCC ID : 2ASY3CC3G

EUT Description : cprCUBE Pro

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C

Date Of Issue:
November 17, 2020

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	11/17/20	Initial issue	Jaehyong Lee

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: I.M.LAB Inc.
EUT DESCRIPTION: cprCUBE Pro
MODEL: CC3G
SERIAL NUMBER: Prototype (CONDUCTED)
Prototype (RADIATED);
DATE TESTED: NOV. 04, 2020 – NOV. 11, 2020;

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Complies

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. 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 IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Korea, Ltd. By:



CY Choi
Suwon Lab Engineer
UL Korea, Ltd.

Tested By:



Jaehyong Lee
Suwon Lab Engineer
UL Korea, Ltd.

2. TEST METHODOLOGY

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 15.
3. KDB 558074 D01 15.247 Meas Guidance v05r02.
4. ANSI C63.10-2013.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

218 Maeyeong-ro	
<input type="checkbox"/>	Chamber 1
<input type="checkbox"/>	Chamber 2
<input checked="" type="checkbox"/>	Chamber 3

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at <https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New-1.pdf>.

4. DECISION RULES AND MEASUREMENT UNCERTAINTY

4.1. METROLOGICAL TRACEABILITY

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

4.3. DECISION RULES

Decision rule for statement(s) of conformity is based on Procedure 1, Clause 4.4.2 in IEC Guide 115:2007.

4.4. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.01 dB
Radiated Disturbance, 30 MHz to 1 GHz	4.26 dB
Radiated Disturbance, 1 GHz to 18 GHz	5.90 dB
Radiated Disturbance, 18 GHz to 40 GHz	5.49 dB

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

5. EQUIPMENT UNDER TEST

5.1. EUT DESCRIPTION

The EUT is a cprCUBE Pro with Bluetooth LE.
This test report addresses the DTS operational mode.

5.2. MAXIMUM OUTPUT POWER

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

Frequency Range [MHz]	Mode	Power Mode	Output Power [dBm]	Output Power [mW]
2 402 ~ 2 480	1Mbps	Peak	-12.96	0.05
		Average	-13.20	0.05

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

**The internal antenna was Permanently attached.
Therefore this E.U.T Complies with the requirement of §15.203.**

The radio utilizes an internal antenna, with a maximum gain of -0.84 dBi

5.4. WORST-CASE CONFIGURATION AND MODE

Radiated emission below 1GHz was performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

Radiated emission above 1GHz was performed with the EUT set to transmit low/mid/high channels.

i. Worst Axis condition

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

Note 1 : All radiated tests were performed attached with battery for the worst case condition mode.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
None	None	None	None	None

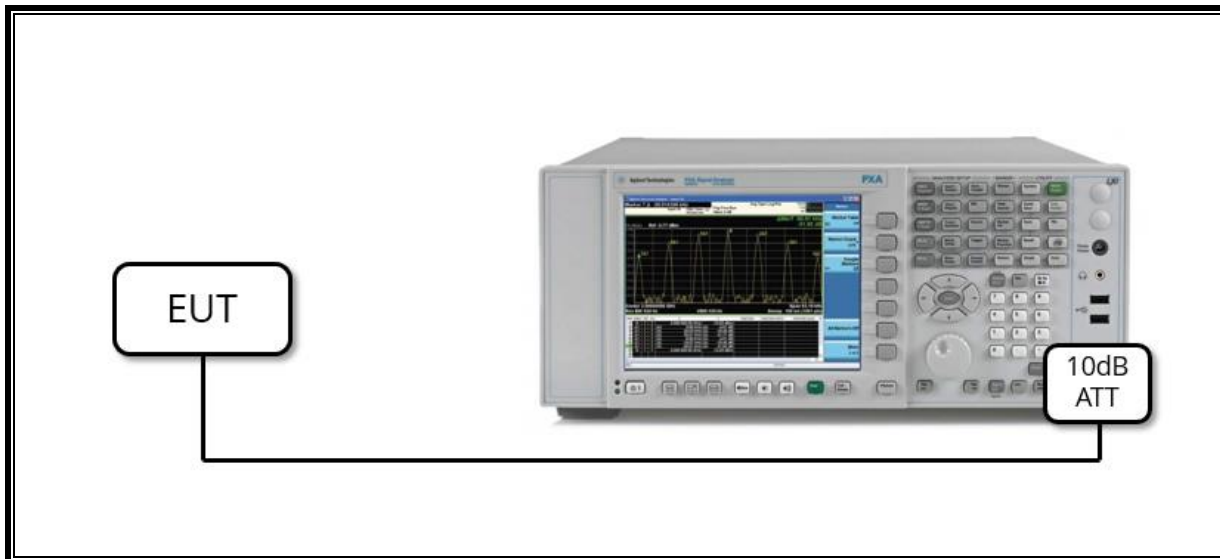
I/O CABLE

Cable No	Port	# of identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	None	None	None	None	None	None

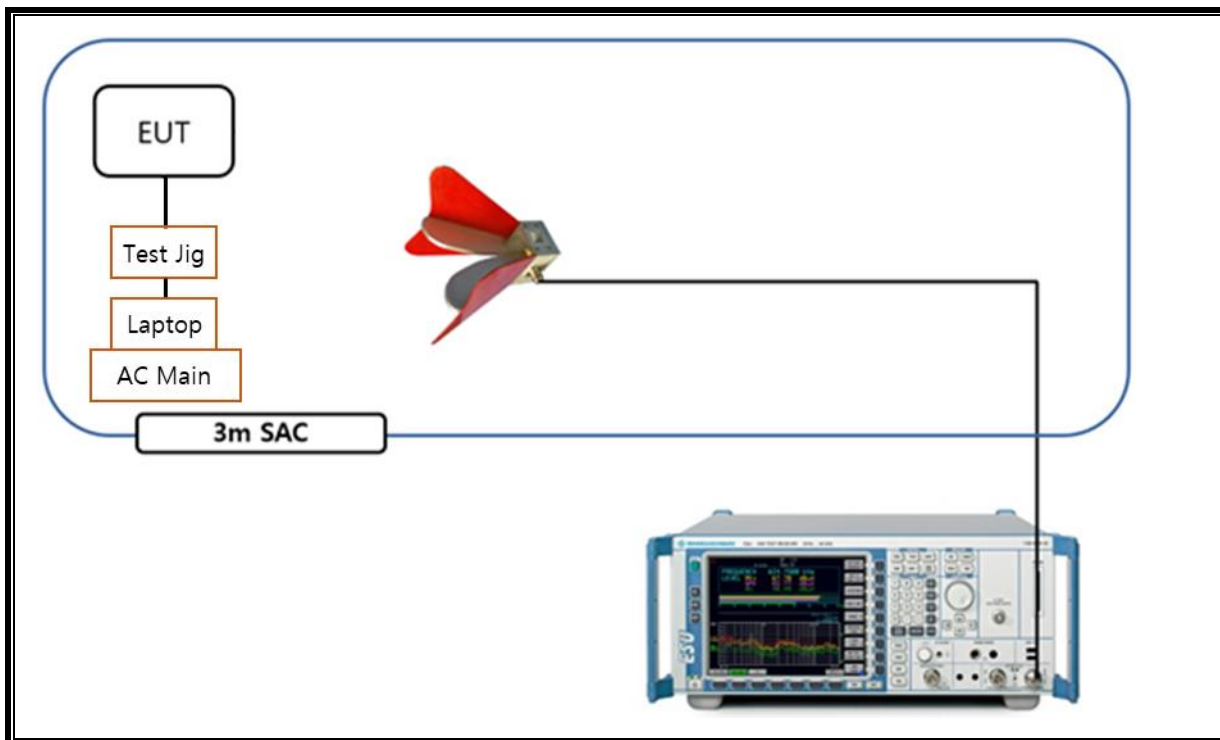
TEST SETUP

The EUT is a unit with test jig during the tests.
Test software in BLE menu exercised the EUT to enable BLE mode.

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



6. MEASUREMENT METHOD

6 dB BW : KDB 558074 D01 v05r02, Section 8.2.

OUTPUT POWER : KDB 558074 D01 v05r02, Section 8.3.1.1

POWER SPECTRAL DENSITY : KDB 558074 D01 v05r02, Section 8.4.

Out-of-band Emissions (Conducted) : KDB 558074 D01 v05r02, Section 8.5.

Out-of-band Emissions in Non-restricted Bands: KDB 558074 D01 v05r02, Section 8.5.

Out-of-band Emissions in Restricted Bands : KDB 558074 D01 v05r02, Section 8.6.

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

7. 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	S/N	Cal Due
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	08-19-22
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	08-13-22
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	845	08-13-22
Antenna, Horn, 18 GHz	ETS	3115	00167211	07-27-22
Antenna, Horn, 18 GHz	ETS	3115	00161451	08-15-22
Antenna, Horn, 18 GHz	ETS	3117	00168724	07-27-22
Antenna, Horn, 18 GHz	ETS	3117	00168717	08-15-22
Antenna, Horn, 40 GHz	ETS	3116C	00166155	08-04-22
Antenna, Horn, 40 GHz	ETS	3116C	00168645	10-02-21
Preamplifier	ETS	3116C-PA	00168841	08-06-21
Preamplifier, 1000 MHz	Sonoma	310N	341282	08-03-21
Preamplifier, 1000 MHz	Sonoma	310N	351741	08-03-21
Preamplifier, 1000 MHz	Sonoma	310N	370599	08-06-21
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1876511	08-03-21
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	08-03-21
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	2029169	08-04-21
Spectrum Analyzer, 44 GHz	Keysight	N9030B	MY57143652	01-20-21
Power Sensor	R&S	NRP-Z91	102681	08-05-21
Attenuator	R&S	10 dB	None	08-06-21
Attenuator	WEINSCHTEL	56-10	68936	08-07-21
EMI Test Receive, 40 GHz	R&S	ESU40	100439	08-03-21
EMI Test Receive, 40 GHz	R&S	ESU40	100457	08-03-21
EMI Test Receive, 44 GHz	R&S	ESW44	101848	08-03-21
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	009	08-03-21
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	015	08-03-21
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	020	08-04-21
High Pass Filter 3GHz	Micro-Tronics	HPM17543	010	08-03-21
High Pass Filter 3GHz	Micro-Tronics	HPM17543	015	08-03-21
High Pass Filter 3GHz	Micro-Tronics	HPM17543	020	08-04-21
High Pass Filter 6GHz	Micro-Tronics	HPS17542	009	08-03-21
High Pass Filter 6GHz	Micro-Tronics	HPS17542	016	08-03-21
High Pass Filter 6GHz	Micro-Tronics	HPS17542	021	08-04-21
Antenna, Loop, 9kHz-30MHz	R&S	HFH2-Z2	100418	10-02-21
UL Software				
Description	Manufacturer	Model	Version	
Radiated software	UL	UL EMC	Ver 9.5	

8. TEST RESULTS SUMMARY

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result
15.247 (a)(2)	Occupied Band width (6dB)	>500KHz	Conducted	Pass
2.1051, 15.247 (d)	Band Edge / Conducted Spurious Emission	-20dBc		Pass
15.247 (b)(3)	TX conducted output power	<30dBm		Pass
15.247 (e)	PSD	<8dBm		Pass
15.207 (a)	AC Power Line conducted emissions	Section 10	Power Line conducted	N/A note1
15.205, 15.209	Radiated Spurious Emission	< 54dBuV/m(Av)	Radiated	Pass

Note1 : This EUT does only supplied by DC power.

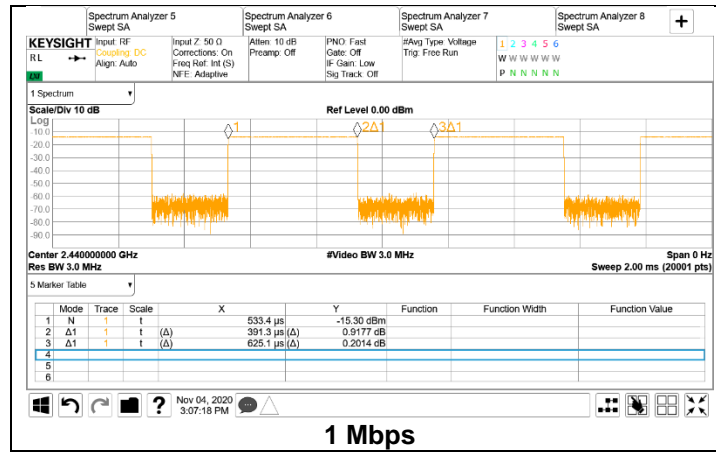
9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

Mode	ON Time B [msec]	Period [msec]	Duty Cycle x [linear]	Duty Cycle [%]	Duty Cycle Correction Factor [dB]	1/T Minimum VBW [kHz]
2400MHz Bands						
BLE 1 Mbps	0.391	0.625	0.626	62.6%	2.03	2.556



9.2. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

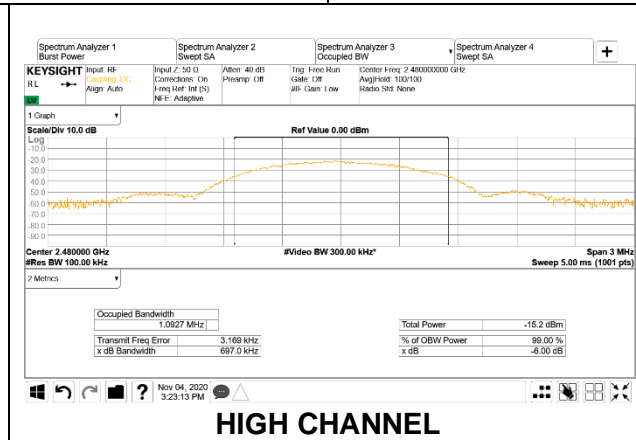
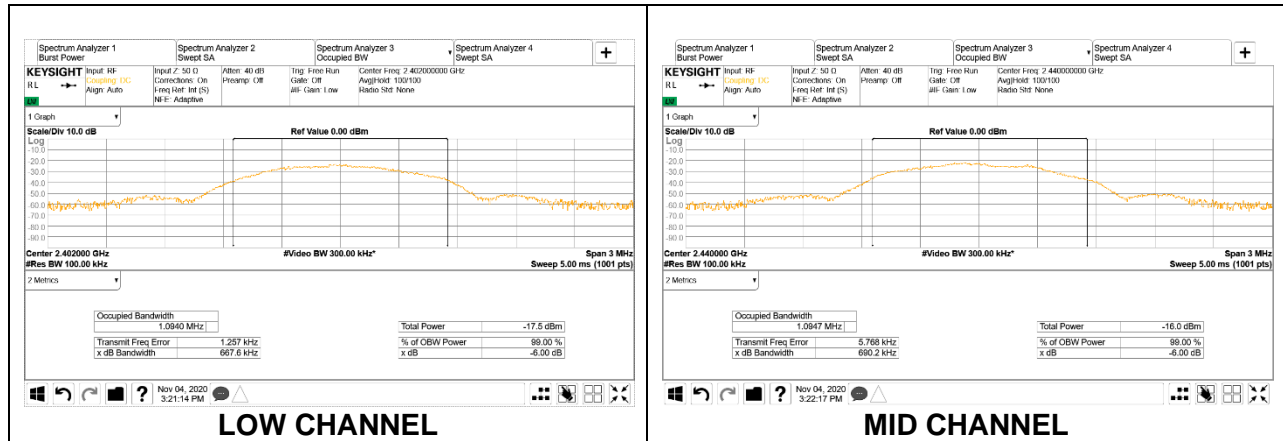
RSS-247 5.2 (a)

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

RESULTS

9.2.1. BLE (1Mbps)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.6676	0.5
Middle	2440	0.6902	0.5
High	2480	0.6970	0.5



9.3. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

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

TEST PROCEDURE

Peak power is measured using ANSI C63.10(2013) under section 11.9.1.1 utilizing spectrum analyzer.

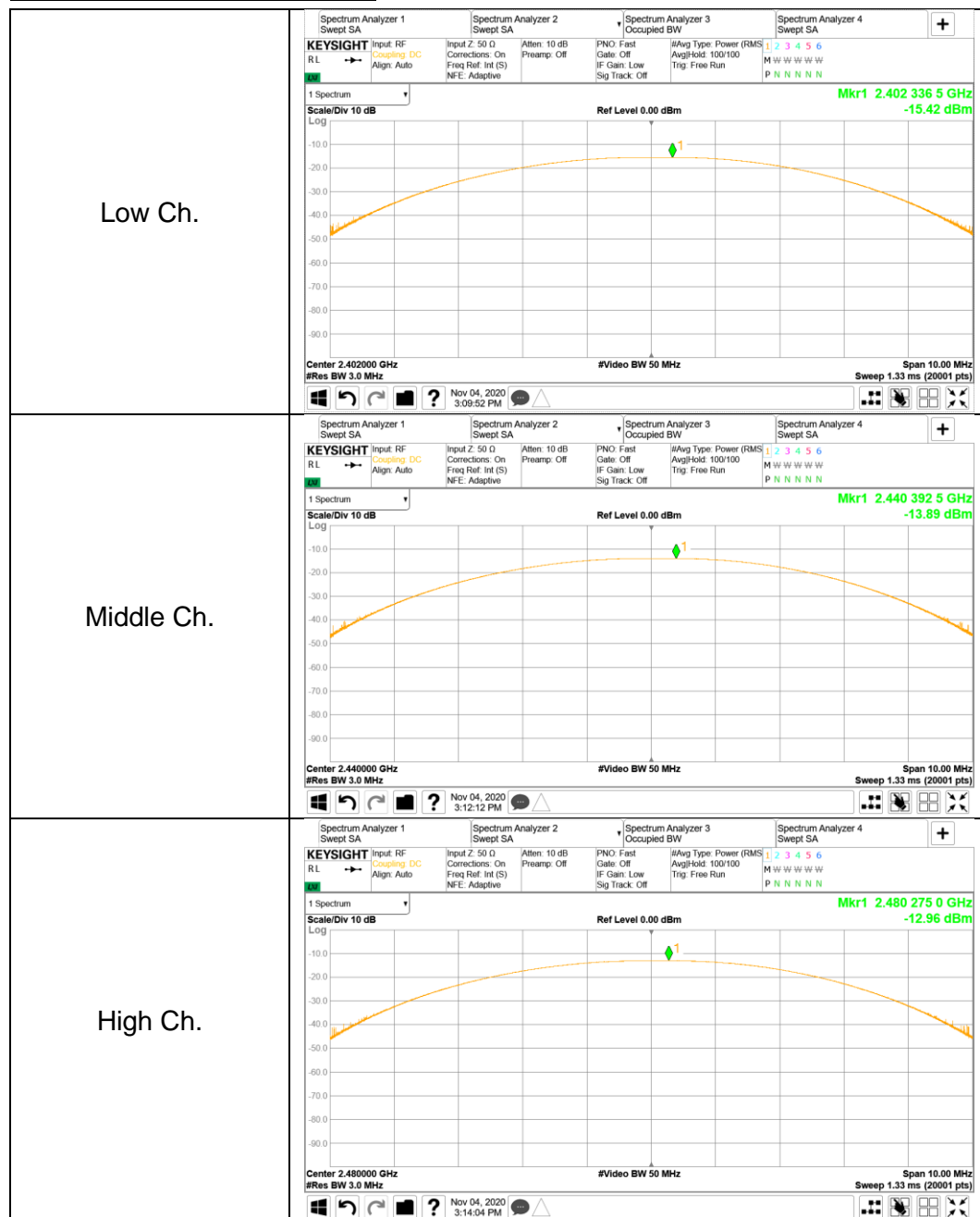
RESULTS

- 1 Mbps

Channel	Frequency [MHz]	Peak Power [dBm]	Limit [dBm]	Margin [dB]
Low	2402	-15.42	30.00	-45.42
Mid	2440	-13.89	30.00	-43.89
High	2480	-12.96	30.00	-42.96
Worst		-12.96	30.00	-42.96

9.3.1. BLE (1 Mbps)

PEAK OUTPUT POWER PLOTS



9.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss was entered as an offset in the power meter to allow for direct reading of power. The duty factor already has been added.

- 1 Mbps

Channel	Frequency [MHz]	AV Power [dBm]	AV Power [mW]
Low	2402	-15.60	0.03
Mid	2440	-14.11	0.04
High	2480	-13.20	0.05

9.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

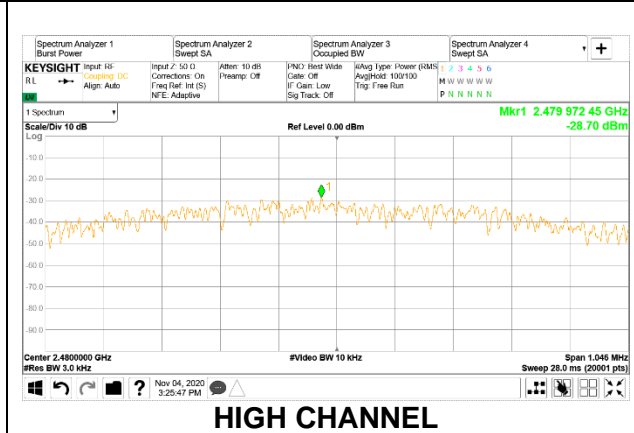
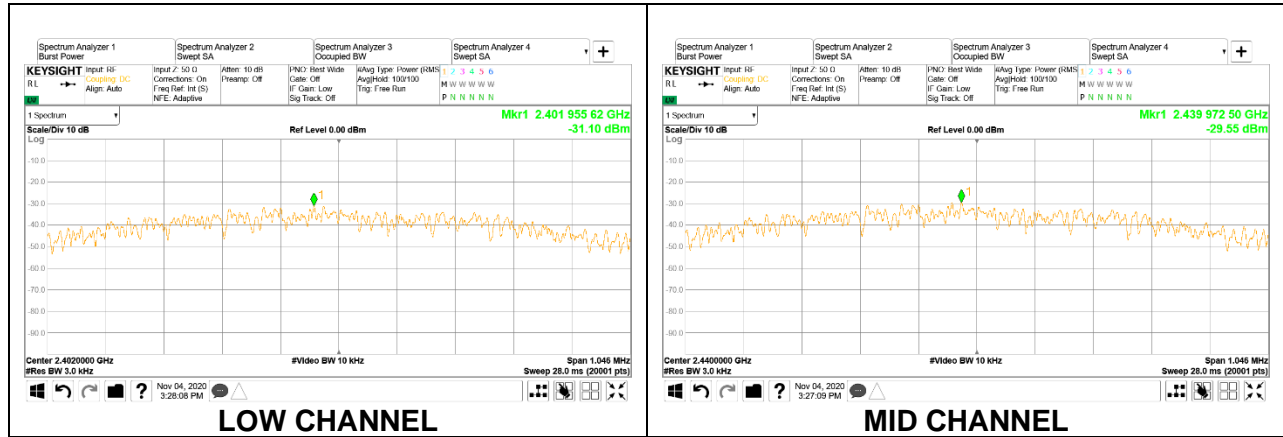
RSS-247 (5.2) (b)

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

RESULTS

9.5.1. BLE (1Mbps)

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-31.10	8.00	-39.10
Middle	2440	-29.55	8.00	-37.55
High	2480	-28.70	8.00	-36.70



9.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

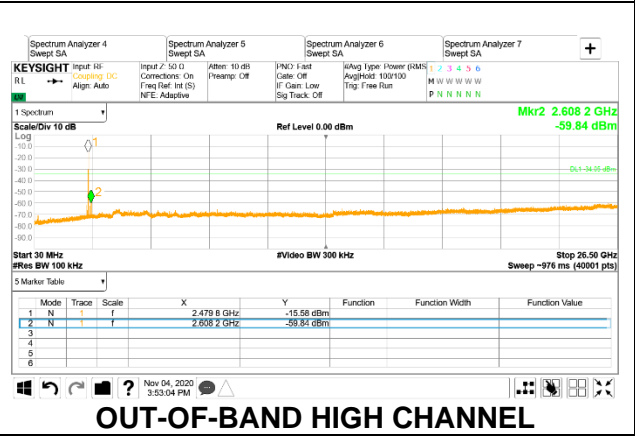
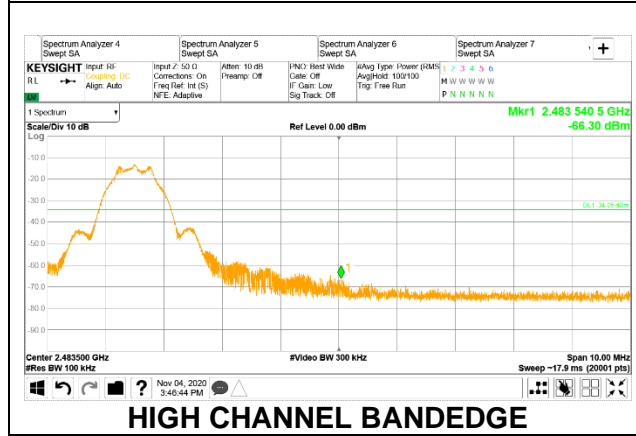
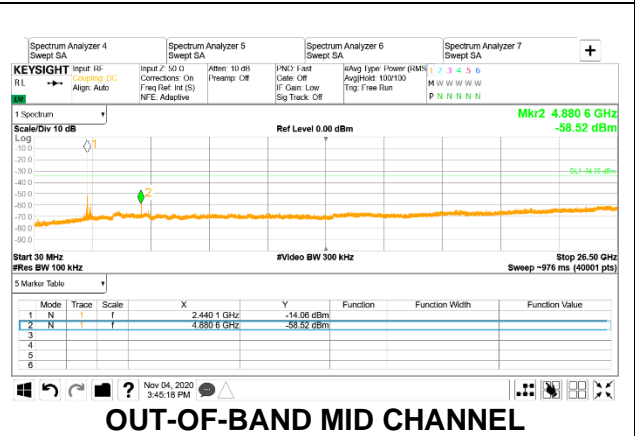
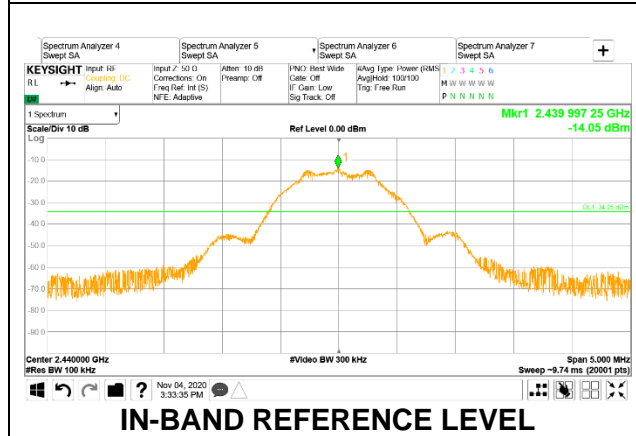
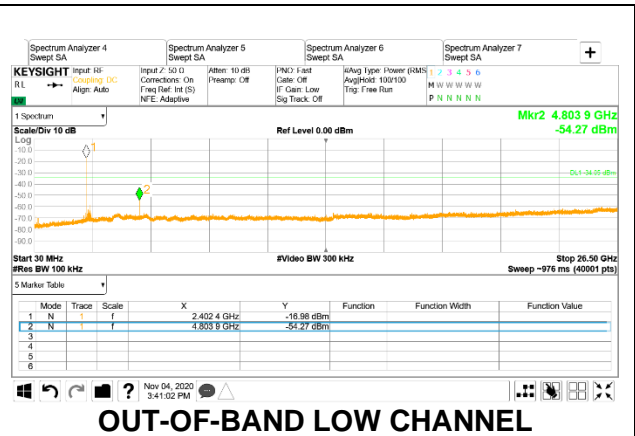
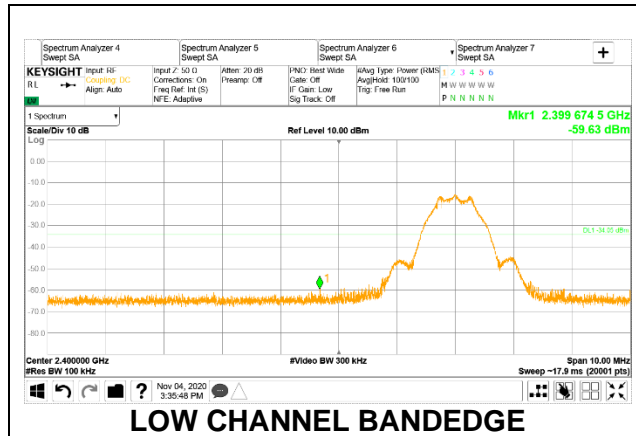
FCC §15.247 (d)

RSS-247 5.5

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

RESULTS

9.6.1. BLE (1Mbps)



10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (µV/m)	Measurement Distance (m)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 – 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 150 cm for 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 measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor for average measurements. (Restricted bandedge, Final detection of spurious harmonic emissions) Duty cycle factor = $10 \log(1/x)$. For this sample: For 1Mbps, DCF = $10 \log(1/0.626) = 2.03$ dB (Spectrum Analyzer round it up to 2.03 dB)

Pre-scans to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

The spectrum from 1 GHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.
(From 30MHz to 1GHz, test was performed with the EUT set to transmit at the channel with highest output power)

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 : Emission was pre-scanned from 9KHz to 30MHz; No emissions were detected which was at least 20dB below the specification limit (consider distance correction factor).
Per FCC part 15.31(o), test results were not reported.

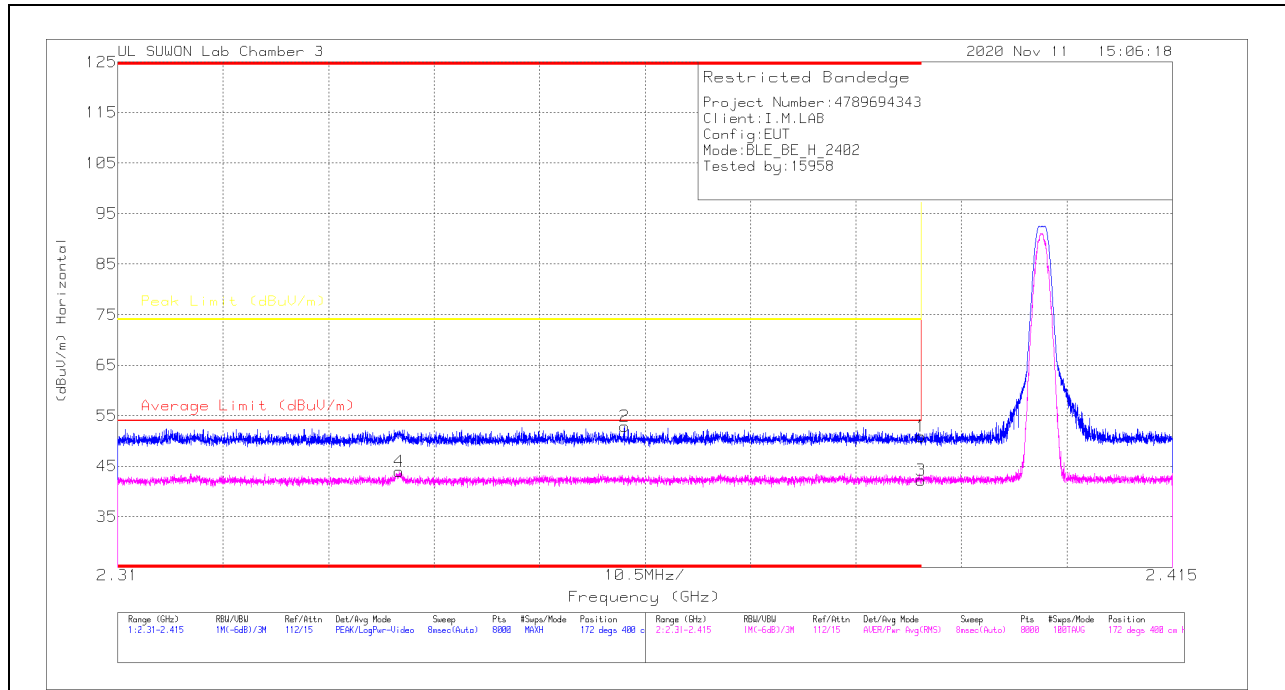
Although these tests were performed other than open field test site, adequate comparison measurements were confirmed against 30 m open are test site.
Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.

10.2. TRANSMITTER ABOVE 1 GHz

10.2.1. BLE (1Mbps)

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Trace Markers

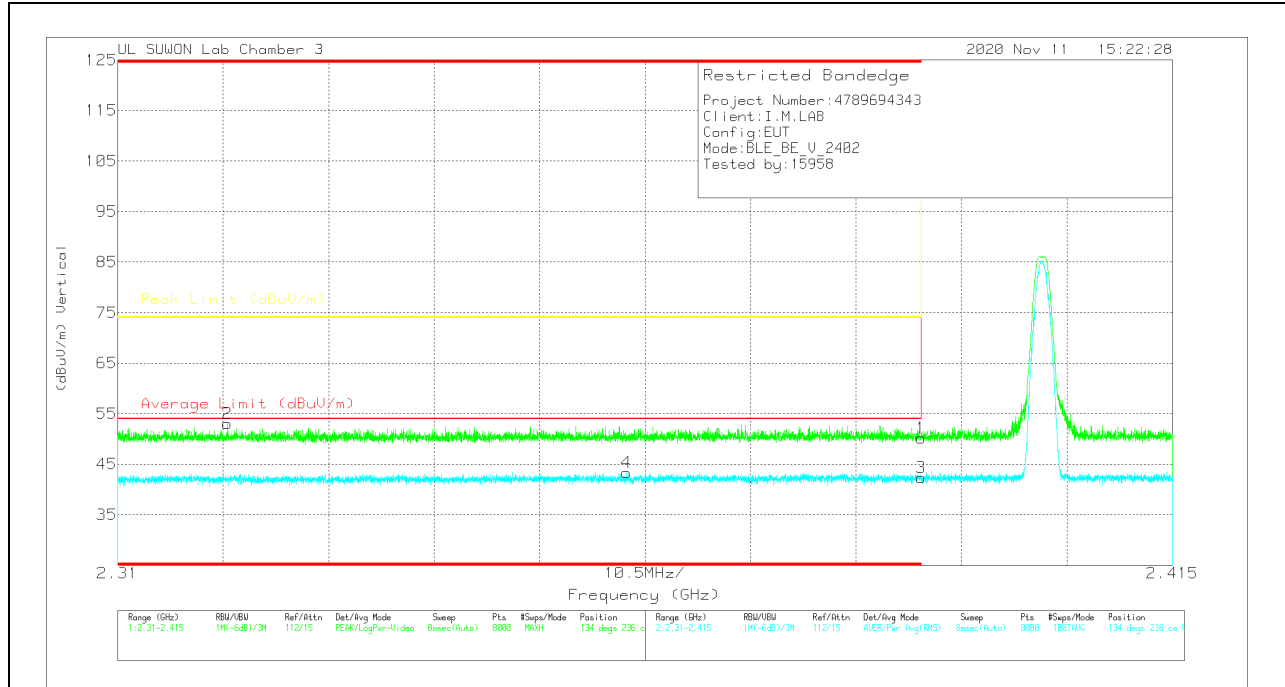
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00205959	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Acimth (Degs)	Height (cm)	Polarity
1	* 2.39	42.17	PK	31.7	-22.9	0	50.97	-	-	74	-23.03	172	400	H
2	* 2.36045	44.21	PK	31.6	-22.9	0	52.91	-	-	74	-21.09	172	400	H
3	* 2.39	31.41	RMS	31.7	-22.9	2.03	42.24	54	-11.76	-	-	172	400	H
4	* 2.33803	33.45	RMS	31.5	-23	2.03	43.98	54	-10.02	-	-	172	400	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL RESULT



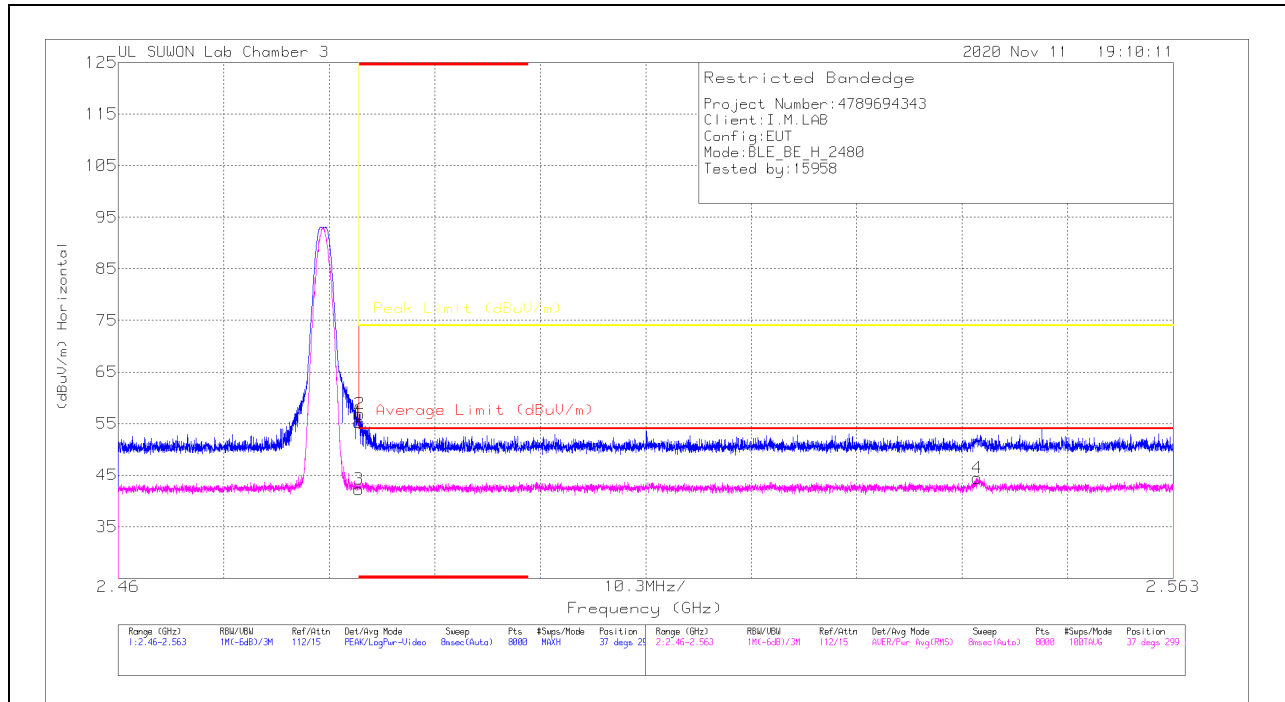
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00205959	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBu/m)	Average Limit (dBu/m)	Margin (dB)	Peak Limit (dBu/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	41.33	Pk	31.7	-22.9	0	50.13	-	-	74	-23.87	134	236	V
2	* 2.32092	44.44	Pk	31.5	-22.9	0	53.04	-	-	74	-20.96	134	236	V
3	* 2.39	31.51	RMS	31.7	-22.9	2.03	42.34	54	-11.66	-	-	134	236	V
4	* 2.36067	32.76	RMS	31.6	-23	2.03	43.39	54	-10.61	-	-	134	236	V

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

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT

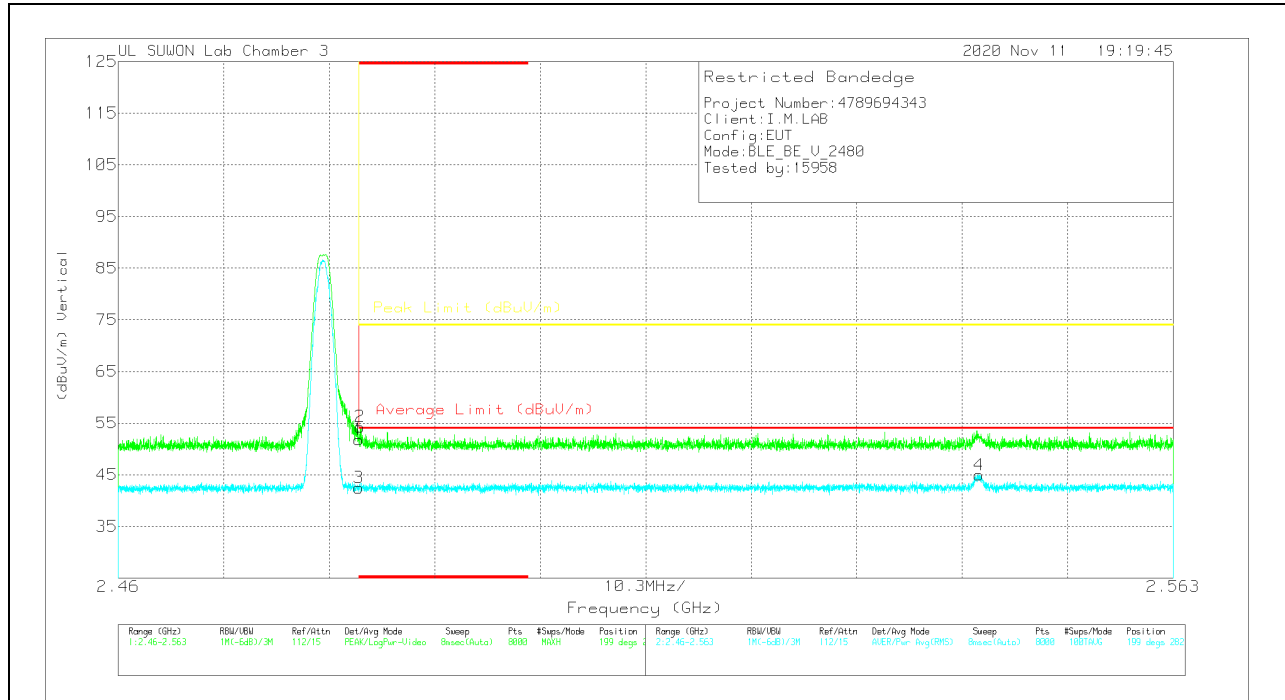


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00205959	10dB_ATT[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	* 2.4835	49.14	Pk	31.9	-22.8	0	55.24	-	-	74	-18.76	37	299	H
2	* 2.48358	47.75	Pk	31.9	-22.8	0	56.85	-	-	74	-17.15	37	299	H
3	* 2.4835	31.11	RMS	31.9	-22.8	2.03	42.24	54	-11.76	-	-	37	299	H
4	2.54387	33.21	RMS	32	-22.8	2.03	44.44	54	-9.56	-	-	37	299	H

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

VERTICAL RESULT



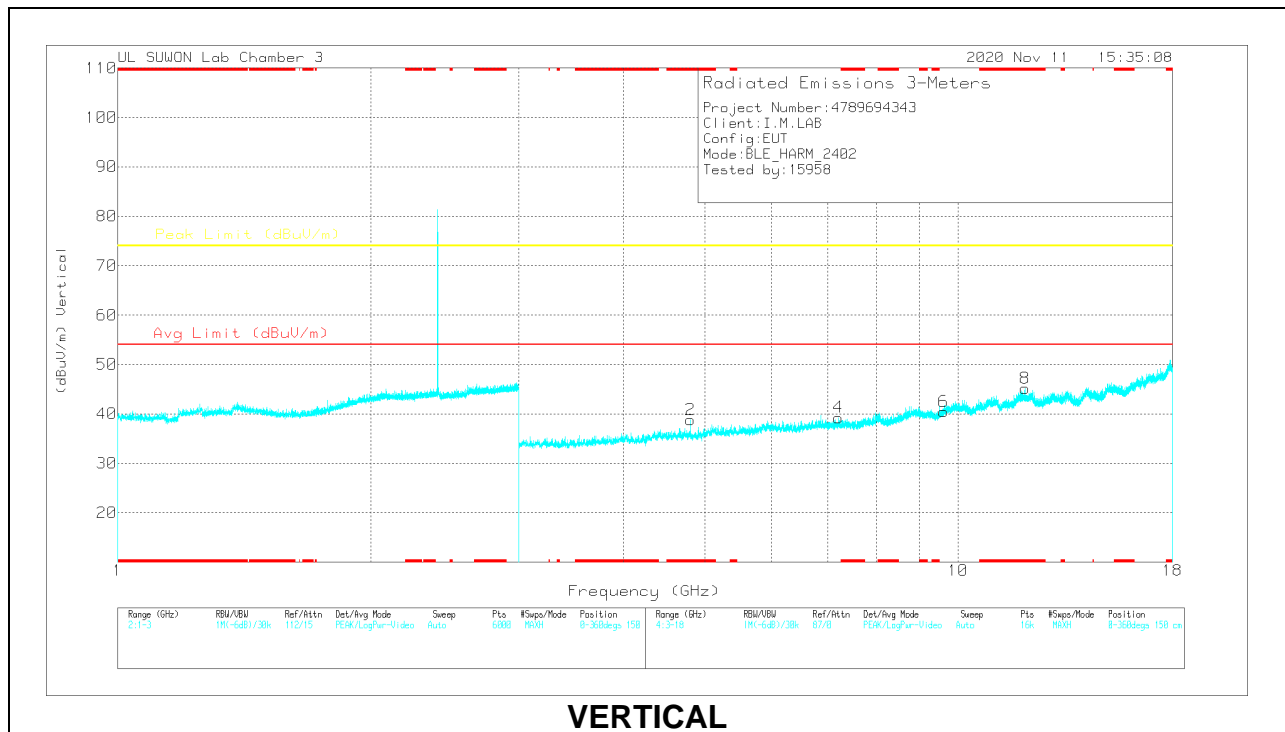
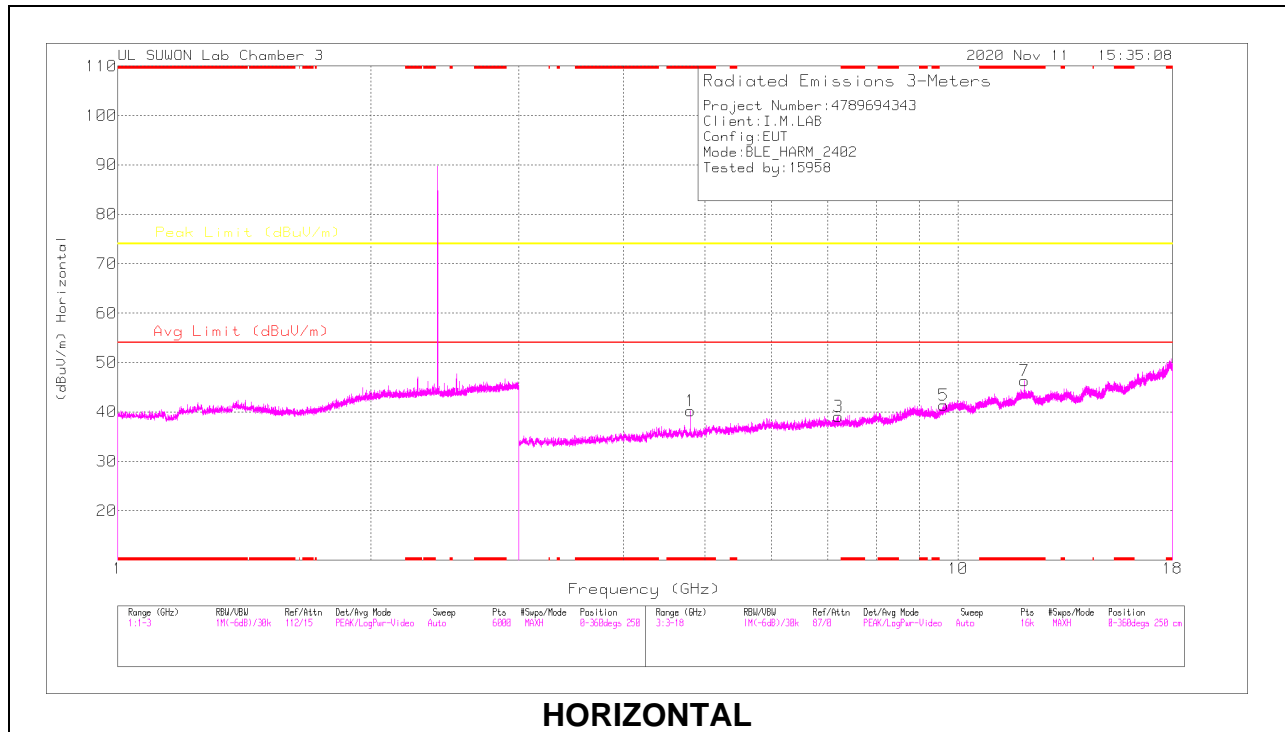
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00205959	10dB_ATT[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	* 2.4835	42.71	Pk	31.9	-22.8	0	51.81	-	-	74	-22.19	199	282	V
2	* 2.4836	45.17	Pk	31.9	-22.8	0	54.27	-	-	74	-19.73	199	282	V
3	* 2.4835	31.36	RMS	31.9	-22.8	2.03	42.49	54	-11.51	-	-	199	282	V
4	2.54404	33.7	RMS	32	-22.8	2.03	44.93	54	-9.07	-	-	199	282	V

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

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS

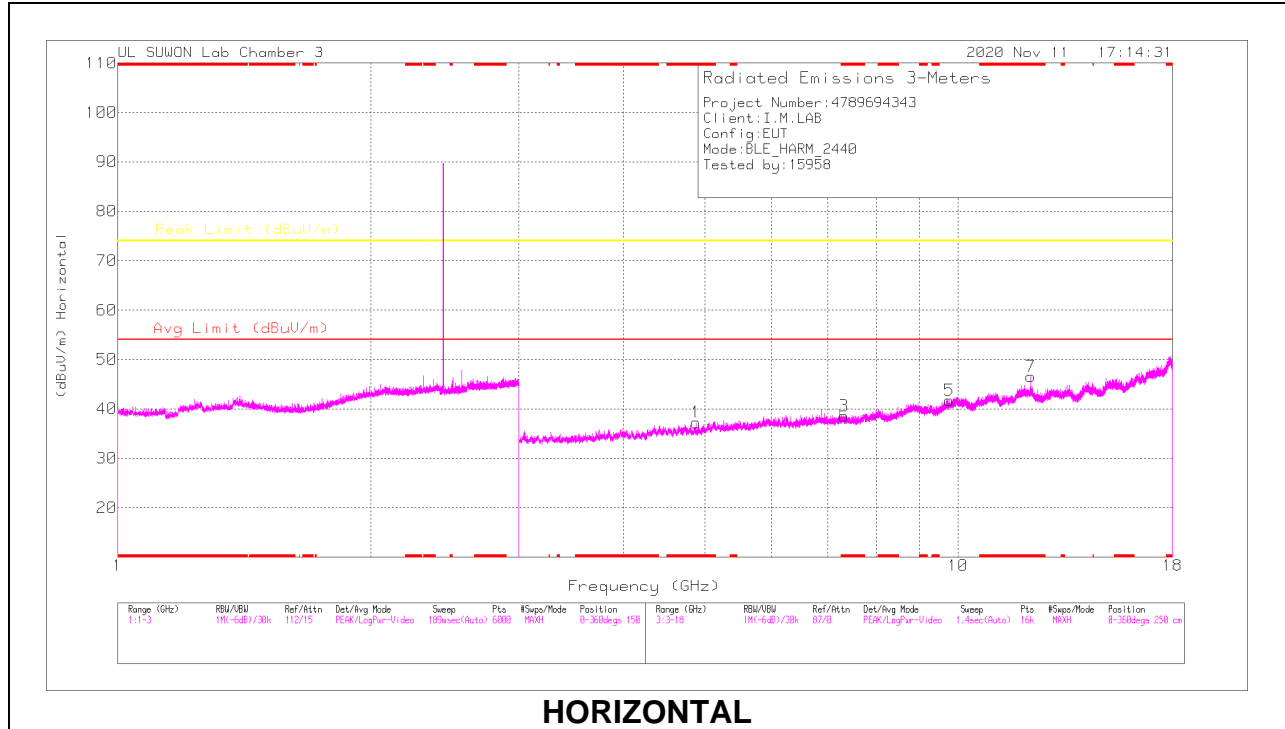


RADIATED EMISSIONS

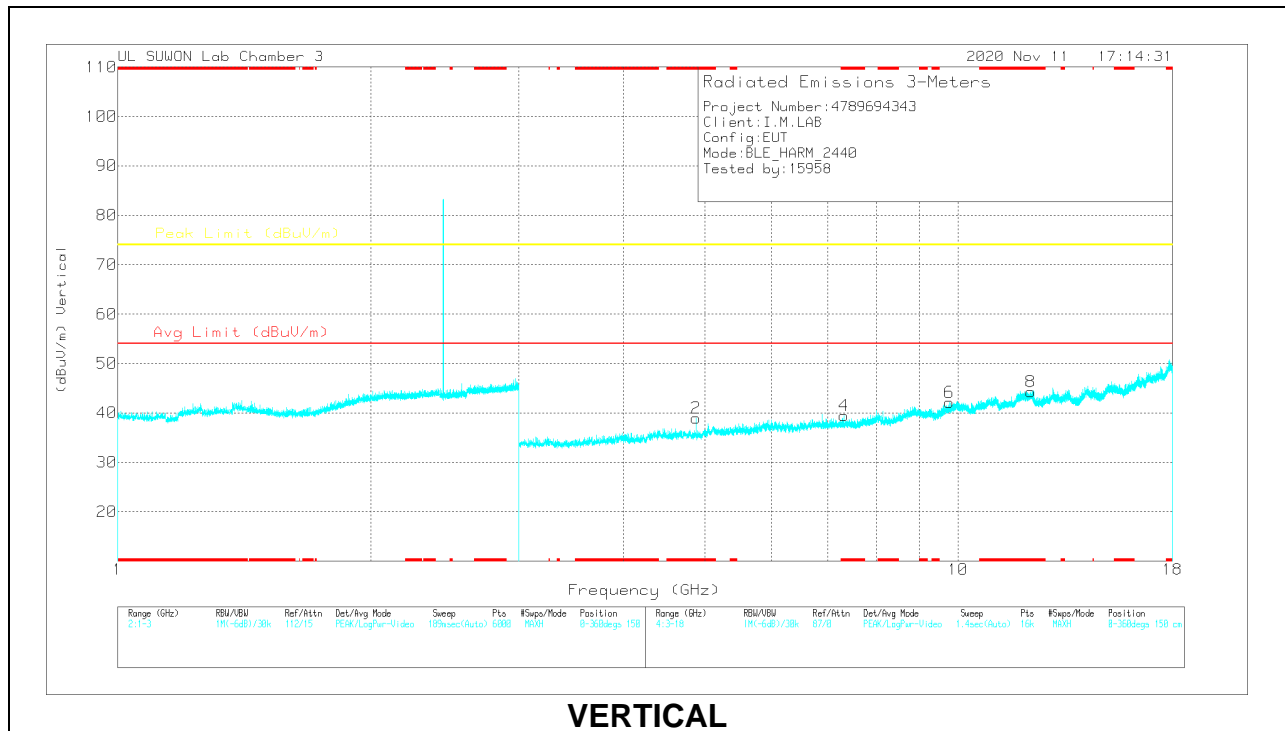
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0020595_9	3GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.80442	40.27	PK2	34.2	-27.9	0	46.57	-	-	74	-27.43	336	122	H
* 4.80372	31.43	MAV1	34.2	-27.9	2.03	39.76	54	-14.24	-	-	336	122	H
7.20519	33.21	PK2	35.8	-23.7	0	45.31	-	-	74	-28.69	360	150	H
9.60685	31.46	PK2	37	-19.7	0	48.76	-	-	74	-25.24	360	150	H
* 12.00864	36.84	PK2	39	-20	0	55.84	-	-	74	-18.16	80	227	H
* 12.00879	26.51	MAV1	39	-20	2.03	47.54	54	-6.46	-	-	80	227	H
* 4.80341	39.62	PK2	34.2	-27.9	0	45.92	-	-	74	-28.08	258	103	V
* 4.80426	30.58	MAV1	34.2	-27.9	2.03	38.91	54	-15.09	-	-	258	103	V
7.20593	32.78	PK2	35.8	-23.7	0	44.88	-	-	74	-29.12	360	150	V
9.60861	31.04	PK2	37	-19.7	0	48.34	-	-	74	-25.66	360	150	V
* 12.01336	34.23	PK2	39	-20	0	53.23	-	-	74	-20.77	319	224	V
* 12.01444	23.33	MAV1	39	-20	2.03	44.36	54	-9.64	-	-	319	224	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



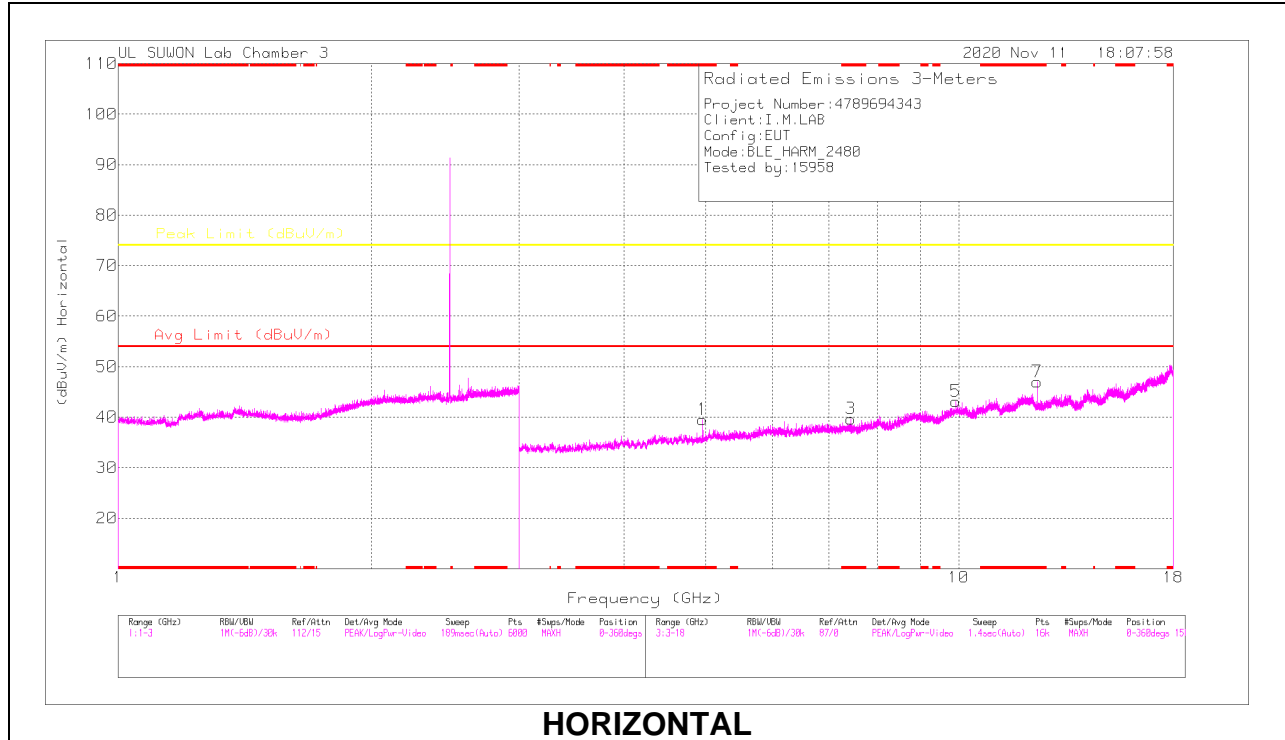
VERTICAL

RADIATED EMISSIONS

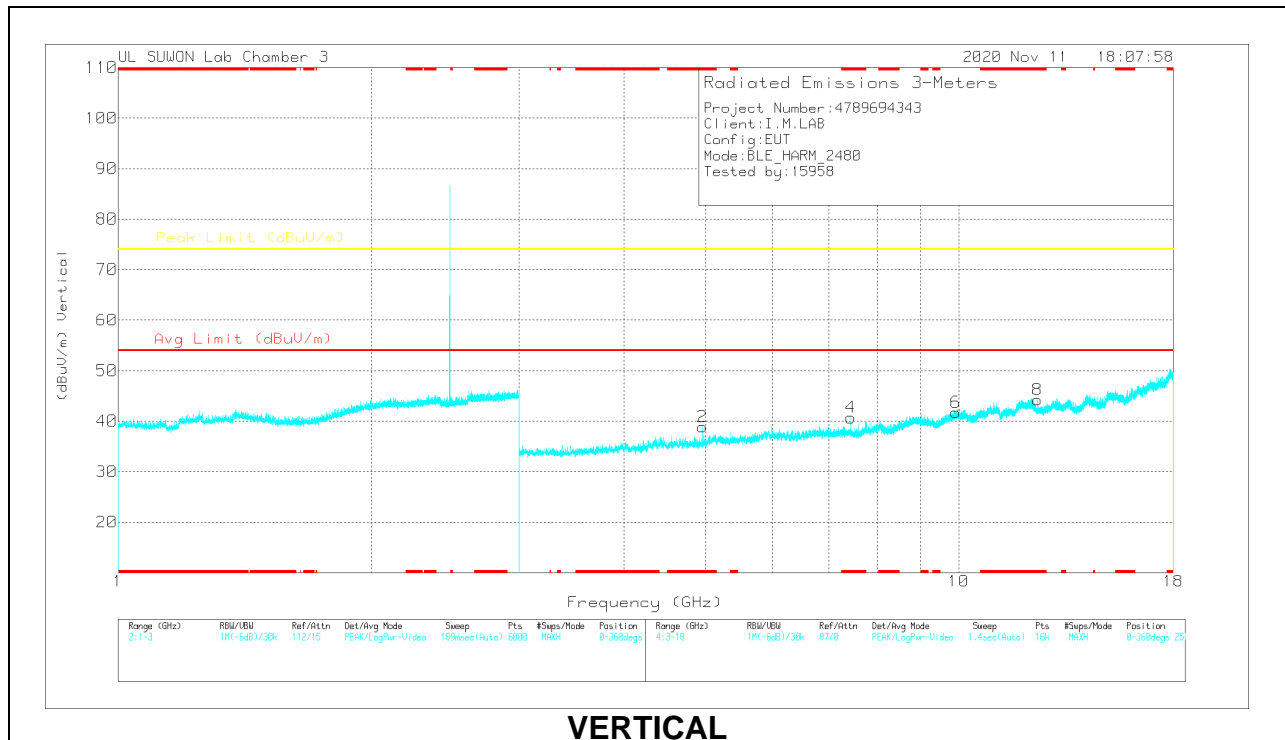
Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0020595 9	3GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.89056	42.31	PK2	34.2	-28.7	0	47.81	-	-	74	-26.19	276	135	H
* 4.89026	31.27	MAV1	34.2	-28.7	2.03	38.8	54	-15.2	-	-	276	135	H
* 7.31888	33.77	PK2	35.8	-23.2	0	46.37	-	-	74	-27.63	80	150	H
* 7.31953	24.13	MAV1	35.8	-23.2	2.03	38.76	54	-15.24	-	-	80	150	H
9.76566	32.09	PK2	37.2	-19.3	0	49.99	-	-	74	-24.01	0	150	H
* 12.19881	35.74	PK2	39	-19.7	0	55.04	-	-	74	-18.96	82	190	H
* 12.20117	24.74	MAV1	39	-19.7	2.03	46.07	54	-7.93	-	-	82	190	H
* 4.8801	41.71	PK2	34.2	-28.7	0	47.21	-	-	74	-26.79	220	178	V
* 4.88026	30.73	MAV1	34.2	-28.7	2.03	38.26	54	-15.74	-	-	220	178	V
* 7.3201	33.31	PK2	35.8	-23.2	0	45.91	-	-	74	-28.09	80	150	V
* 7.32028	23.62	MAV1	35.8	-23.2	2.03	38.25	54	-15.75	-	-	80	150	V
9.76208	30.91	PK2	37.2	-19.3	0	48.81	-	-	74	-25.19	0	150	V
* 12.19877	33.63	PK2	39	-19.7	0	52.93	-	-	74	-21.07	235	289	V
* 12.20116	23.12	MAV1	39	-19.7	2.03	44.45	54	-9.55	-	-	235	289	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

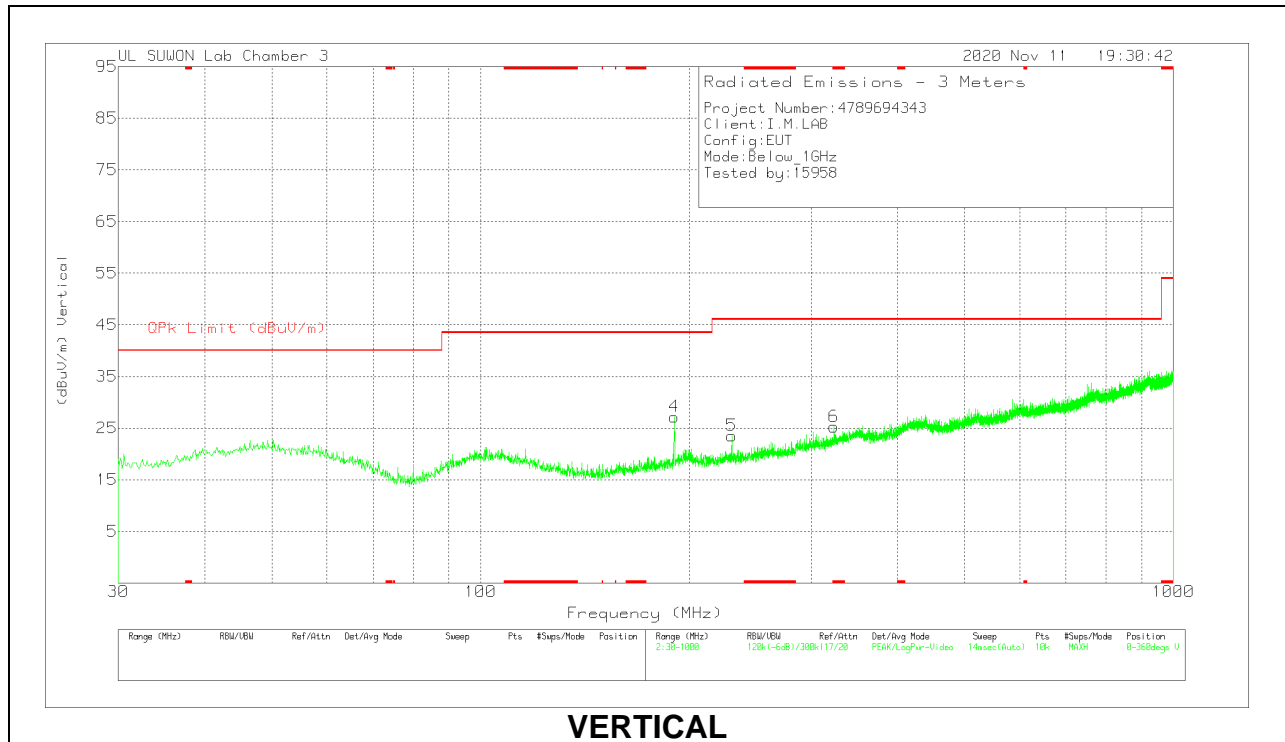
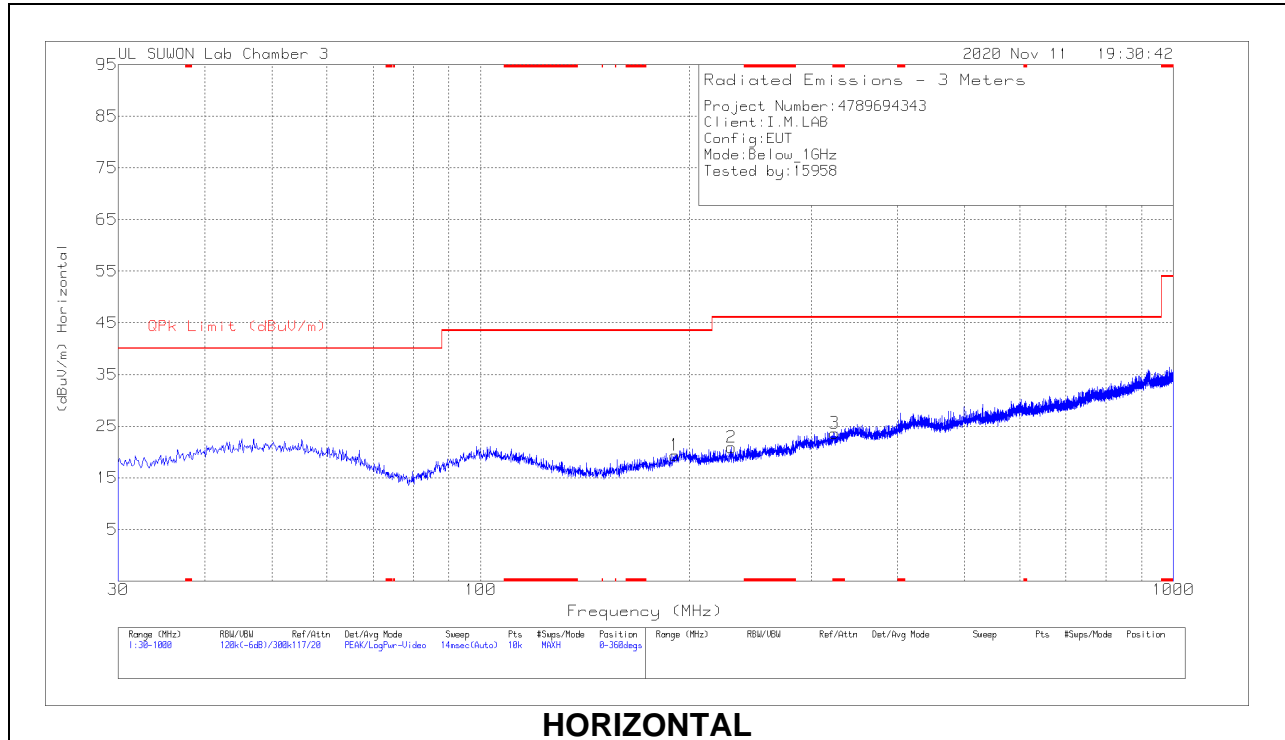
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_0020595_9	3GHz_HP(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.96044	42.45	PK2	34.2	-28.4	0	48.25	-	-	74	-25.75	312	301	H
* 4.95944	32.1	MAV1	34.2	-28.5	2.03	39.83	54	-14.17	-	-	312	301	H
* 7.4411	32.68	PK2	35.8	-23	0	45.48	-	-	74	-28.52	284	270	H
* 7.4393	23.58	MAV1	35.8	-23	2.03	38.41	54	-15.59	-	-	284	270	H
9.91764	31.5	PK2	37.5	-19.5	0	49.5	-	-	74	-24.5	260	290	H
* 12.40116	36.79	PK2	38.8	-20.1	0	55.49	-	-	74	-18.51	130	100	H
* 12.39882	25.71	MAV1	38.9	-20.1	2.03	46.54	54	-7.46	-	-	130	100	H
* 4.95938	42.74	PK2	34.2	-28.5	0	48.44	-	-	74	-25.56	297	281	V
* 4.96001	33.35	MAV1	34.2	-28.5	2.03	41.08	54	-12.92	-	-	297	281	V
* 7.44231	33.3	PK2	35.8	-23.1	0	46	-	-	74	-28	260	290	V
* 7.43977	23.85	MAV1	35.8	-23	2.03	38.68	54	-15.32	-	-	260	290	V
9.92238	31.33	PK2	37.5	-19.5	0	49.33	-	-	74	-24.67	280	260	V
* 12.39871	34.28	PK2	38.9	-20.1	0	53.08	-	-	74	-20.92	129	108	V
* 12.40101	23.31	MAV1	38.8	-20.1	2.03	44.04	54	-9.96	-	-	129	108	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 1 GHZ

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



Below 1GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163-845	Below_1G[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	190.7456	34.29	Pk		-31.3	19.39	43.52	-24.13	0-360	300	H
2	230.2286	34.19	Pk		-31	20.89	46.02	-25.13	0-360	200	H
3	* 324.1343	34.65	Pk		-30.7	23.65	46.02	-22.37	0-360	100	H
4	190.4545	42.1	Pk		-31.2	27.2	43.52	-16.32	0-360	300	V
5	230.5197	37.04	Pk		-31.2	23.54	46.02	-22.48	0-360	200	V
6	* 323.8433	36.38	Pk		-30.8	25.28	46.02	-20.74	0-360	100	V

Pk - Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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

This EUT is only supplied by DC power.

END OF TEST REPORT