CERTIFICATION TEST REPORT

Report Number. : 11836945-E2V2

Applicant	:	Google LLC. 1600 Amphitheatre Parkway Mountain View, CA 94043 U.S.A.
Model	:	H0B
FCC ID	:	A4R-H0B
IC	:	10395A-H0B
EUT Description	:	Multimedia Device
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C ISED RSS - 247 ISSUE 2

Date Of Issue:
October 25, 2017

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538, U.S.A.
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NVLAP LAB CODE 200065-0

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	10/13/17	Initial Release	---
V2	10/25/17	Updated sections 1 and 5.5	C. Susa

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Google LLC.
1600 Amphitheatre Parkway
Mountain View, CA 94043 U.S.A.

EUT DESCRIPTION: Multimedia Device

MODEL: H0B

SERIAL NUMBER: 7904M2Z2N6(radiated), 7904M2Z154(conducted)

DATE TESTED: September 11th, 2017 - October 10th, 2017

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Pass
ISED RSS-247 Issue 2	Pass
ISED RSS-GEN Issue 4	Pass

UL Verification Services Inc. 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 Verification Services Inc. 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 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 NVLAP, NIST, any agency of the Federal Government, or any agency of the U.S. government.

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2. 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, RSS-GEN Issue 4, and RSS-247 Issue 2.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 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.

47173 Benicia Street	47266 Benicia Street
☐ Chamber A	☐ Chamber D
☐ Chamber B	☐ Chamber E
☐ Chamber C	☒ Chamber F
	☐ Chamber G
	☐ Chamber H

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers A through C are covered under ISED company address code 2324B with site numbers 2324B -1 through 2324B-3, respectively. Chambers D through H are covered under Industry Canada company address code 22541 with site numbers 22541 -1 through 22541-5, respectively.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0 except for ISED RSS-247 Issue 2. The full scope of accreditation can be viewed at http://ts.nist.gov/standards/scopes/2000650.htm.

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4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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:

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

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:
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	3.84 dB
Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Radiated Disturbance,1000 to 18000 MHz	4.32 dB
Radiated Disturbance,18000 to 26000 MHz	4.45 dB
Radiated Disturbance,26000 to 40000 MHz	5.24 dB

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

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a multimedia device

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum output power as follows:

		Average		Peak	
Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)	Output Power (dBm)	Output Power (mW)
2402 - 2480	BLE	2.19	1.66	2.45	1.76

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes antenna, with a maximum gain of 4.7dBi

5.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was v1.29

The test utility software used during testing was QRCT v3.0.264.0.

5.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT set to transmit at the channel 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 two orientations Y and Z, it was determined that Y orientation was worst-case orientation. X orientation was not investigated due to the AC and I/O ports in the back of the EUT. Therefore, all final radiated testing was performed with the EUT in Y orientation.

All measurements were performed with the AC plugged into a power source.

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

BLE: 1 Mbps.

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5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List			
Description	**Manufacturer**	**Model**	**Serial Number**
AC Adapter	HP	HSTNN-LA40	WDUV0B3U8HK1Y
Laptop	HP	11-d001ax	5CD51643JG
USB Ethernet Adapter	Linksys	USB3GIG	15710S05701719
USB Hub	CGC	27402	NSN

I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	2-Prong	unshielded	2	
2	USB	1	USB	unshielded	2.5	USB serial cable
3	Ethernet	1	RJ45	unshielded	1	

TEST SETUP

The EUT is connected to a test laptop. Test software exercises the radio.

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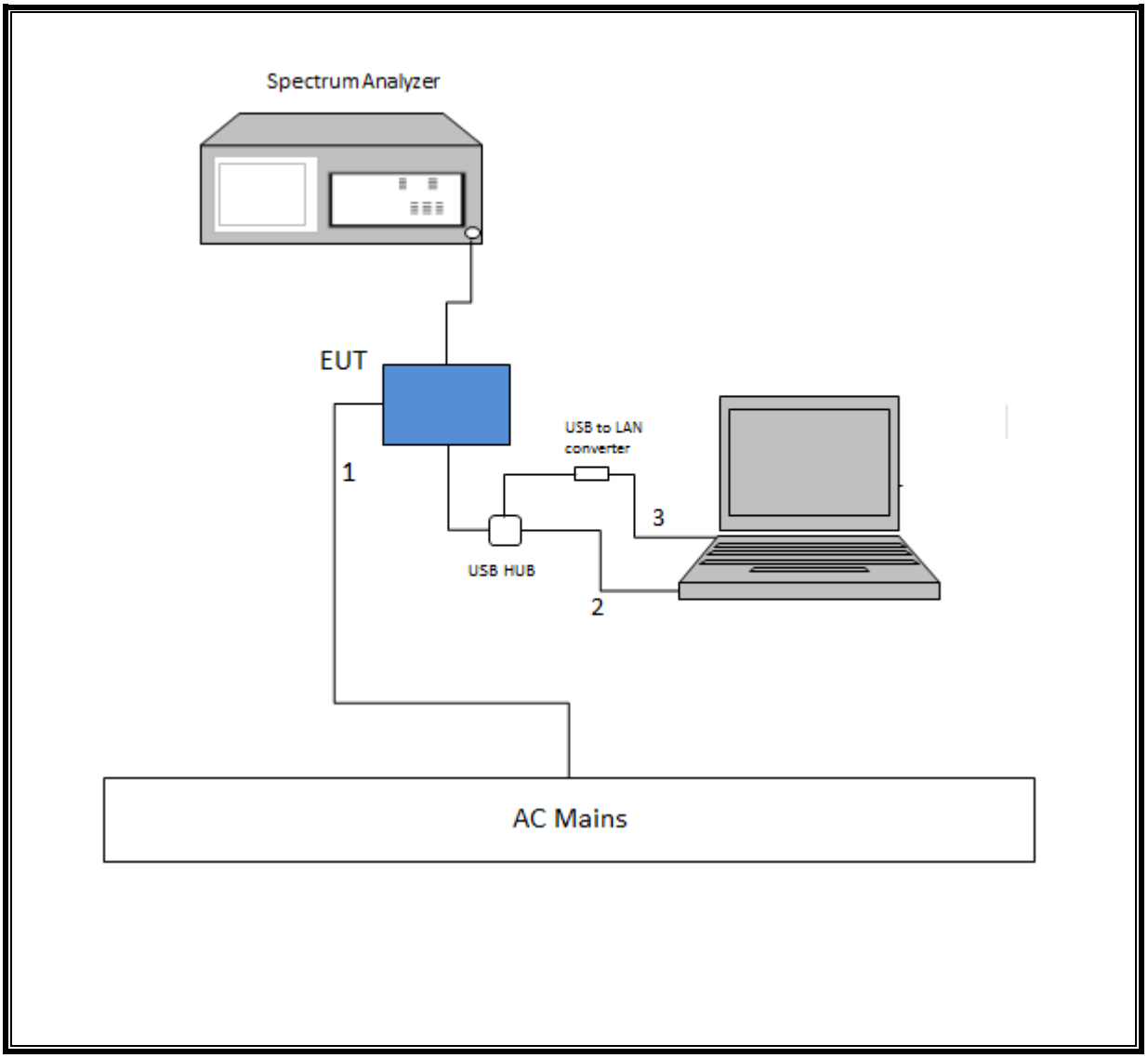
SETUP DIAGRAM FOR ANTENNA PORT CONDUCTED TESTS



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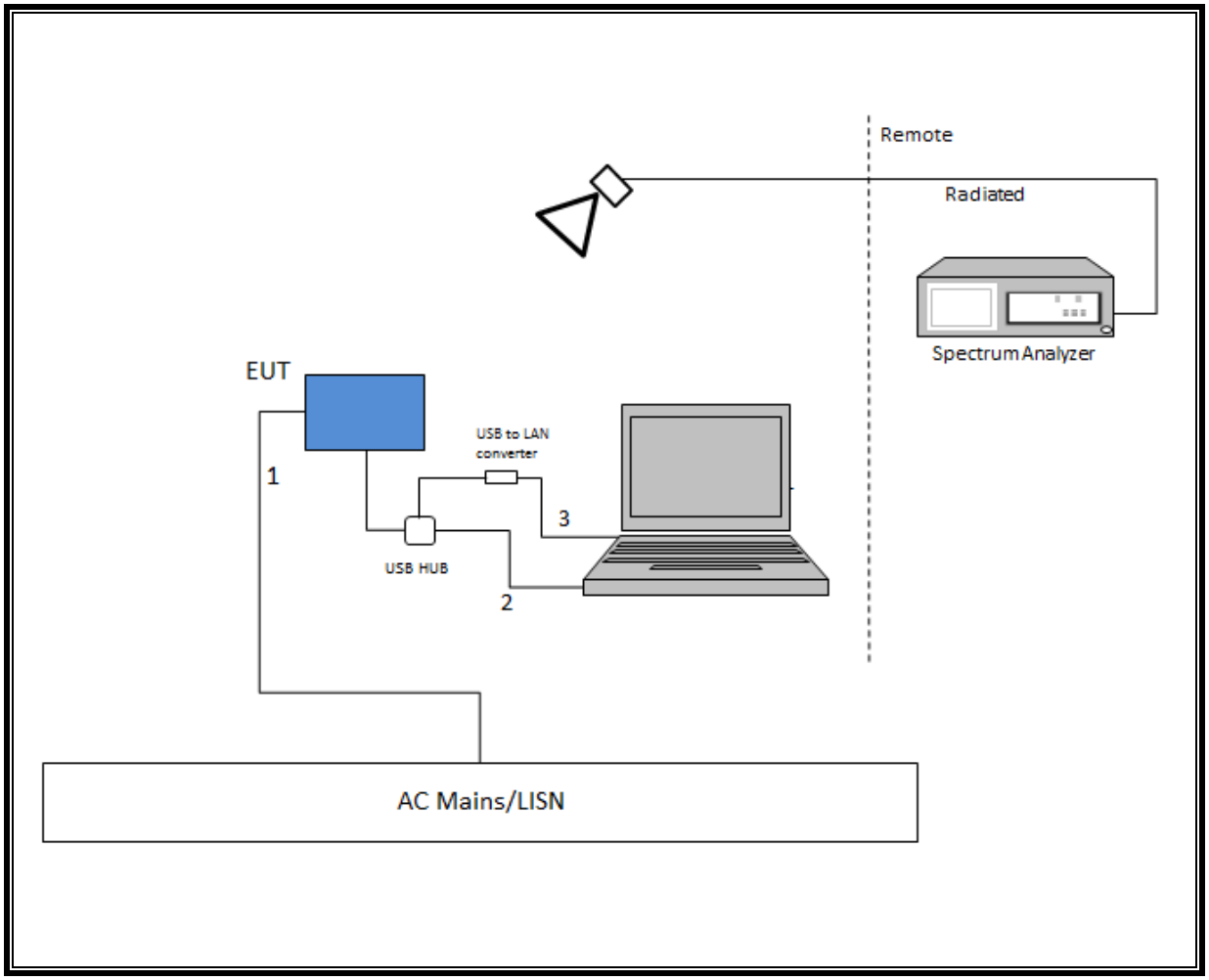
SETUP DIAGRAM FOR RADIATED TESTS



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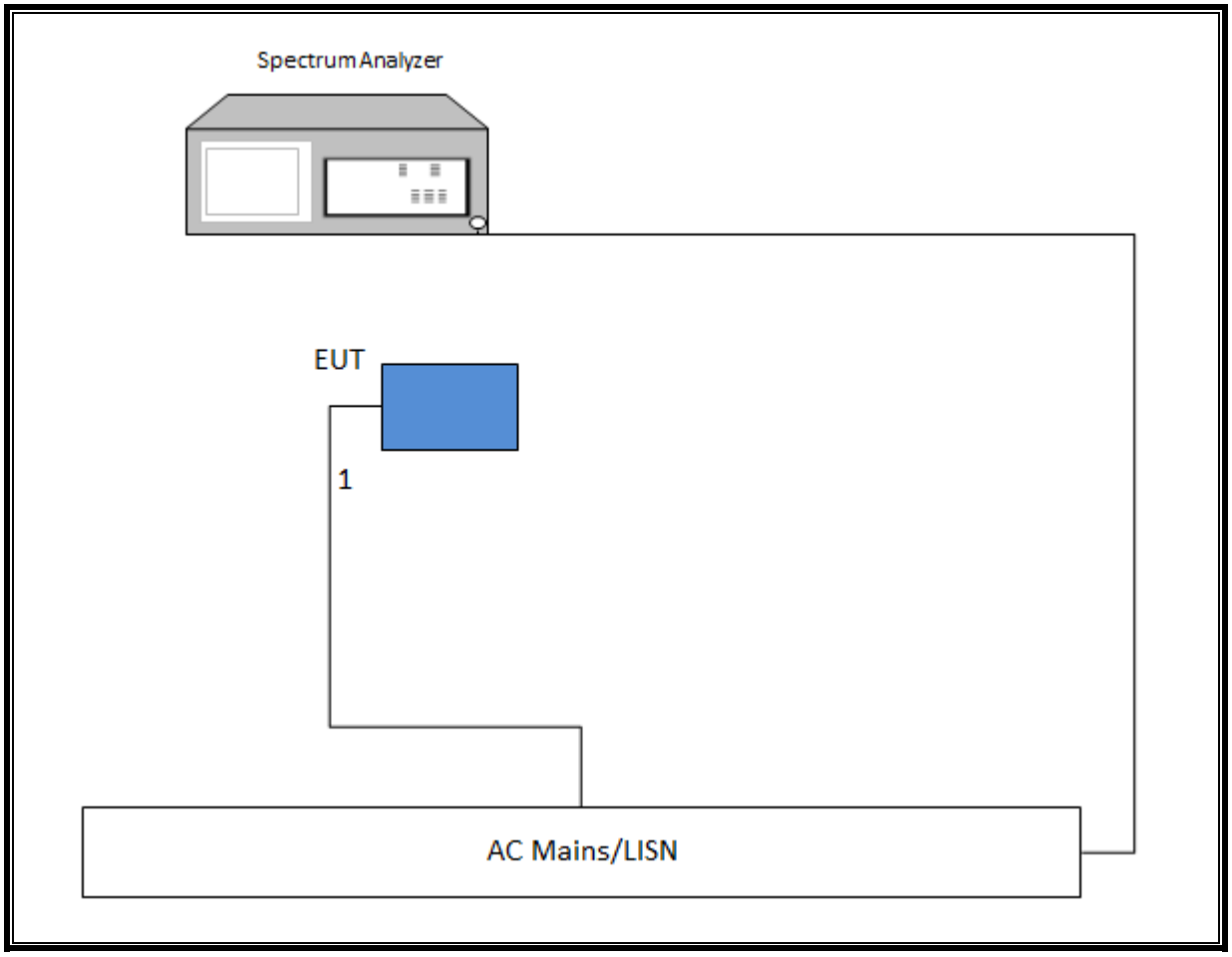
SETUP DIAGRAM FOR LINE CONDUCTED TEST



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6. TEST AND MEASUREMENT EQUIPMENT

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

Description	Manufacturer	Model	ID Num	Cal Due	Last Cal
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	T119	03/28/18	03/28/18
RF Amplifier, 1-18GHz	MITEQ	AFS42-00101800-25-S-42	T742	01/25/18	01/25/17
Spectrum Analyzer	Keysight	N9030A	T1113	12/20/17	12/20/16
High Pass Filter 3GHz	Micro-Tronics	HPM17543	T427	01/25/18	01/25/17
Spectrum Analyzer	Keysight	N9030A	T1210	07/17/18	07/17/17
Power Meter	Keysight	N1911A	T229	08/14/18	08/14/17
Power Sensor	Keysight	N1921A	T1225	03/29/18	03/29/17
EMI Receiver	Rohde & Schwarz	ESR	T1436	01/06/18	01/06/17
LISN	Fischer Custom Communications	FCC-LISN-50/250-25-2-01	T1310	06/15/18	06/15/17
Antenna Horn, 18-26GHz	ARA	MWH-1826	T89	01/04/18	01/04/17
RF Preamplifier, 1-26GHz	Agilent	8449B	T404	07/23/18	07/23/17
Spectrum Analyzer	Keysight	N9030A	T1454	12/15/18	12/15/17
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	10/11/17	10/11/16
Rf Preamplifier, 10kHz – 1GHz	Sonoma	310N	T286	06/02/18	06/02/17
Spectrum Analyzer	Keysight	N9030A	T340	12/14/18	12/14/17

Test Software List			
Description	**Manufacturer**	**Model**	**Version**
Radiated Software	UL	UL EMC	Ver 9.5, Dec 01, 2016
Conducted Emissions Software	UL	UL EMC	Ver 9.5, May 26, 2015

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7. MEASUREMENT METHODS

On Time and Duty Cycle: KDB 558074 D01 v04, Section 6.

6 dB BW: KDB 558074 D01 v04, Section 8.1.

Output Power: KDB 558074 D01 v04, Section 9.1.3.

Power Spectral Density: KDB 558074 D01 v04, Section 10.2.

Out-of-band emissions in non-restricted bands: KDB 558074 D01 v04, Section 11.0.

Out-of-band emissions in restricted bands: KDB 558074 D01 v04, Section 12.1.

Band-edge: KDB 558074 D01 v04, Section 12.1.

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

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8. ANTENNA PORT TEST RESULTS

8.1. ON TIME, 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/T Minimum VBW (kHz)
BLE	0.408	0.625	0.652	65.25%	1.85	2.451

LOW CHANNEL

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8.2. 6 dB BANDWIDTH

LIMITS

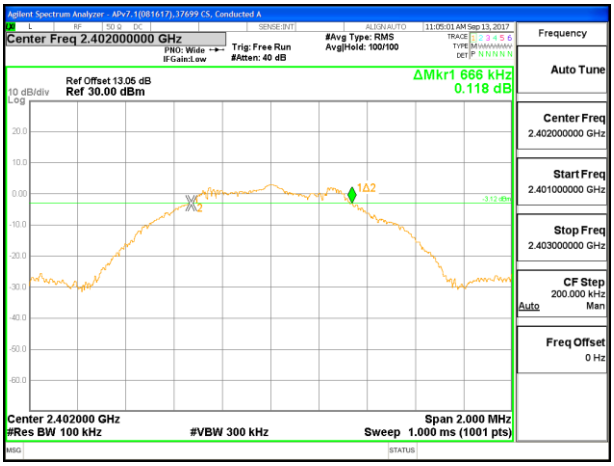
FCC §15.247 (a) (2)

RSS-247 (5.2) (a)

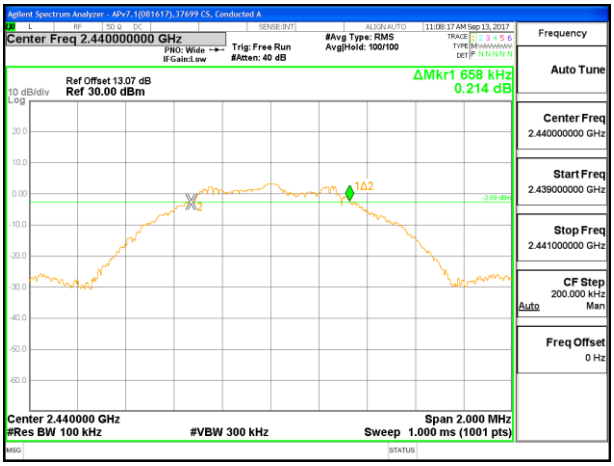
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

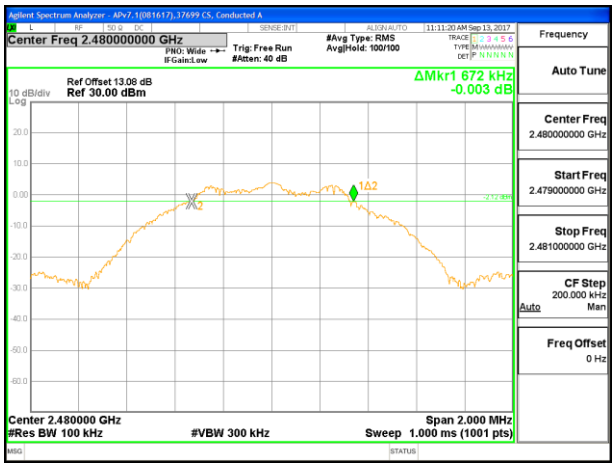
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.6660	0.5
Middle	2440	0.6580	0.5
High	2480	0.6720	0.5



LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

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8.3. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

Test Procedure

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth and to 1% of the span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0592
Middle	2440	1.0602
High	2480	1.0591

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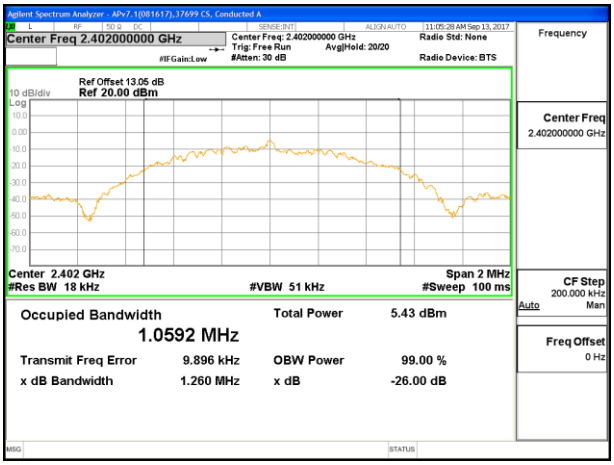
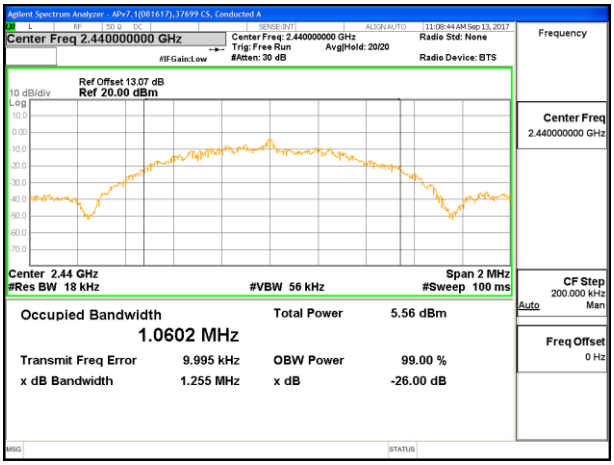
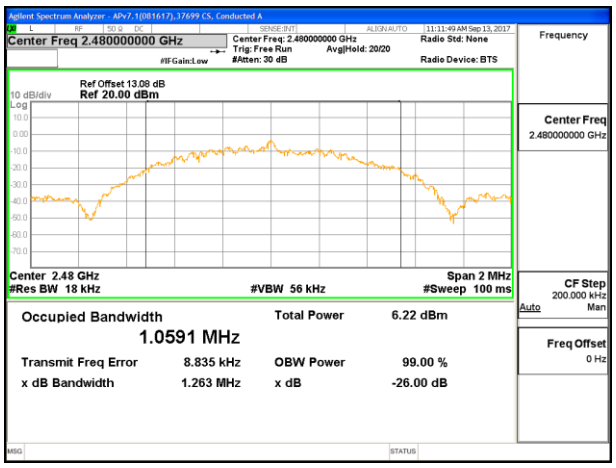


LOW CHANNEL



MID CHANNEL



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8.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the power meter to allow for a gated average reading of power.

RESULTS

TEST ENGINEER:	37699	**Date:**	10/04/17

Channel	Frequency (MHz)	AV Power (dBm)
Low	2402	1.68
Middle	2440	1.96
High	2480	2.19

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8.5. OUTPUT POWER

LIMITS

FCC §15.247 (b)

RSS-247 (5.4) (d)

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

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the power meter to allow for a gated peak reading of power.

RESULTS

TEST ENGINEER:	37699	Date:	10/04/17

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	2.15	30	-27.850
Middle	2440	2.44	30	-27.560
High	2480	2.45	30	-27.550

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8.6. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC 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

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-11.90	8	-19.90
Middle	2440	-11.34	8	-19.34
High	2480	-10.88	8	-18.88

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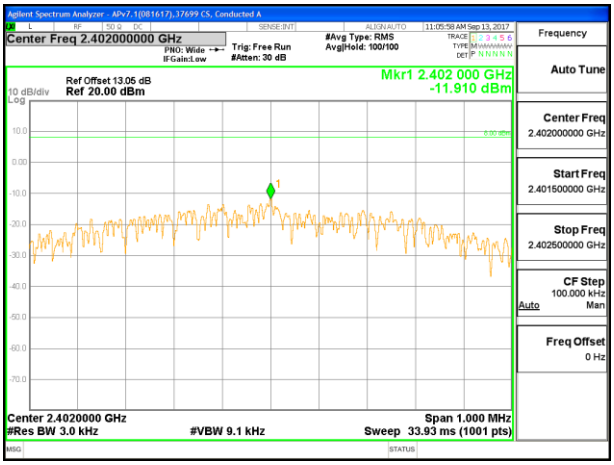
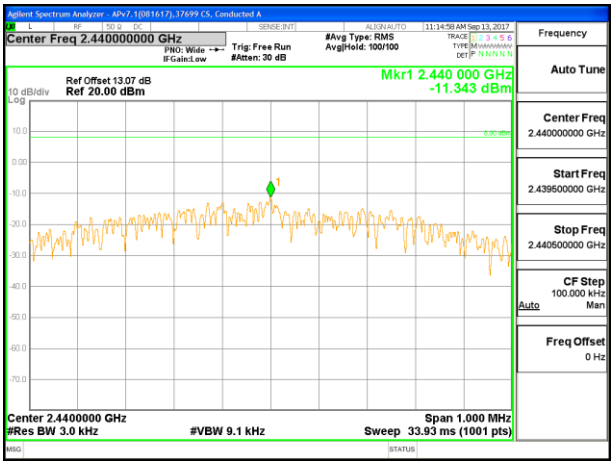
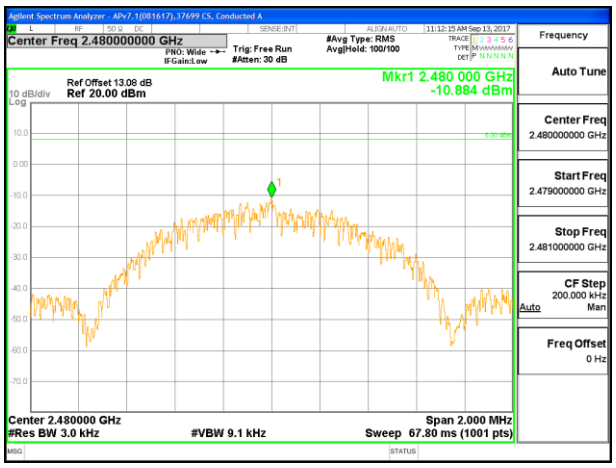


LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

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8.7. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-247 (5.5)

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

RESULTS

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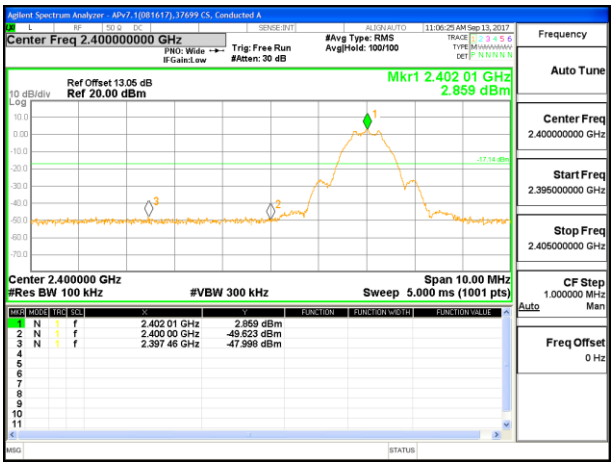
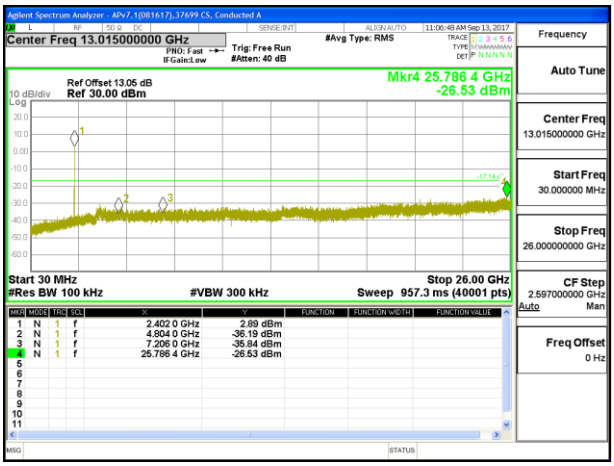
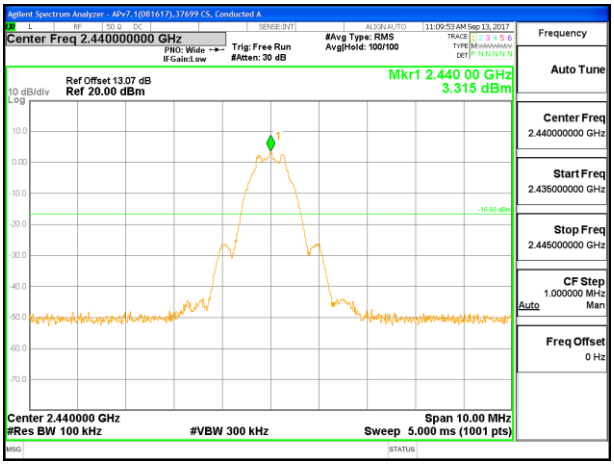


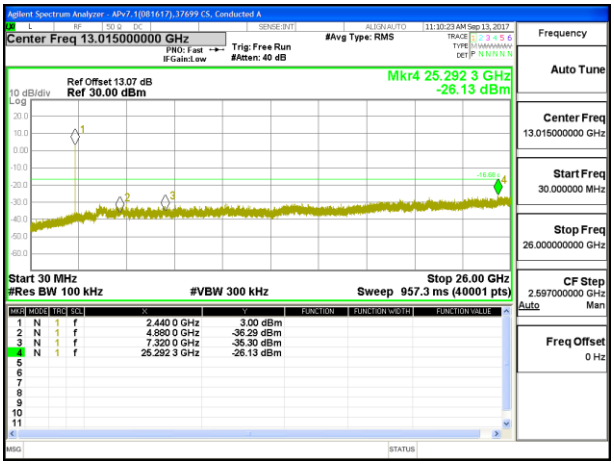
LOW CHANNEL BANDEDGE



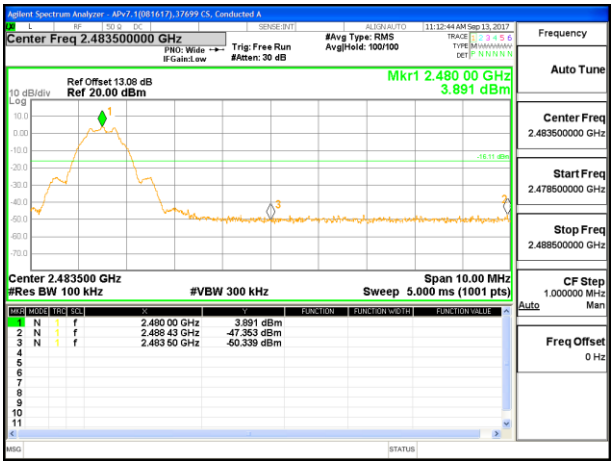
OUT-OF-BAND LOW CHANNEL



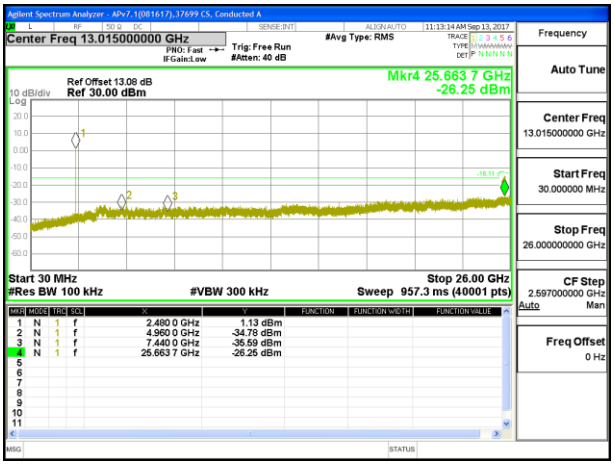
MID CHANNEL BANDEDGE



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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9. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

RSS-GEN, Section 8.9 and 8.10.

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
0.009-0.490	2400/F(kHz) @ 300 m	-
0.490-1.705	24000/F(kHz) @ 30 m	-
1.705 - 30	30 @ 30m	-
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

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

For final measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and as applicable for average measurements.

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

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

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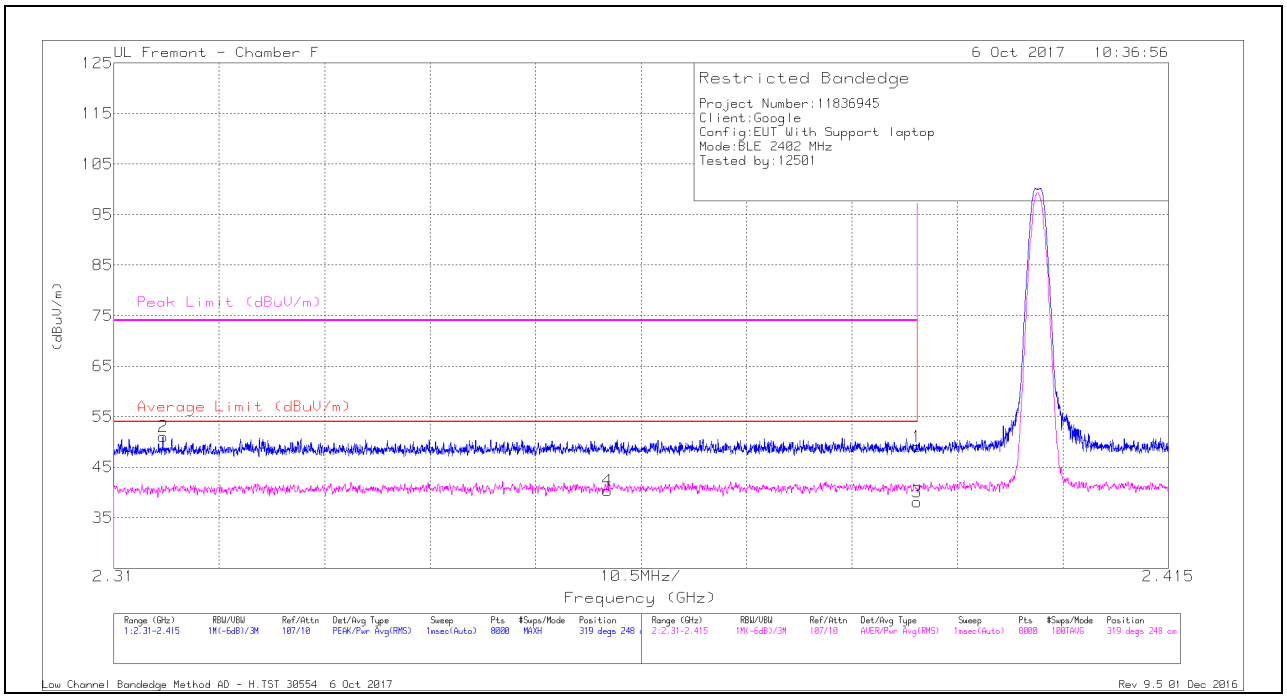
9.1. TRANSMITTER ABOVE 1 GHz

9.1.1. BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	* 2.39	38.19	Pk	31.9	-21	0	49.09	-	-	74	-24.91	319	248	H
2	* 2.315	40.46	Pk	31.6	-21	0	51.06	-	-	74	-22.94	319	248	H
3	* 2.39	27.2	RMS	31.9	-21	1.85	39.95	54	-14.05	-	-	319	248	H
4	* 2.359	29.52	RMS	31.8	-21	1.85	42.17	54	-11.83	-	-	319	248	H

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

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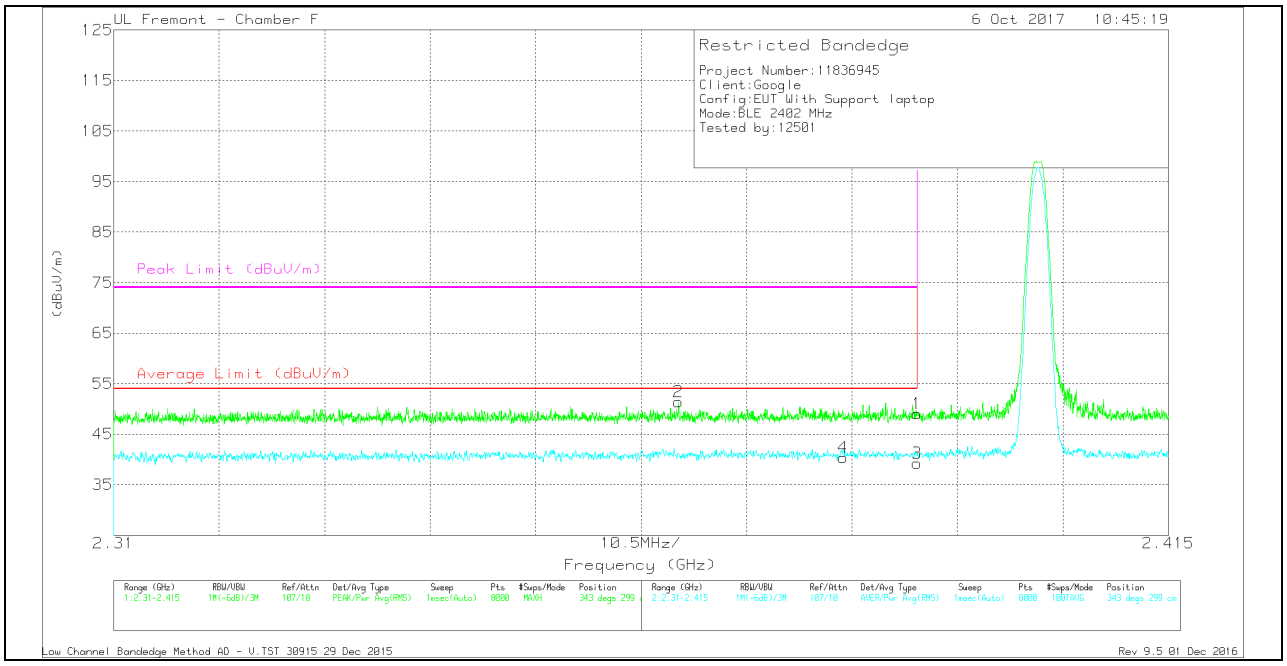
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	* 2.39	38.16	Pk	31.9	-21	0	49.06	-	-	74	-24.94	343	299	V
2	* 2.366	40.46	Pk	31.8	-20.9	0	51.36	-	-	74	-22.64	343	299	V
3	* 2.39	28.31	RMS	31.9	-21	1.85	41.06	54	-12.94	-	-	343	299	V
4	* 2.383	29.42	RMS	31.8	-20.9	1.85	42.17	54	-11.83	-	-	343	299	V

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

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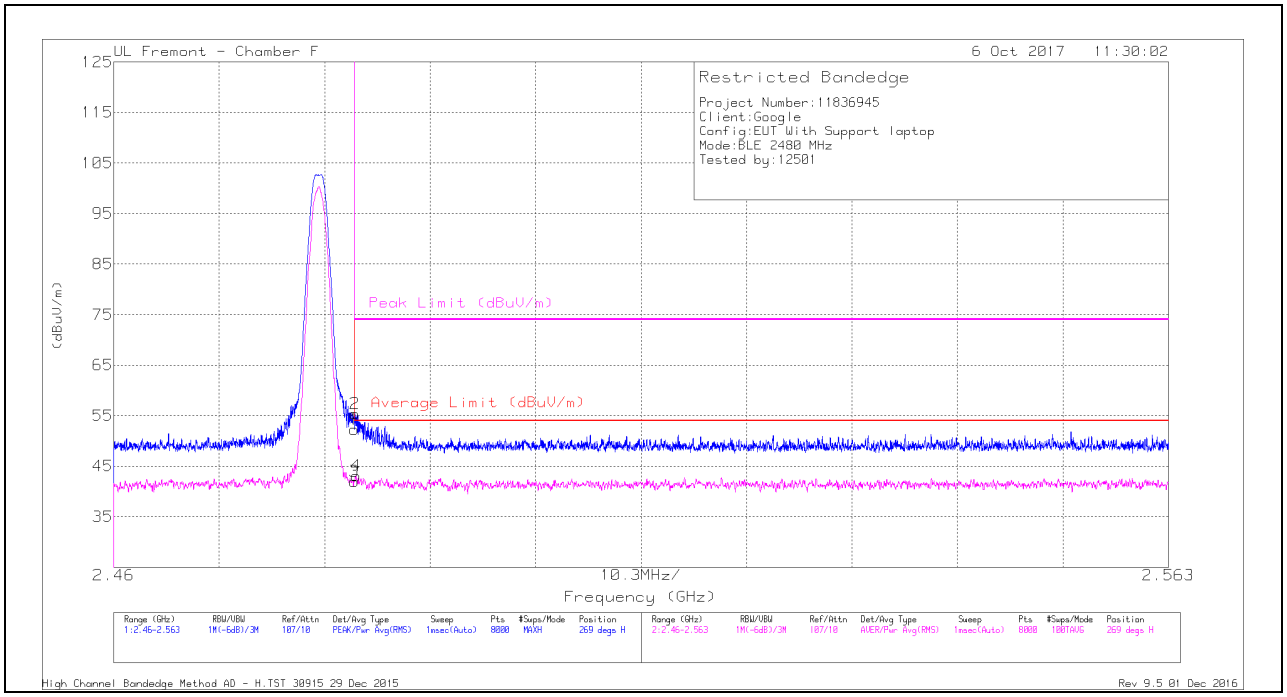
9.1.2. BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	* 2.484	41.14	Pk	32.1	-21	0	52.24	-	-	74	-21.76	269	307	H
2	* 2.484	44.26	Pk	32.1	-21	0	55.36	-	-	74	-18.64	269	307	H
3	* 2.484	28.97	RMS	32.1	-21	1.85	41.92	54	-12.08	-	-	269	307	H
4	* 2.484	30.15	RMS	32.1	-21	1.85	43.1	54	-10.9	-	-	269	307	H

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

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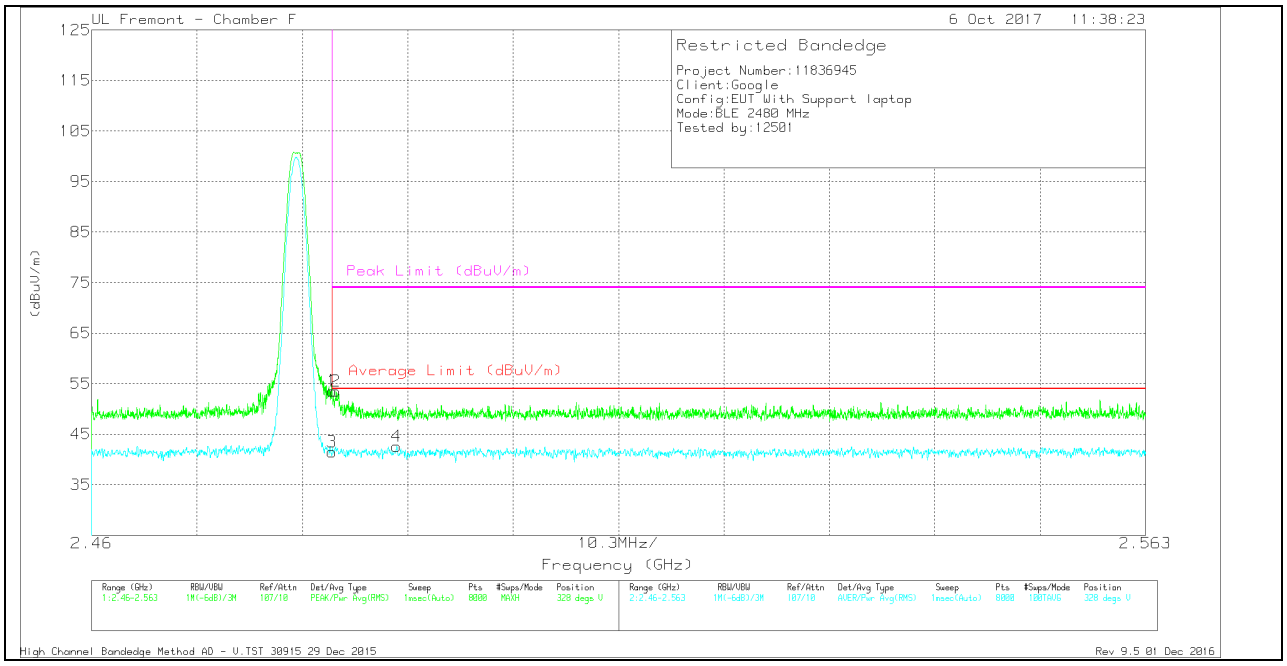
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	* 2.484	42.48	Pk	32.1	-21	0	53.58	-	-	74	-20.42	328	351	V
2	* 2.484	42.31	Pk	32.2	-21	0	53.51	-	-	74	-20.49	328	351	V
3	* 2.484	28.58	RMS	32.1	-21	1.85	41.53	54	-12.47	-	-	328	351	V
4	* 2.49	29.64	RMS	32.2	-21.1	1.85	42.59	54	-11.41	-	-	328	351	V

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

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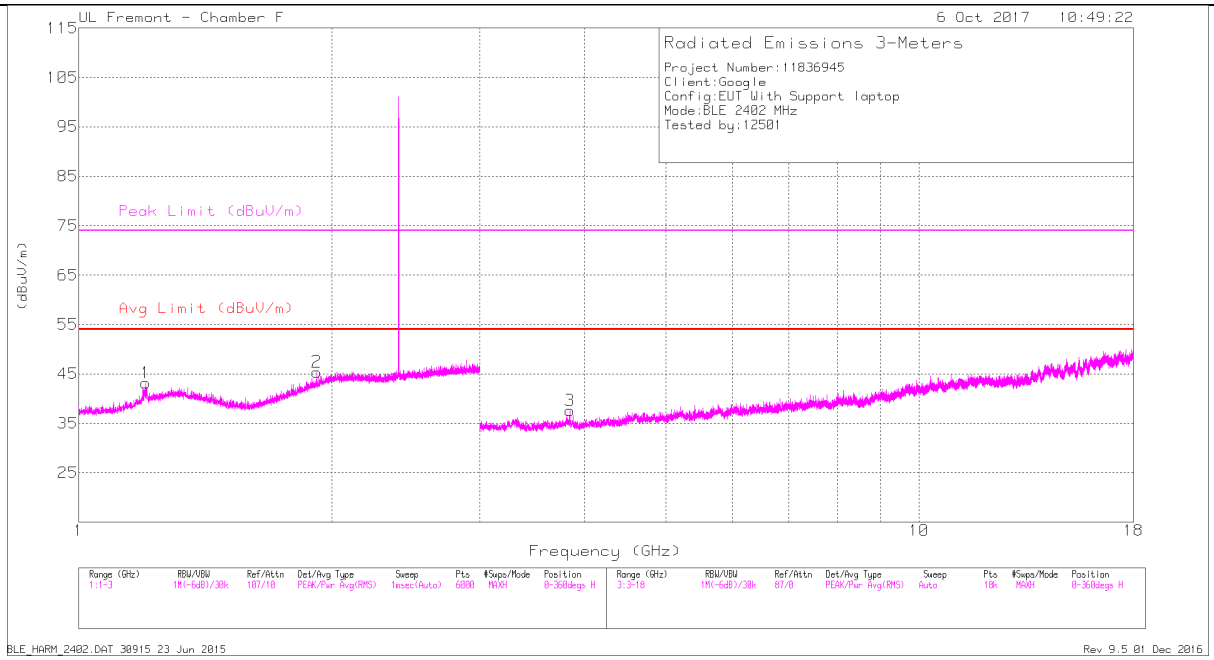
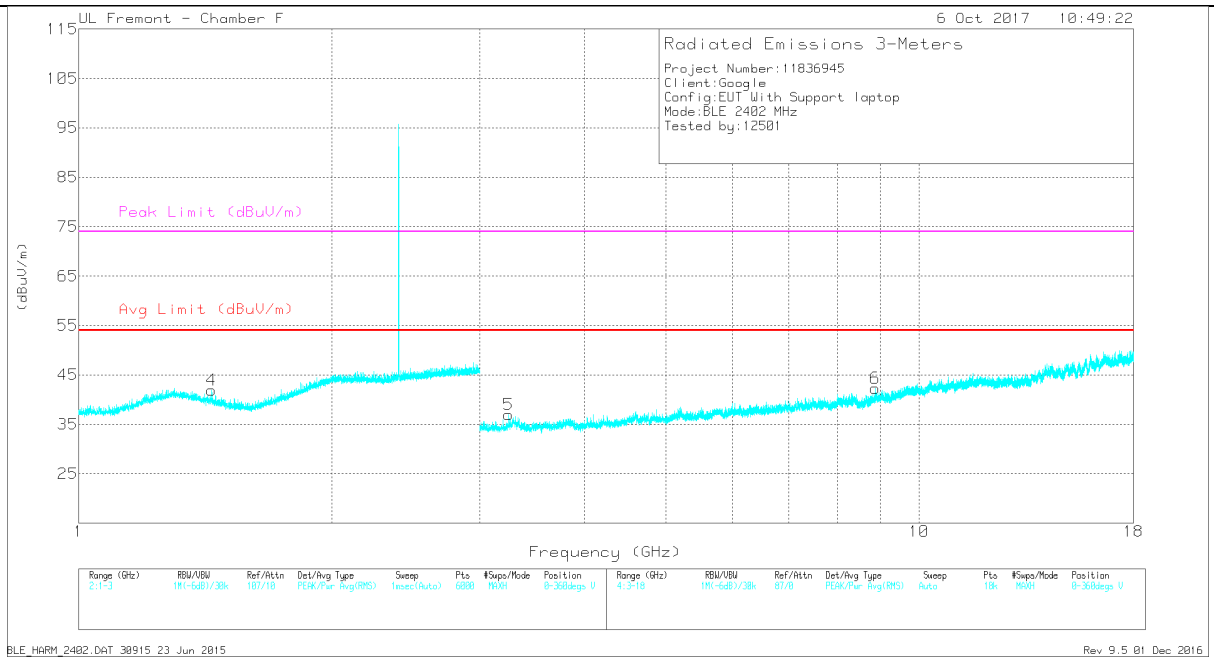
9.1.3. HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/ 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	* 1.202	43.51	PK2	28.9	-22.5	0	49.91	-	-	74	-24.09	277	100	H
	* 1.203	28.65	MAv1	28.9	-22.5	1.85	36.9	54	-17.1	-	-	277	100	H
2	1.92	39.97	PK2	31.4	-21.4	0	49.97	-	-	74	-24.03	293	143	H
4	* 1.44	41.14	PK2	28.5	-22	0	47.64	-	-	74	-26.36	106	103	V
	* 1.44	29.32	MAV1	28.5	-22	1.85	37.67	54	-16.33	-	-	106	103	V
3	* 3.84	39.39	PK2	33.3	-28.3	0	44.39	-	-	74	-29.61	126	213	H
	* 3.84	31.63	MAV1	33.3	-28.3	1.85	38.48	54	-15.52	-	-	126	213	H
5	3.248	36.16	PK2	33.3	-29	0	40.46	-	-	74	-33.54	188	248	V
6	8.871	34.21	PK2	36.5	-23.4	0	47.31	-	-	74	-26.69	261	265	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

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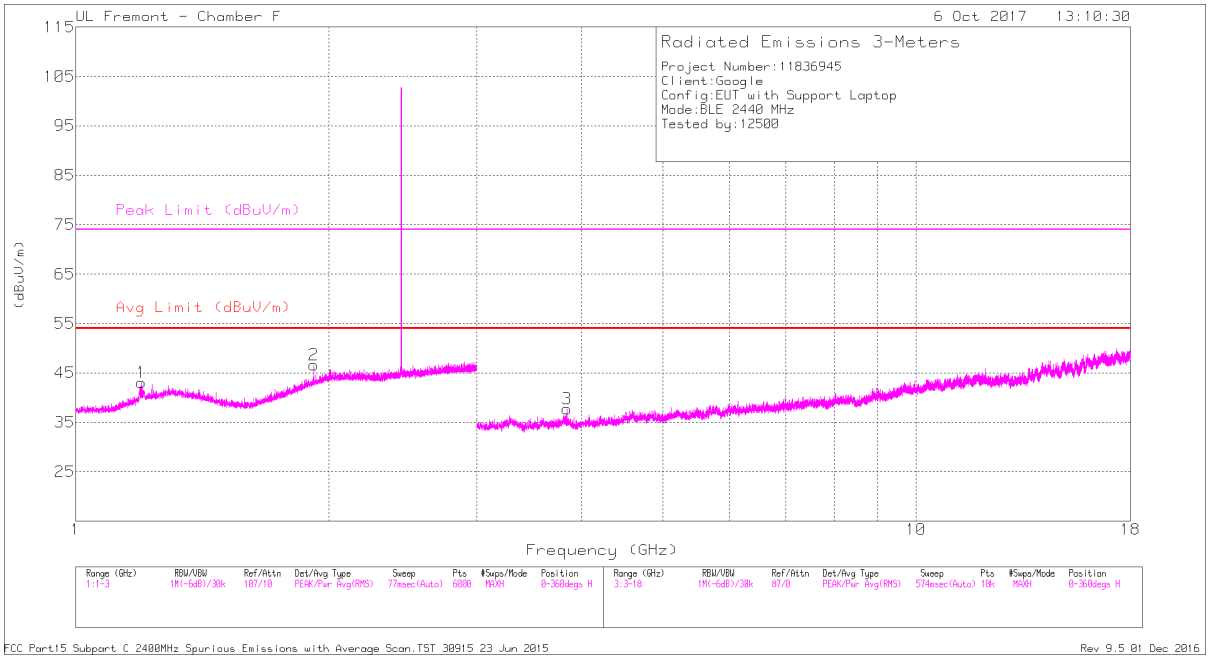
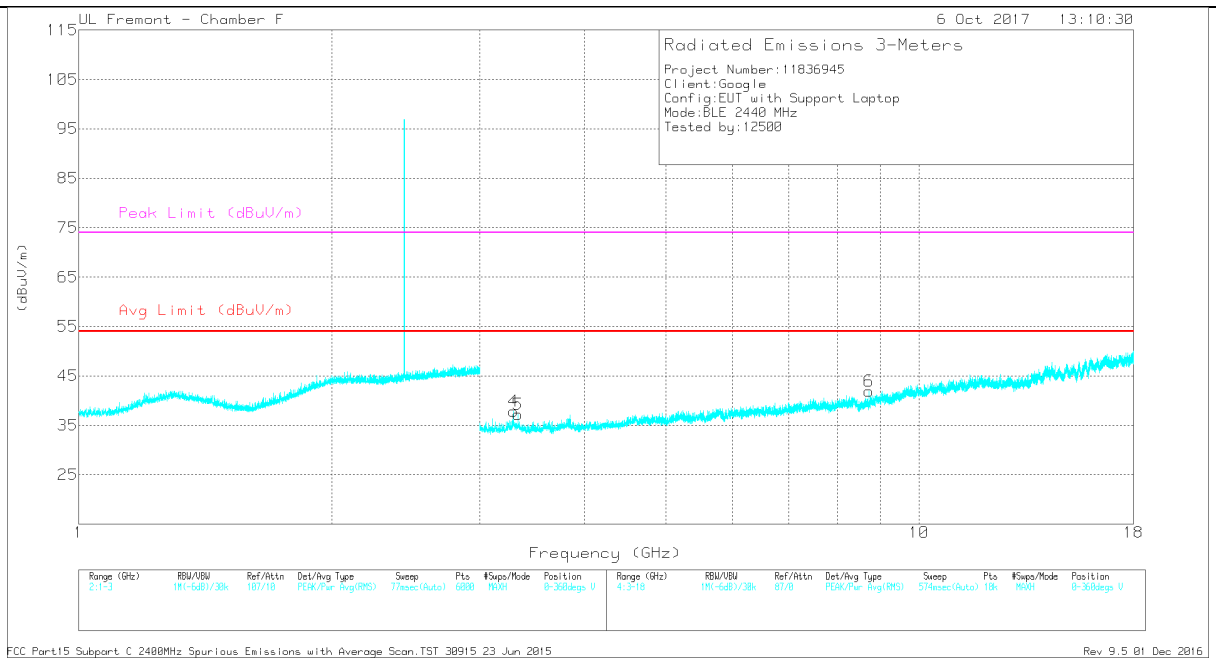
MID CHANNEL, RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/ 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	* 1.198	40.64	PK2	28.8	-22.5	0	46.94	-	-	74	-27.06	200	138	H
	* 1.197	28.18	MAV1	28.8	-22.5	1.85	36.33	54	-17.67	-	-	200	138	H
2	1.92	40.72	PK2	31.4	-21.4	0	50.72	-	-	74	-23.28	325	103	H
3	* 3.84	39.07	PK2	33.3	-28.3	0	44.07	-	-	74	-29.93	276	101	H
	* 3.84	29.92	MAV1	33.3	-28.3	1.85	36.77	54	-17.23	-	-	276	101	H
5	* 3.333	38.49	PK2	33.5	-29	0	42.99	-	-	74	-31.01	284	148	V
	* 3.333	29.49	MAV1	33.5	-29	1.85	35.84	54	-18.16	-	-	284	148	V
4	3.291	36.05	PK2	33.7	-28.8	0	40.95	-	-	74	-33.05	101	153	V
6	8.723	31.85	PK2	36.2	-23.4	0	44.65	-	-	74	-29.35	260	215	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

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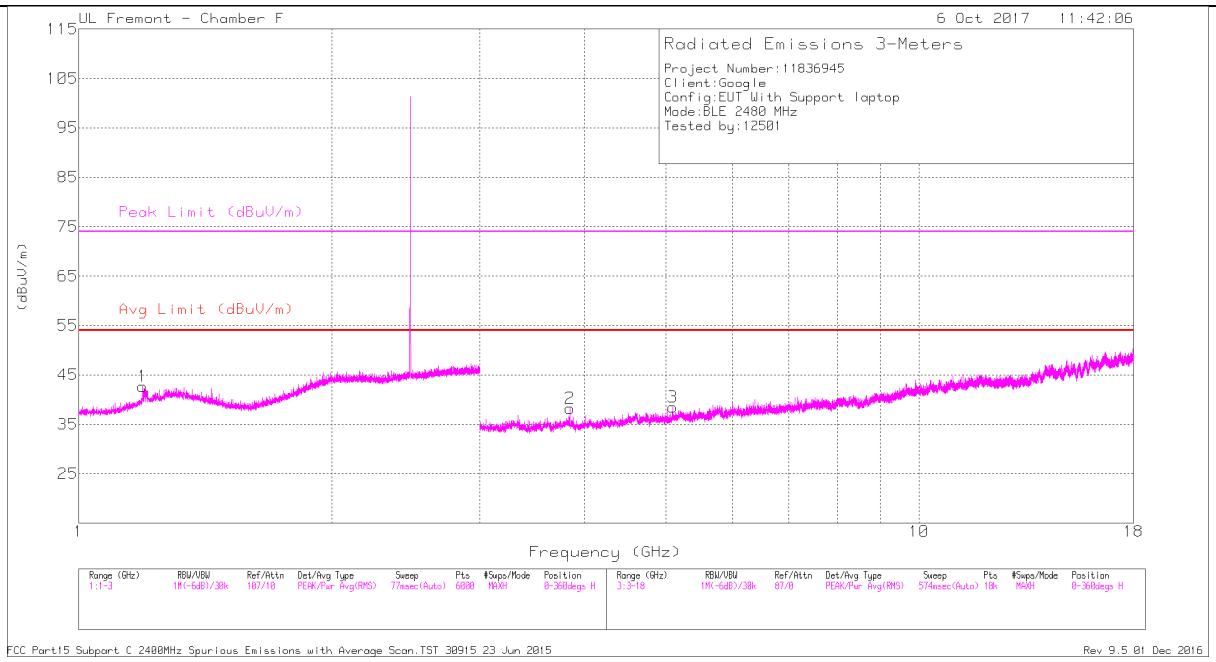
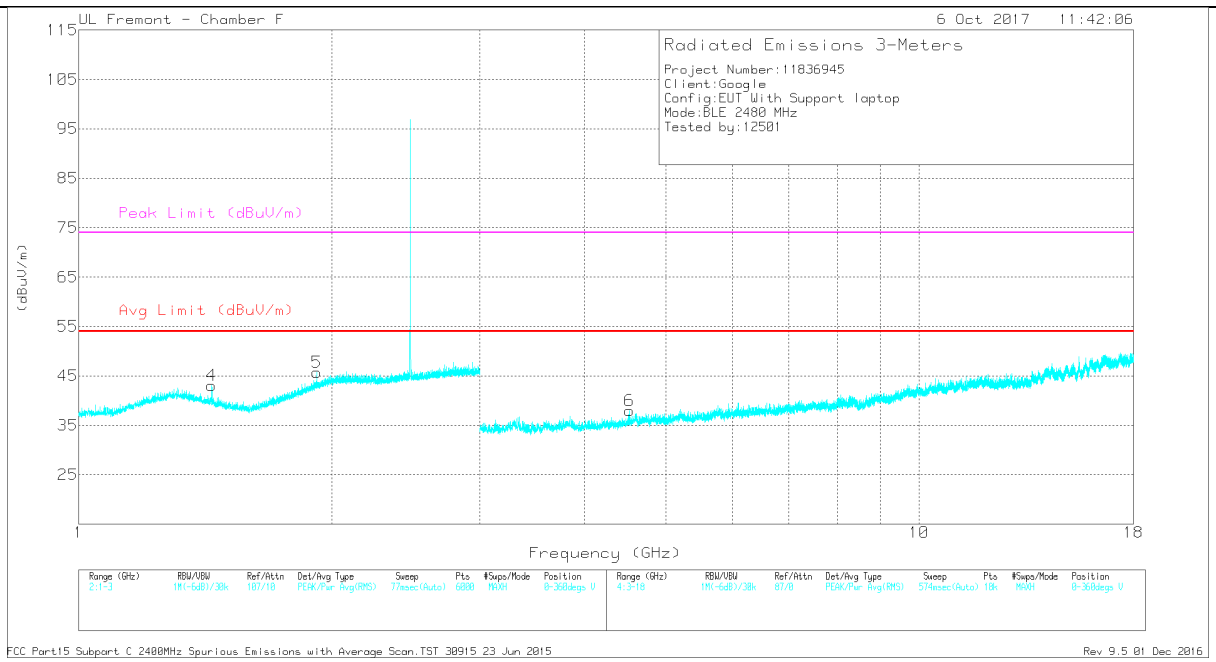
HIGH CHANNEL, RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/ 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	* 1.192	41.61	PK2	28.7	-22.5	0	47.81	-	-	74	-26.19	304	140	H
	* 1.191	28.25	MAV1	28.7	-22.5	1.85	36.3	54	-17.7	-	-	304	140	H
4	* 1.44	41.71	PK2	28.5	-22	0	48.21	-	-	74	-25.79	108	100	V
	* 1.44	30.44	MAV1	28.5	-22	1.85	38.79	54	-15.21	-	-	108	100	V
5	1.92	40.64	PK2	31.4	-21.4	0	50.64	-	-	74	-23.36	300	176	V
2	* 3.84	39.88	PK2	33.3	-28.3	0	44.88	-	-	74	-29.12	175	161	H
	* 3.84	33.49	MAV1	33.3	-28.3	1.85	40.34	54	-13.66	-	-	175	161	H
3	* 5.088	36.75	PK2	34.3	-27.4	0	43.65	-	-	74	-30.35	225	242	H
	* 5.088	23.84	MAV1	34.3	-27.4	1.85	32.59	54	-21.41	-	-	225	242	H
6	* 4.523	36.2	PK2	34.1	-28	0	42.3	-	-	74	-31.7	121	242	V
	* 4.522	24.4	MAV1	34.1	-28	1.85	32.35	54	-21.65	-	-	121	242	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

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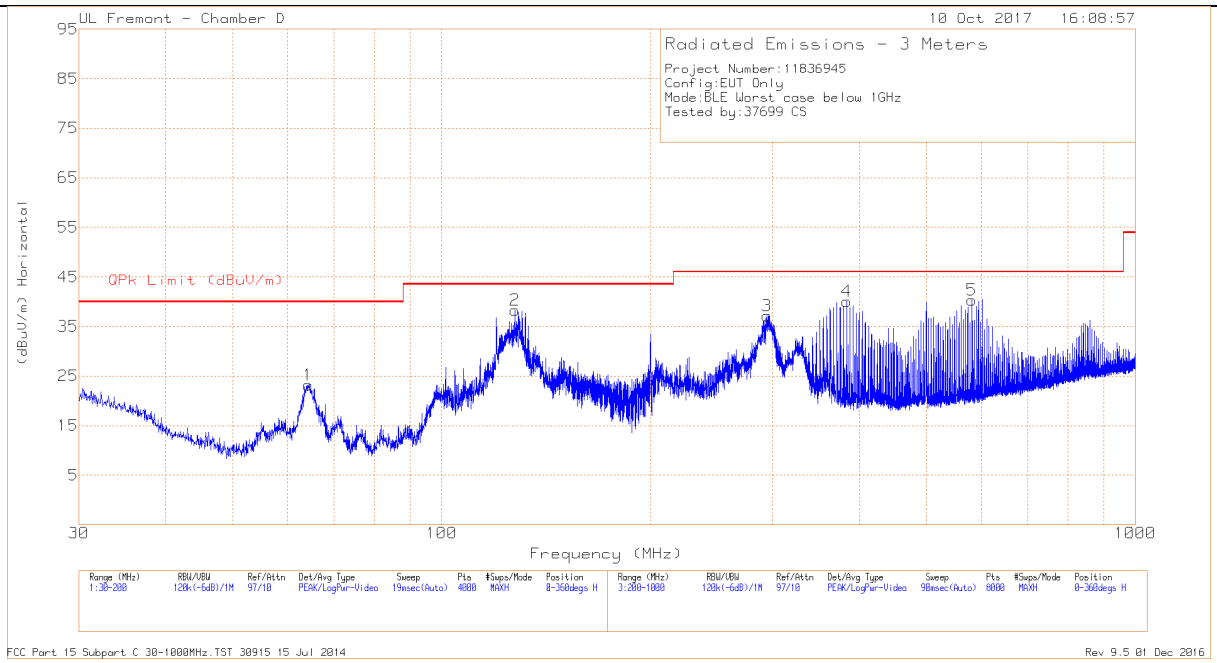
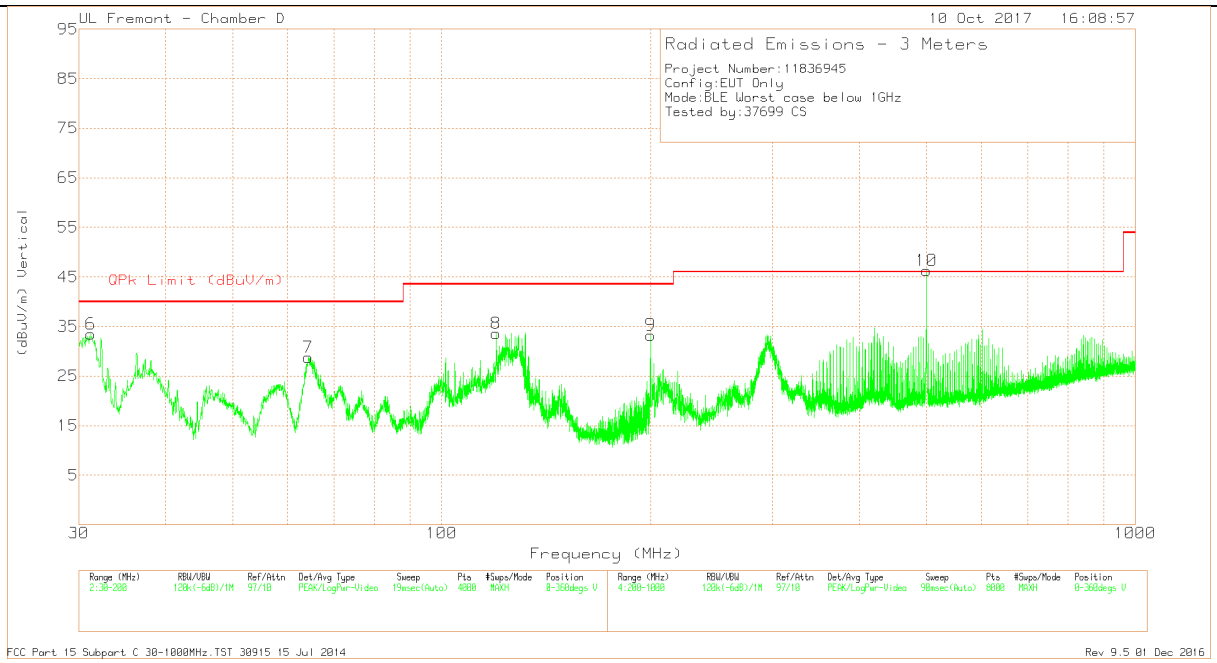
9.2. WORST-CASE BELOW 1 GHz



HORIZONTAL



VERTICAL

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Below 1GHz DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 127.4777	48.63	Qp	18.1	-31.2	35.53	43.52	-7.99	76	199	H
4	383.7239	48.18	Qp	19.3	-30	37.48	46.02	-8.54	325	100	H
10	500.039	51.43	Qp	21.7	-29.6	43.53	46.02	-2.49	345	100	V
5	581.7496	45.71	Qp	22.6	-29.5	38.81	46.02	-7.21	345	100	H
8	* 119.7832	46.79	Pk	18	-31.2	33.59	43.52	-9.93	0-360	100	V
6	31.2328	40.92	Pk	24.4	-31.9	33.42	40	-6.58	0-360	100	V
7	64.2214	48.68	Pk	11.7	-31.6	28.78	40	-11.22	0-360	100	V
1	64.2639	43.06	Pk	11.7	-31.6	23.16	40	-16.84	0-360	199	H
9	200	47.38	Pk	16.7	-30.8	33.28	43.52	-10.24	0-360	199	V
3	294.2122	50.37	Pk	17.2	-30.4	37.17	46.02	-8.85	0-360	101	H

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

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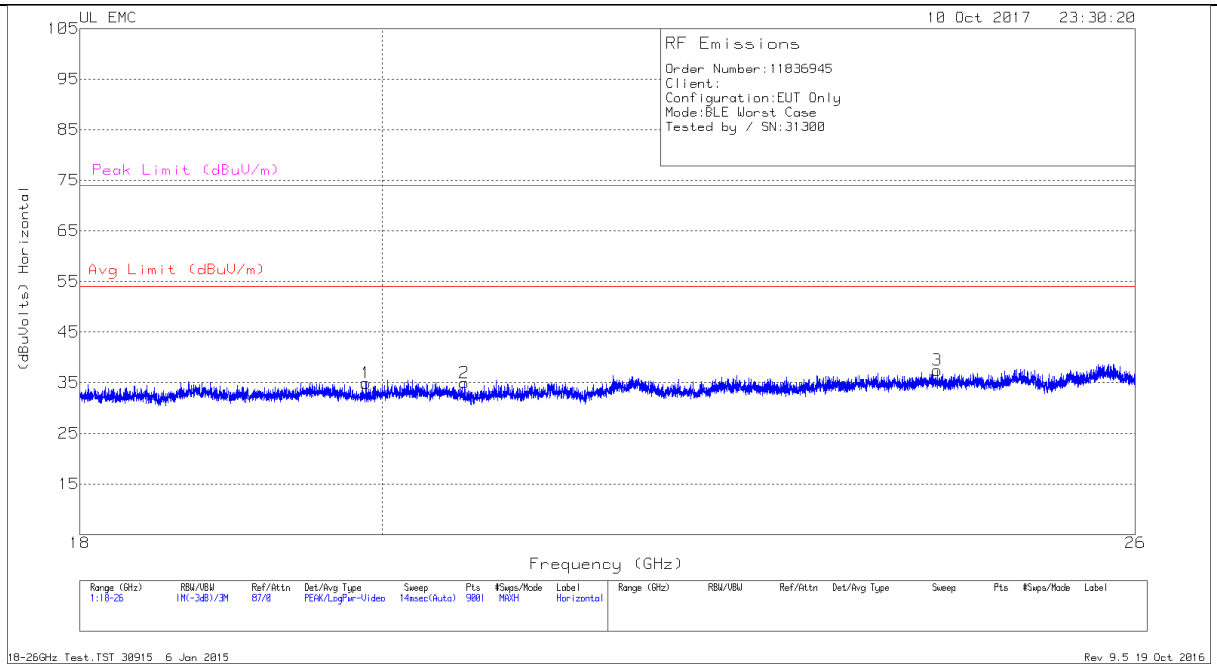
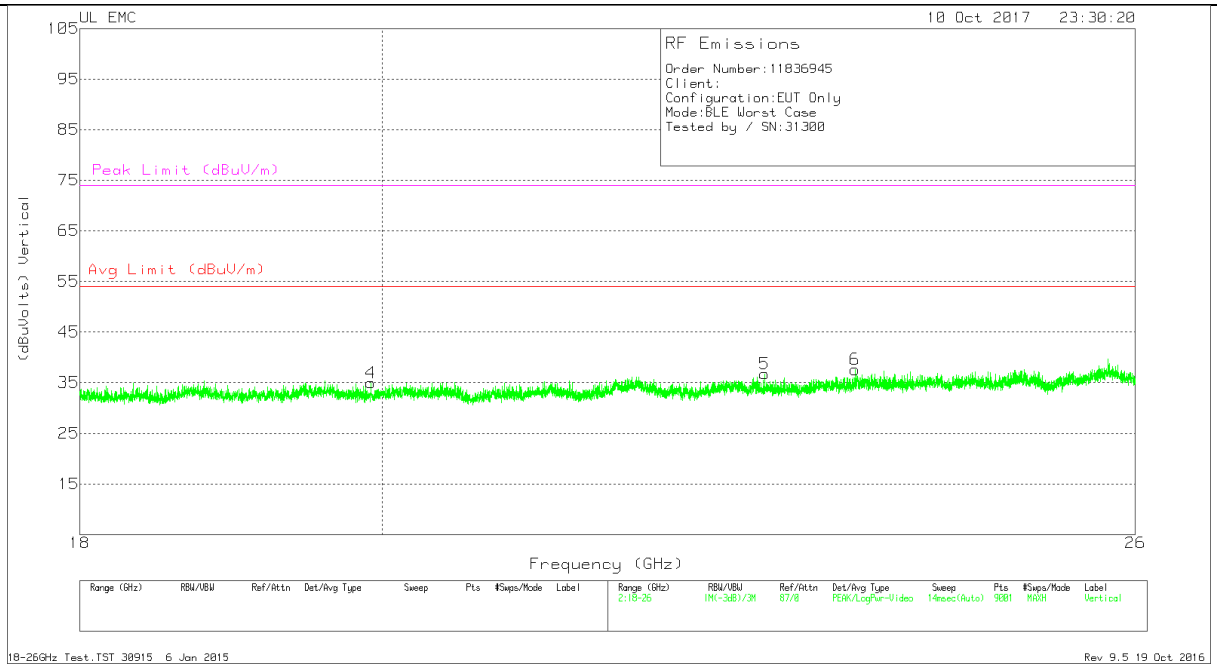
9.3. WORST-CASE 18-26GHz



HORIZONTAL



VERTICAL

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18-26GHz DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T89 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	19.886	36.6	Pk	32.8	-25	-9.5	34.9	54	-19.1	74	-39.1
2	20.581	37.26	Pk	32.7	-25.5	-9.5	34.96	54	-19.04	74	-39.04
3	24.266	37.57	Pk	33.6	-24.2	-9.5	37.47	54	-16.53	74	-36.53
4	19.922	36.79	Pk	32.9	-25.2	-9.5	34.99	54	-19.01	74	-39.01
5	22.85	38.05	Pk	33.3	-25.1	-9.5	36.75	54	-17.25	74	-37.25
6	23.58	38.08	Pk	33.4	-24.4	-9.5	37.58	54	-16.42	74	-36.42

Pk - Peak detector

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10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

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

*Decreases with the logarithm of the frequency.

TEST PROCEDURE

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

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

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

RESULTS

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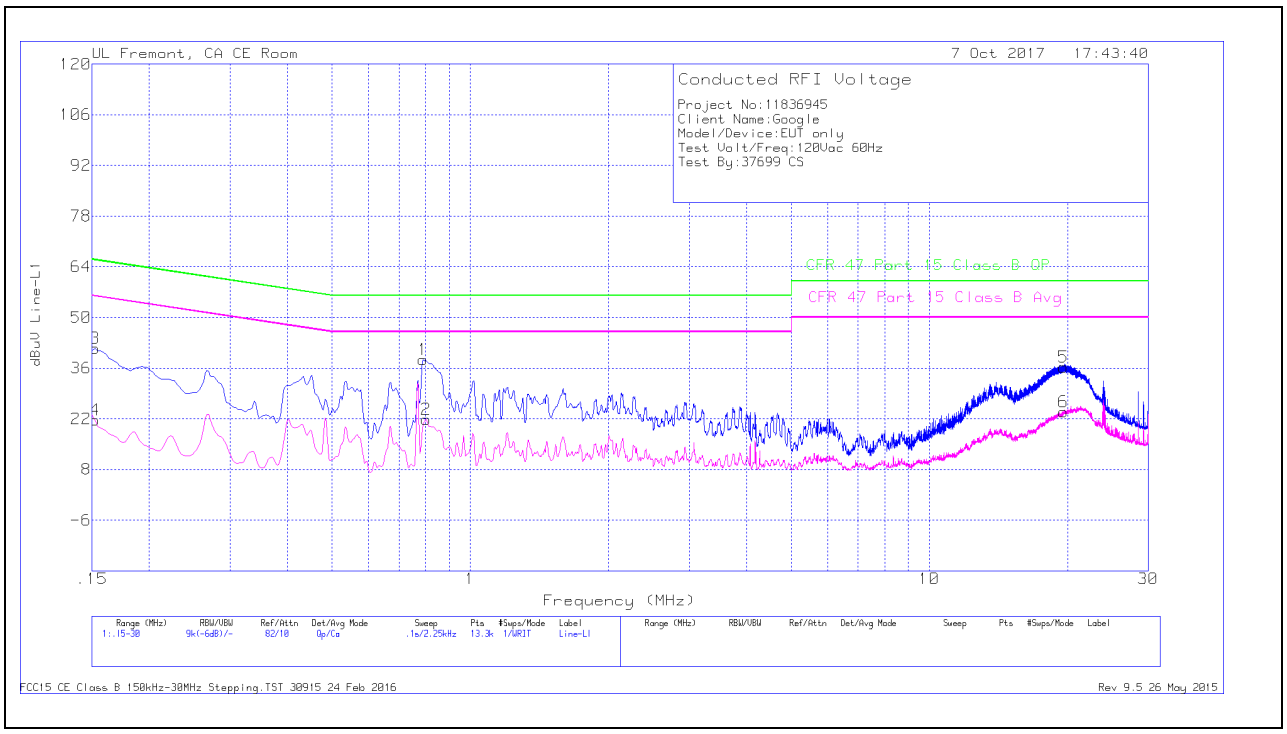
LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L1	LC Cables C1&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
1	.789	28.3	Qp	0	0	10.1	38.4	56	-17.6	-	-
2	.8025	11.77	Ca	0	0	10.1	21.87	-	-	46	-24.13
3	.15225	31.25	Qp	.1	0	10.1	41.45	65.88	-24.43	-	-
4	.15225	11.41	Ca	.1	0	10.1	21.61	-	-	55.88	-34.27
5	19.6035	25.62	Qp	.1	.3	10.3	36.32	60	-23.68	-	-
6	19.6035	13.18	Ca	.1	.3	10.3	23.88	-	-	50	-26.12

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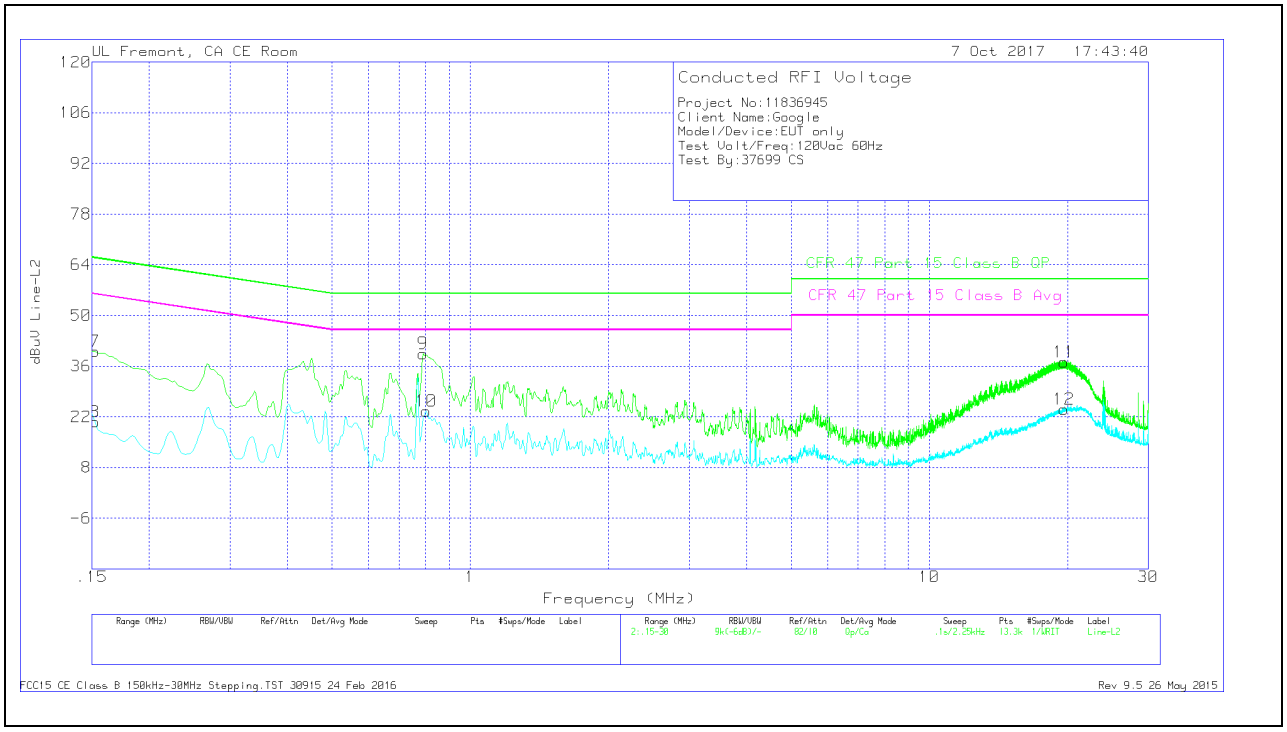
LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
7	.15225	30.02	Qp	0	0	10.1	40.12	65.88	-25.76	-	-
8	.15225	10.51	Ca	0	0	10.1	20.61	-	-	55.88	-35.27
9	.789	29.38	Qp	0	0	10.1	39.48	56	-16.52	-	-
10	.8025	13.55	Ca	0	0	10.1	23.65	-	-	46	-22.35
11	19.65975	26.58	Qp	0	.3	10.3	37.18	60	-22.82	-	-
12	19.662	13.56	Ca	0	.3	10.3	24.16	-	-	50	-25.84

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