CERTIFICATION TEST REPORT

Report Number. : 12561384-E1V5

Applicant	:	Valve Corporation 10400 NE 4th Street, Suite 1400 Bellevue, WA 98004 U.S.A.
Model	:	1007
FCC ID	:	2AES41007
IC	:	20207-1007
EUT Description	:	Valve 1007
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C ISED RSS-247 ISSUE 2 ISED RSS-GEN ISSUE 5

Date Of Issue:
March 05, 2019

Prepared by:
UL Verification Services Inc.
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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	12/12/2018	Initial Issue	
V2	1/8/2019	Updated Section 6, 7 & 8.2.	K. Kedida
V3	1/25/2019	Updated Section 5.1 & 5.2	K. Kedida
V4	2/27/2019	Updated EUT description	K. Kedida
V5	3/5/2019	Updated EUT description	K. Kedida

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Valve Corporation
10400 NE 4th Street, Suite 1400
Bellevue, WA 98004 U.S.A.

EUT DESCRIPTION: Valve 1007

MODEL: 1007

SERIAL NUMBER: Conducted: 1880296
Radiated: 1880297

DATE TESTED: NOVEMBER 7 – 13, 2018

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Complies
ISED RSS-247 Issue 2	Complies
ISED RSS-GEN Issue 5	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 NVLAP, NIST, any agency of the Federal Government, or any agency of the U.S. government.

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Approved & Released For
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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, KDB 558074 D01 v05, RSS-GEN Issue 5, 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, and 47658 Kato Road, 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	47658 Kato Rd
☒ Chamber A (ISED:2324B-1)	☐ Chamber D (ISED:22541-1)	☒ Chamber I (ISED:2324A-5)
☐ Chamber B (ISED:2324B-2)	☐ Chamber E (ISED:22541-2)	☒ Chamber J (ISED:2324A-6)
☐ Chamber C (ISED:2324B-3)	☐ Chamber F (ISED:22541-3)	☐ Chamber K (ISED:2324A-1)
	☐ Chamber G (ISED:22541-4)	☐ Chamber L (ISED:2324A-3)
	☐ Chamber H (ISED:22541-5)	

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers above are covered under Industry Canada company address and respective code

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0

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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

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 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 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 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.32 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.45 dB
Worst Case 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. EUT DESCRIPTION

The EUT is Valve 1007. This device operates on both BLE and Valve protocol, this report represents only BLE results for both left and right radios.

5.2. 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 (Left Radio)	7.48	5.60
2402 - 2480	BLE (Right Radio)	7.13	5.16

Note: During the simultaneous transmission the total combined Power and PSD of the same band is listed as following:

Radio / Mode		Left + Right Total Power		Left + Right Total PSD	
Left Radio	Right Radio	dBm	mW	dBm/3kHz	mW/3kHz
Bluetooth Low Energy	Bluetooth Low Energy	10.3	10.8	-1.2	0.8
Bluetooth Low Energy	Valve Proprietary	10.3	10.8	0.6	1.1
Valve Proprietary	Bluetooth Low Energy	10.3	10.8	0.3	1.1
Valve Proprietary	Valve Proprietary	10.3	10.8	1.6	1.5

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

Frequency Band (GHz)	Antenna 1 (Left Radio)	Antenna 2 (Right Radio)
	Antenna Gain (dBi)	Antenna Gain (dBi)
2.4	4.2	6.0

5.4. SOFTWARE AND FIRMWARE

The EUT firmware version installed during testing was 4859683.

The test utility software used during testing was TeraTerm.

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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 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.

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5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	Lenovo	TP00050C	PC0C3DUA	DoC
Laptop AC/DC Adapter	Lenovo	ADLX45DLC2A	8SSA10E75792UICZ641CLB1	DoC
Laptop	DELL	Inspiron15	B871412	DoC
Laptop AC/DC Adapter	DELL	HA65NS5-00	A065R039L	DoC

I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	AC	Unshielded	1	AC Mains to AC/DC Adapter
2	DC	1	DC	Unshielded	1.5	AC/DC Adapter to Laptop
3	USB	1	USB	Shielded	2	Laptop to EUT
4	Antenna	1	SMA	Unshielded	0.08	To spectrum analyzer
5	AC	1	AC	Unshielded	0.8	AC Mains to AC/DC Adapter
6	DC	1	DC	Unshielded	1	AC/DC Adapter to EUT

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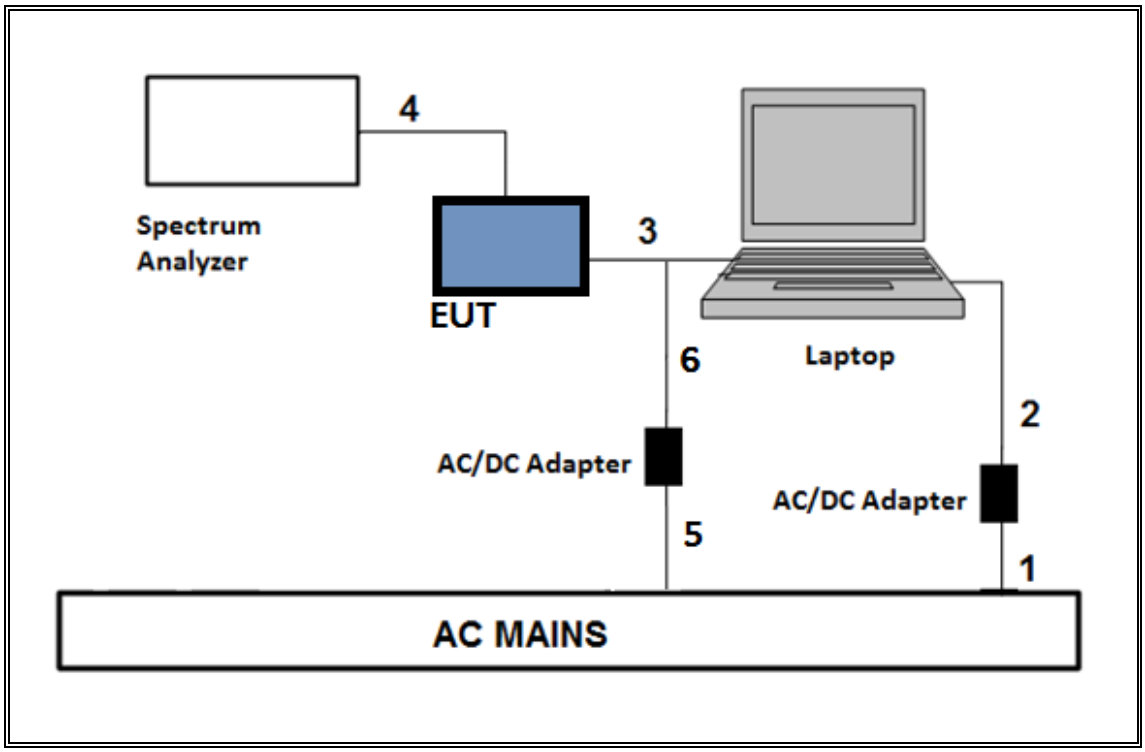
TEST SETUP

The EUT is connected to a test laptop during the tests. Test software exercised the EUT.

SETUP DIAGRAM – CONDUCTED TEST



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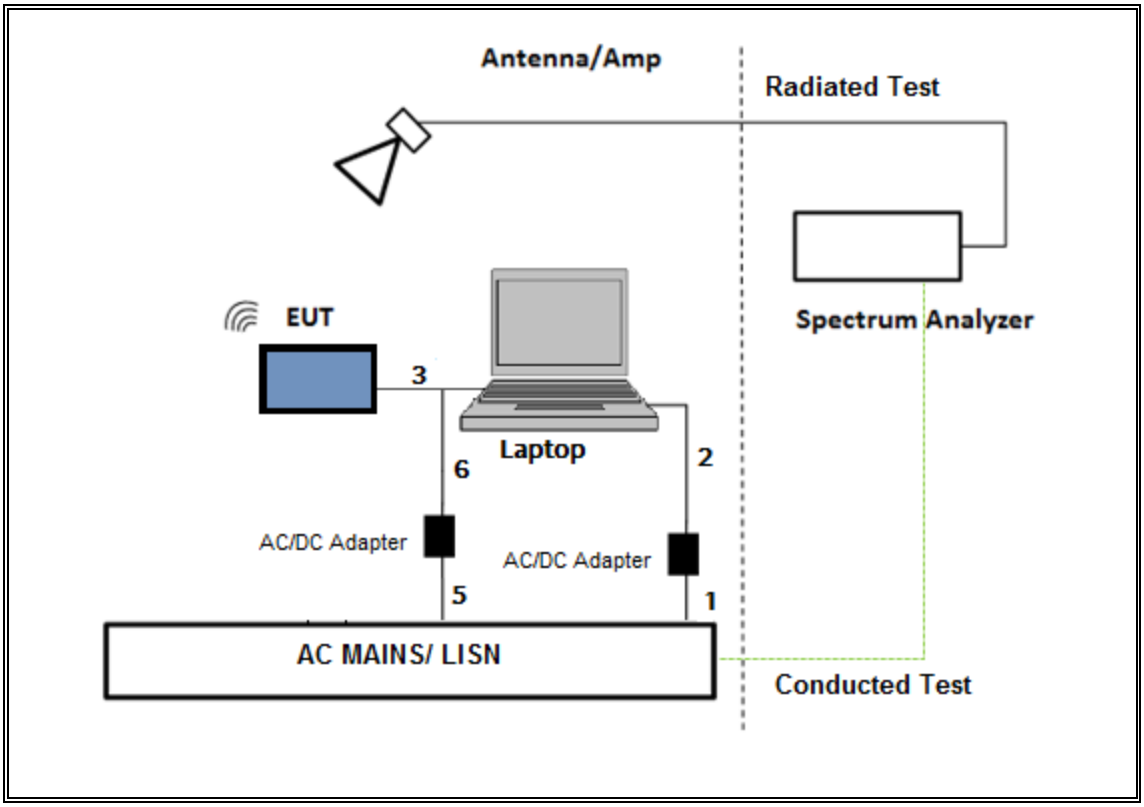
SETUP DIAGRAM - AC LINE CONDUCTED TEST AND RADIATED TEST



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6. MEASUREMENT METHOD

On Time and Duty Cycle: ANSI C63.10-2013 Section 11.6.

6 dB BW: ANSI C63.10 Section 11.8.1. Option 1

Output Power: ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G (Measurement using a gated RF average-reading power meter)

Peak Output Power: ANSI C63.10-2013 Section 7.8.5

Power Spectral Density: ANSI C63.10 Section 11.10.3 Method AVGPSD-1.

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

Radiated emissions restricted frequency bands: ANSI C63.10 Section 11.12.1.

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

Band-edge: ANSI C63.10 Subclause -11.13.3.4 Integration method -Trace averaging across ON and OFF times DC correction

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

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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**	**ID Num**	**Cal Due**	**Last Cal**
6 port rf switch, 1-18GHz	Pasternack	PE7159	171455	08/01/2019	08/01/2018
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp.	JB3	PRE0181575	08/01/2019	08/01/2018
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	AT0067	03/26/2019	03/26/2018
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	PRE0179367	04/25/2019	04/25/2018
RF Amplifier, 1-18GHz	MITEQ	AFS42-00101800-25-S-42	T1165	T1165	12/01/2018
18-26.5 GHz Horn Antenna	Seavey Division	MWH-1826/B	T447	6/16/2019	6/16/2018
Pre-Amp 1-26.5 GHz	Agilent	8449B	T404	3/9/2019	3/9/2018
Spectrum Analyzer PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T818	06/15/2018	06/15/2019
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T1466	04/16/2019	04/16/2018
Antenna, Active Loop 9kHz-30MHz	Com-Power Corp.	AL-130R	PRE0165308	12/13/2018	12/13/2017
Power Meter, P-series single channel	Agilent (Keysight) Technologies	N1911A	T1269	04/05/2019	04/05/2018
L.I.S.N.	FCC INC.	FCC LISN 50/250	T1310	06/15/2019	06/15/2018
L.I.S.N.	FCC INC.	FCC LISN 50/250	T24	03/06/2019	03/06/2018
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	PRE0179367	04/25/2019	04/25/2018

Test Software List			
Description	**Manufacturer**	**Model**	**Version**
Radiated Software	UL	UL EMC	Rev 9.5, Jun 22, 2018
Antenna Port Software	UL	UL RF	Rev 8.9.1, Oct 18, 2018

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8. ANTENNA PORT TEST RESULTS

8.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

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	0.395	0.700	0.564	56.43%	2.49	2.532

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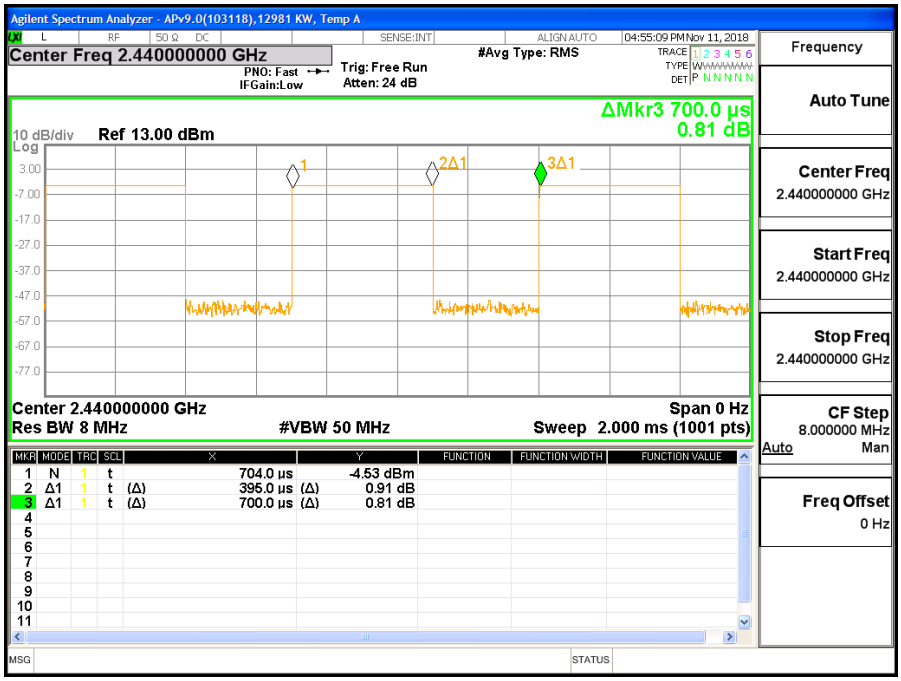
DUTY CYCLE PLOTS



DUTY CYCLE BLE

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8.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

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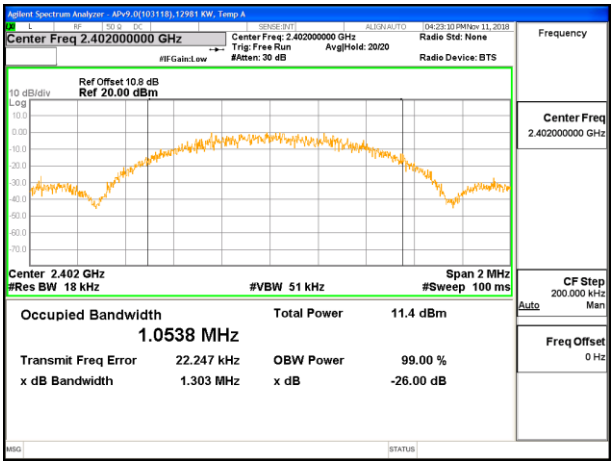
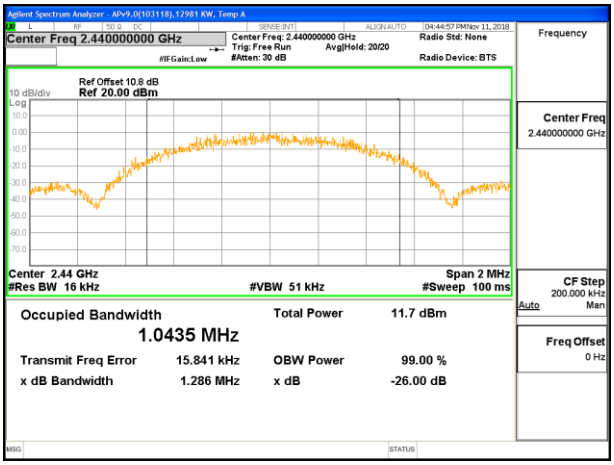
8.2.1. Antenna 1 (Left Radio)

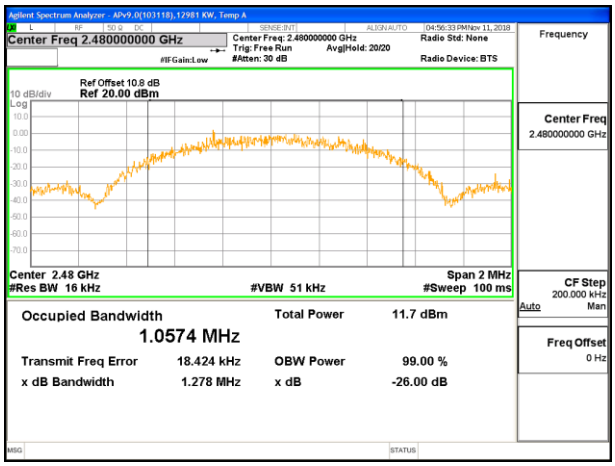
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0538
Middle	2440	1.0435
High	2480	1.0574



LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

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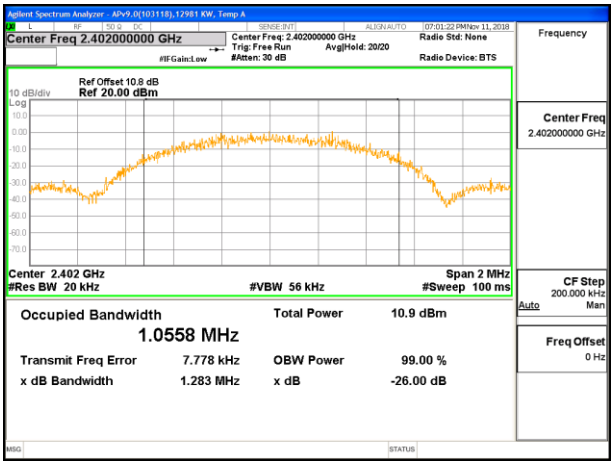
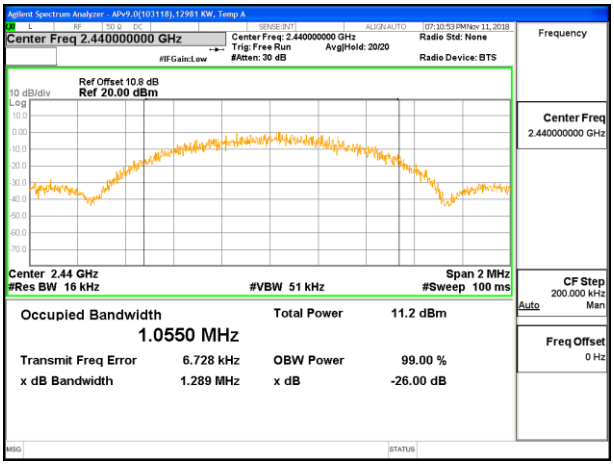
8.2.2. Antenna 2 (Right Radio)

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0558
Middle	2440	1.0550
High	2480	1.0626

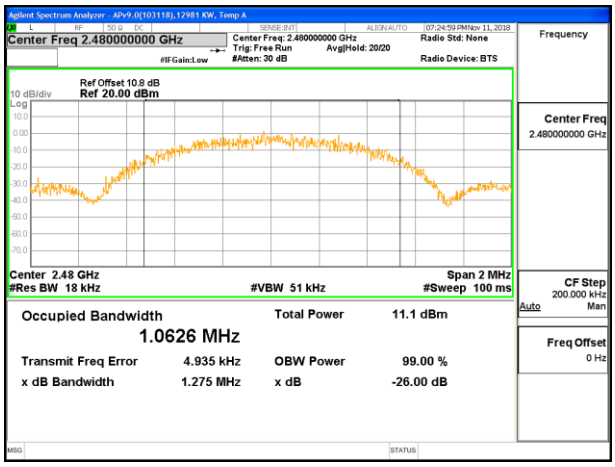


LOW CHANNEL



MID CHANNEL

s



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8.3. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

RSS-247 5.2 (a)

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

RESULTS

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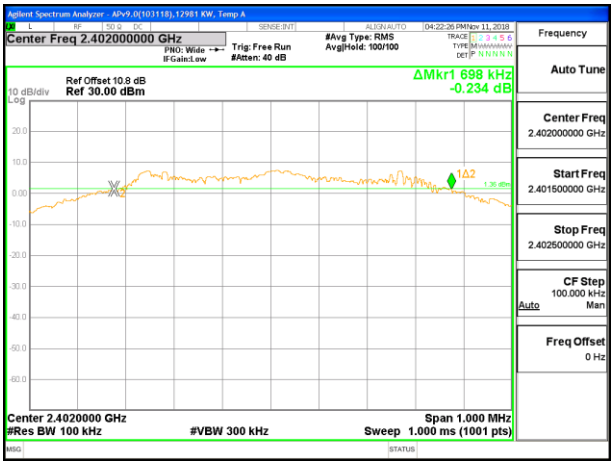
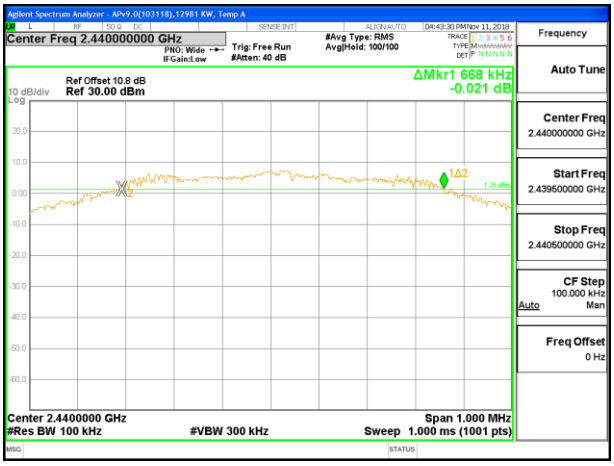
8.3.1. Antenna 1 (Left Radio)

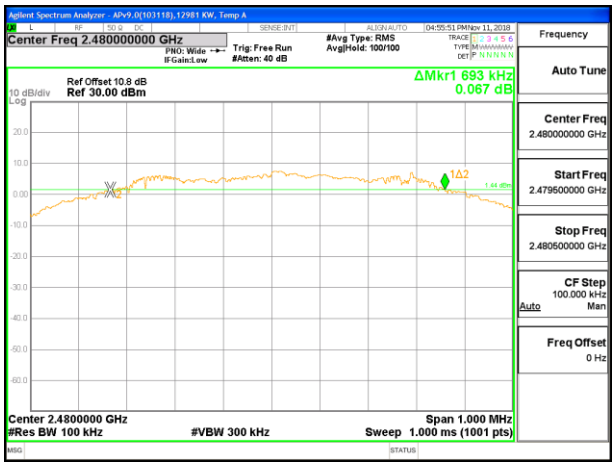
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.698	0.5
Middle	2440	0.668	0.5
High	2480	0.693	0.5



LOW CHANNEL



MID CHANNEL



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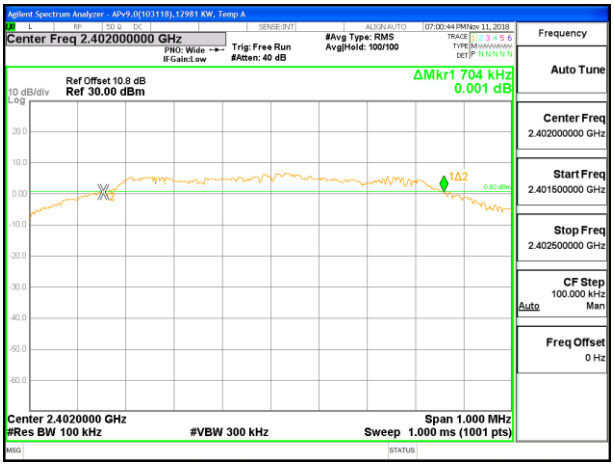
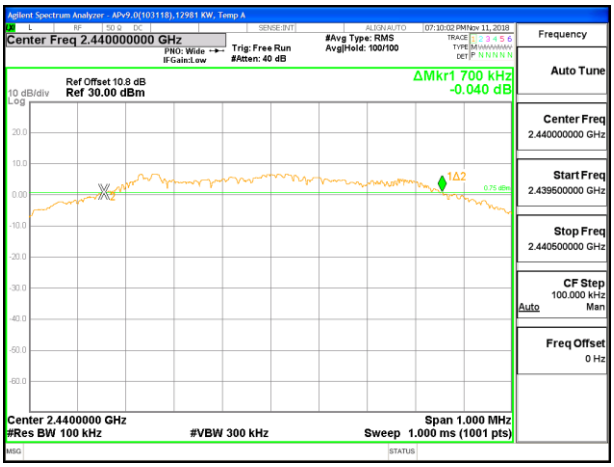
8.3.2. Antenna 2 (Right Radio)

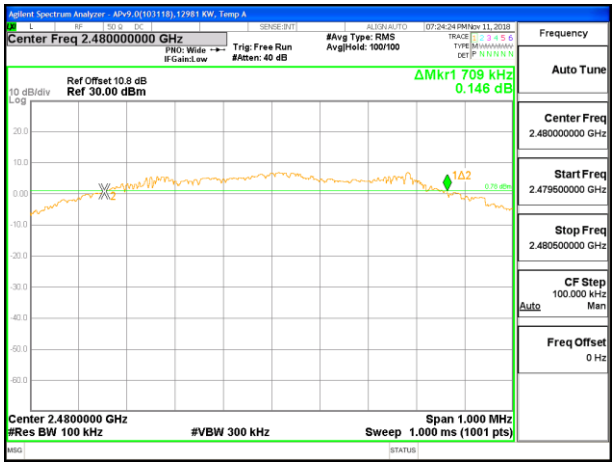
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.704	0.5
Middle	2440	0.700	0.5
High	2480	0.709	0.5



LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

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8.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

RSS-247 5.4 (d)

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

TEST PROCEDURE

The transmitter output is connected to a power meter. The cable assembly insertion loss was entered as an offset in the power meter to allow for a gated peak reading of power.

RESULTS

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8.4.1. Antenna 1 (Left Radio)

Tested By:	12981 KW
Date:	11/12/2018

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	7.26	30	-22.740
Middle	2440	7.32	30	-22.680
High	2480	7.48	30	-22.520

8.4.2. Antenna 2 (Right Radio)

Tested By:	12981 KW
Date:	11/12/2018

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	6.76	30	-23.240
Middle	2440	6.86	30	-23.140
High	2480	7.13	30	-22.870

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8.5. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter. The cable assembly insertion loss was entered as an offset in the power meter to allow for a gated average reading of power.

RESULTS

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8.5.1. Antenna 1 (Left Radio)

Tested By:	12981 KW
Date:	11/12/2018

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	7.2
Middle	2440	7.25
High	2480	7.42

8.5.2. Antenna 2 (Right Radio)

Tested By:	12981 KW
Date:	11/12/2018

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	6.69
Middle	2440	6.79
High	2480	7.07

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8.6. 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

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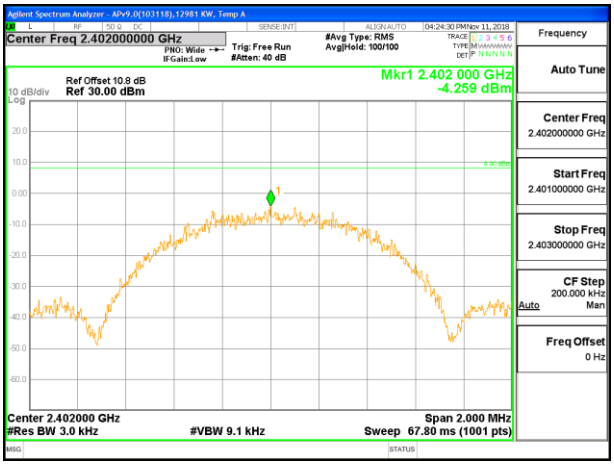
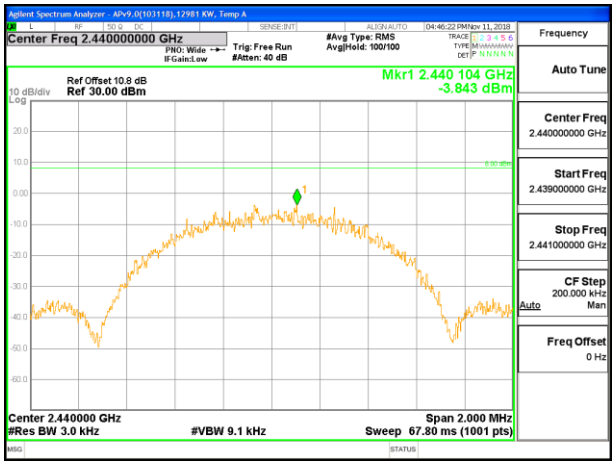
8.6.1. Antenna 1 (Left Radio)

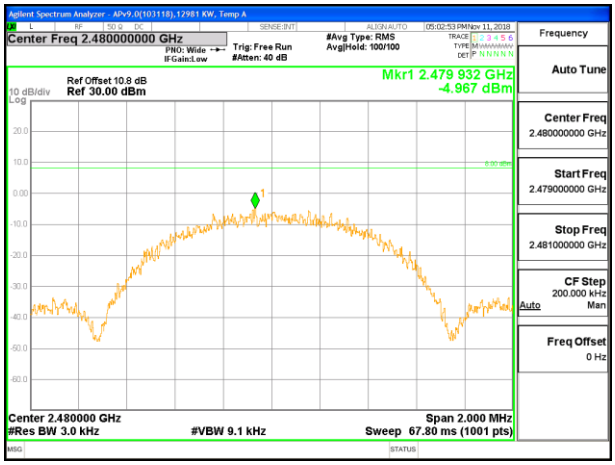
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-4.259	8	-12.26
Middle	2440	-3.843	8	-11.84
High	2480	-4.967	8	-12.97



LOW CHANNEL



MID CHANNEL



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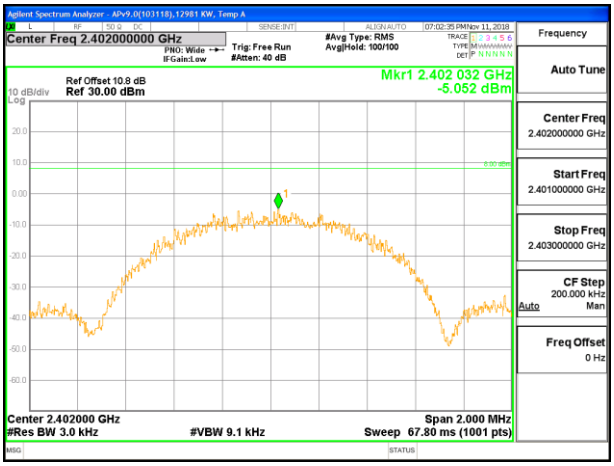
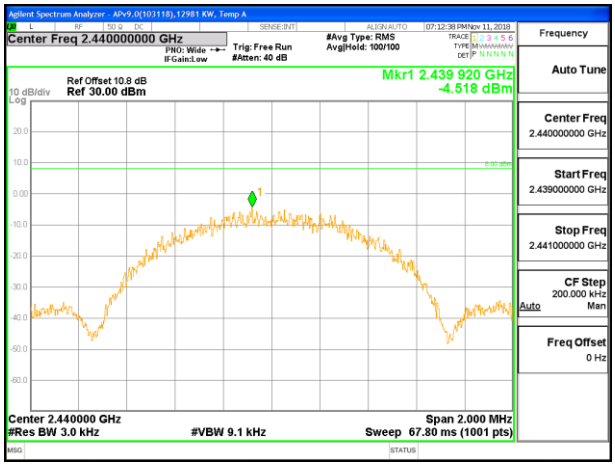
8.6.2. Antenna 2 (Right Radio)

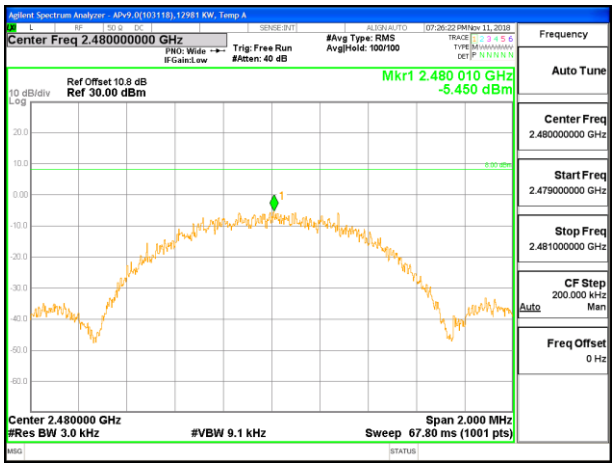
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-5.025	8	-13.03
Middle	2440	-4.518	8	-12.52
High	2480	-5.450	8	-13.45



LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

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8.7. 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

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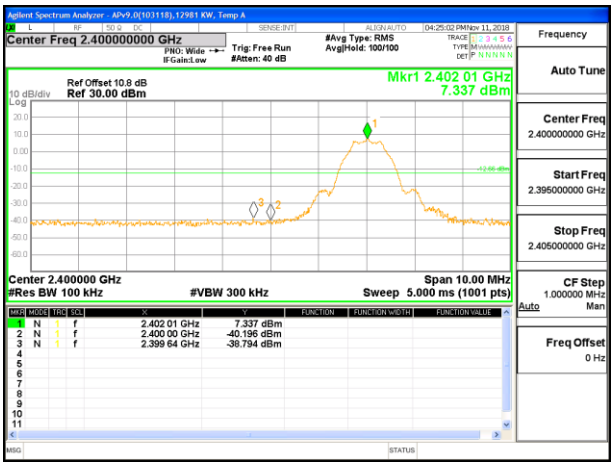
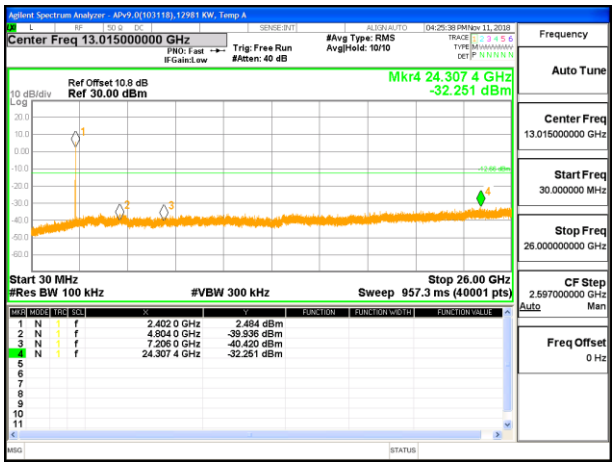
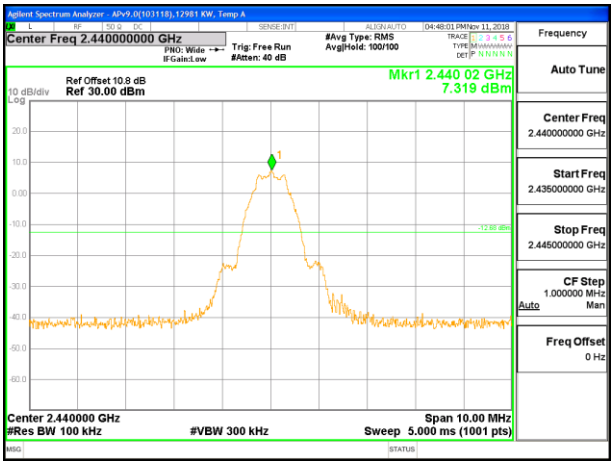
8.7.1. Antenna 1 (Left Radio)



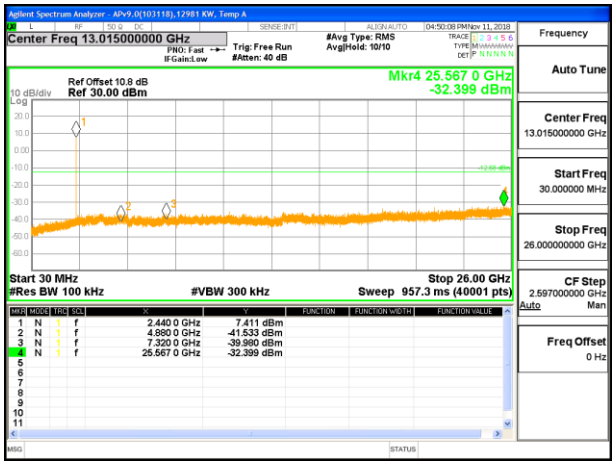
LOW CHANNEL BANDEDGE



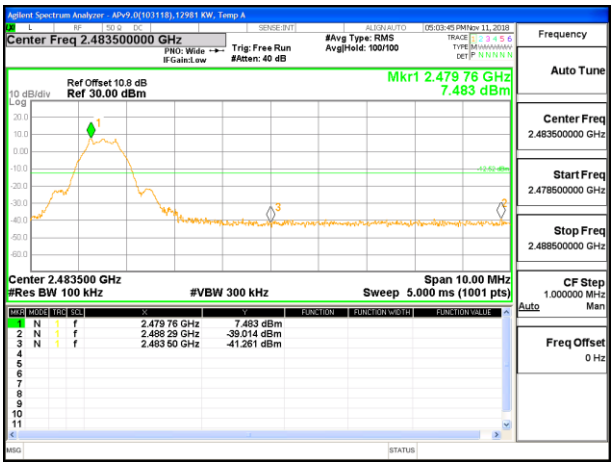
OUT-OF-BAND LOW CHANNEL



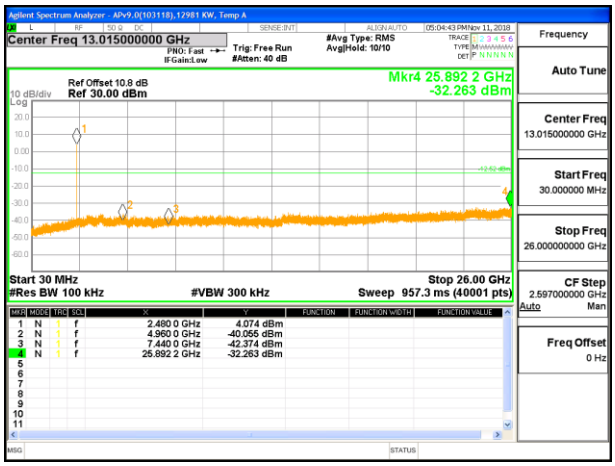
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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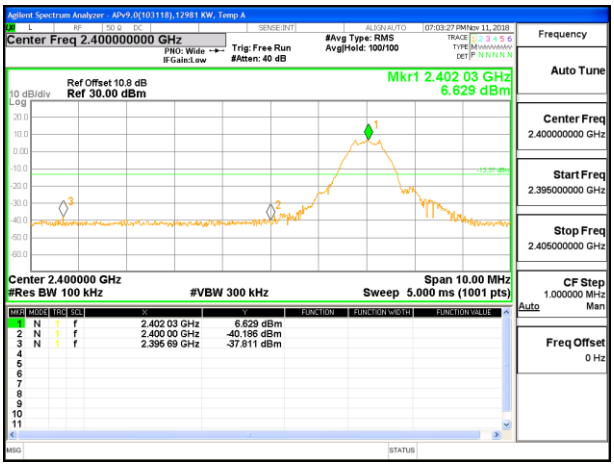
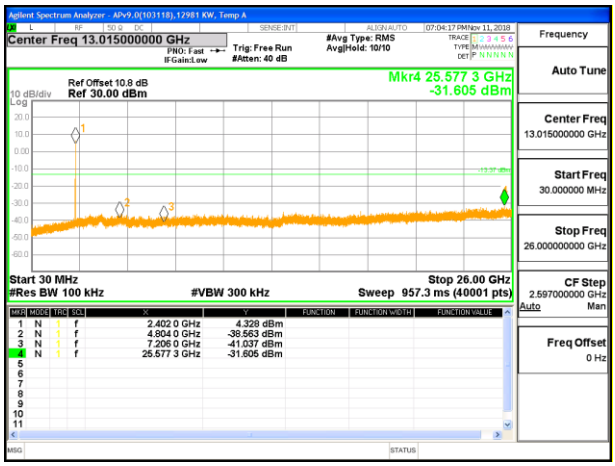
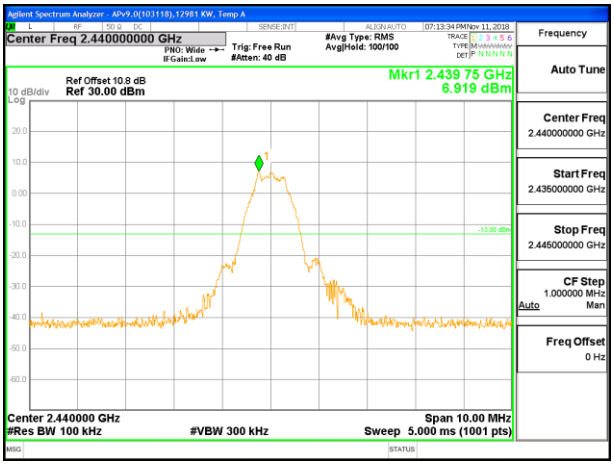
8.7.2. Antenna 2 (Right Radio)



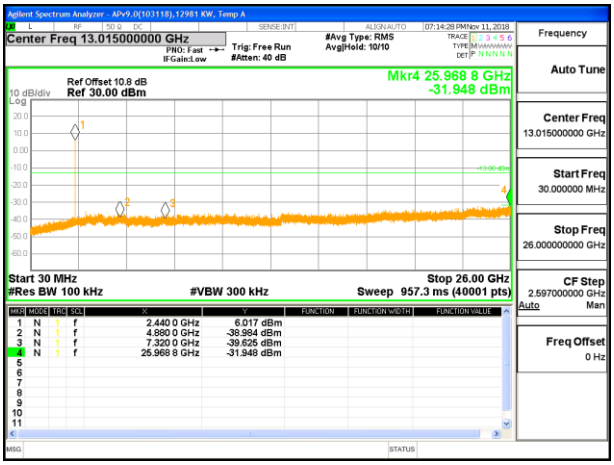
LOW CHANNEL BANDEDGE



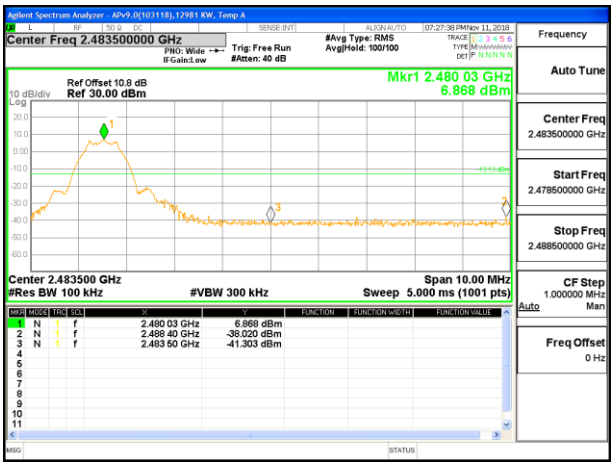
OUT-OF-BAND LOW CHANNEL



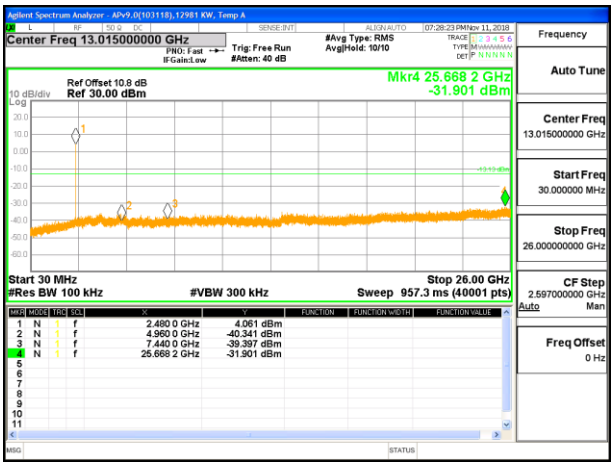
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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9. RADIATED TEST RESULTS

9.1. 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. 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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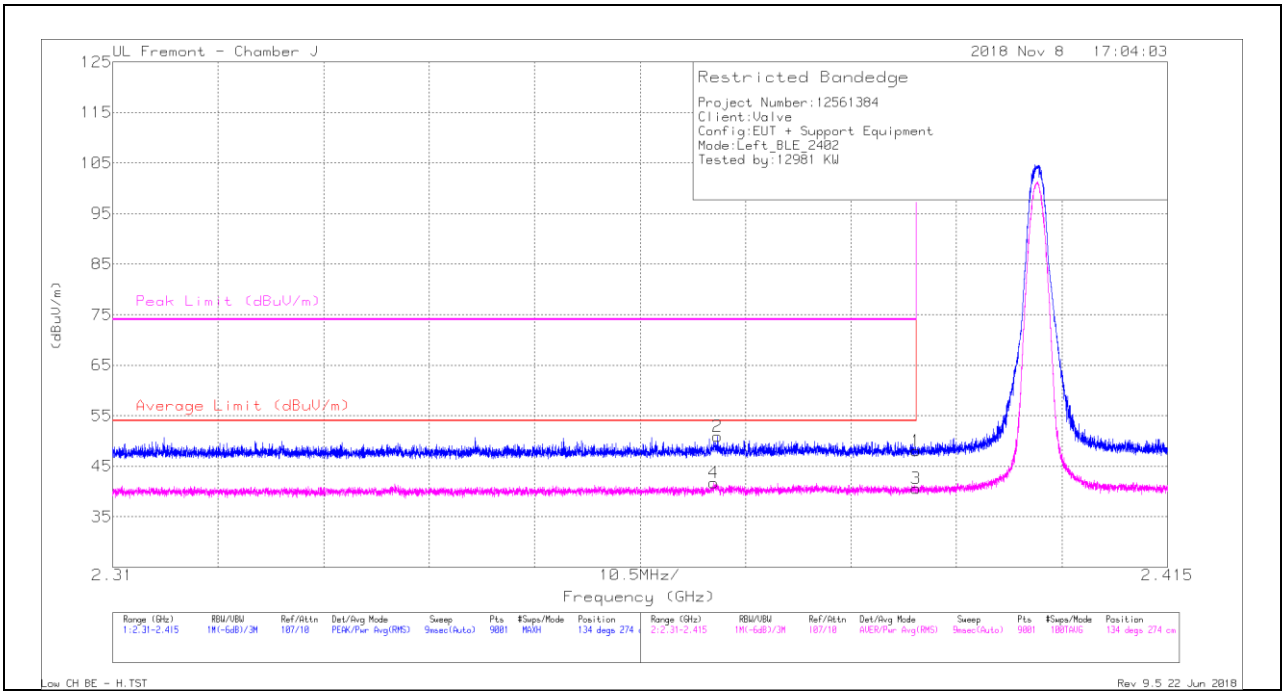
9.2. TRANSMITTER ABOVE 1 GHz

9.2.1. Antenna 1 (Left Radio)

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0067 (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	41.84	Pk	32	-25.8	0	48.04	-	-	74	-25.96	134	274	H
2	* 2.37	44.84	Pk	31.9	-25.8	0	50.94	-	-	74	-23.06	134	274	H
3	* 2.39	31.88	RMS	32	-25.8	2.49	40.57	54	-13.43	-	-	134	274	H
4	* 2.37	33.16	RMS	31.9	-25.8	2.49	41.75	54	-12.25	-	-	134	274	H

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

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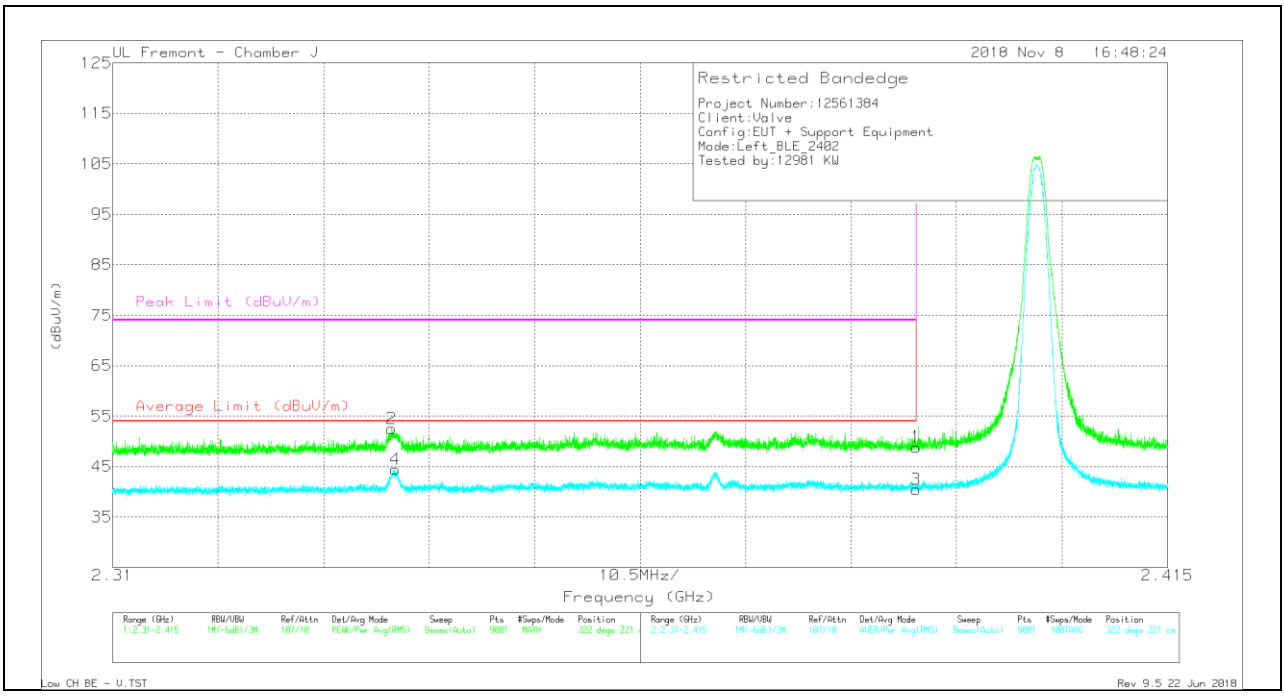
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0067 (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	42.66	Pk	32	-25.8	0	48.86	-	-	74	-25.14	322	221	V
2	* 2.338	46.41	Pk	31.9	-25.8	0	52.51	-	-	74	-21.49	322	221	V
3	* 2.39	31.76	RMS	32	-25.8	2.49	40.45	54	-13.55	-	-	322	221	V
4	* 2.338	35.86	RMS	31.9	-25.8	2.49	44.45	54	-9.55	-	-	322	221	V

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

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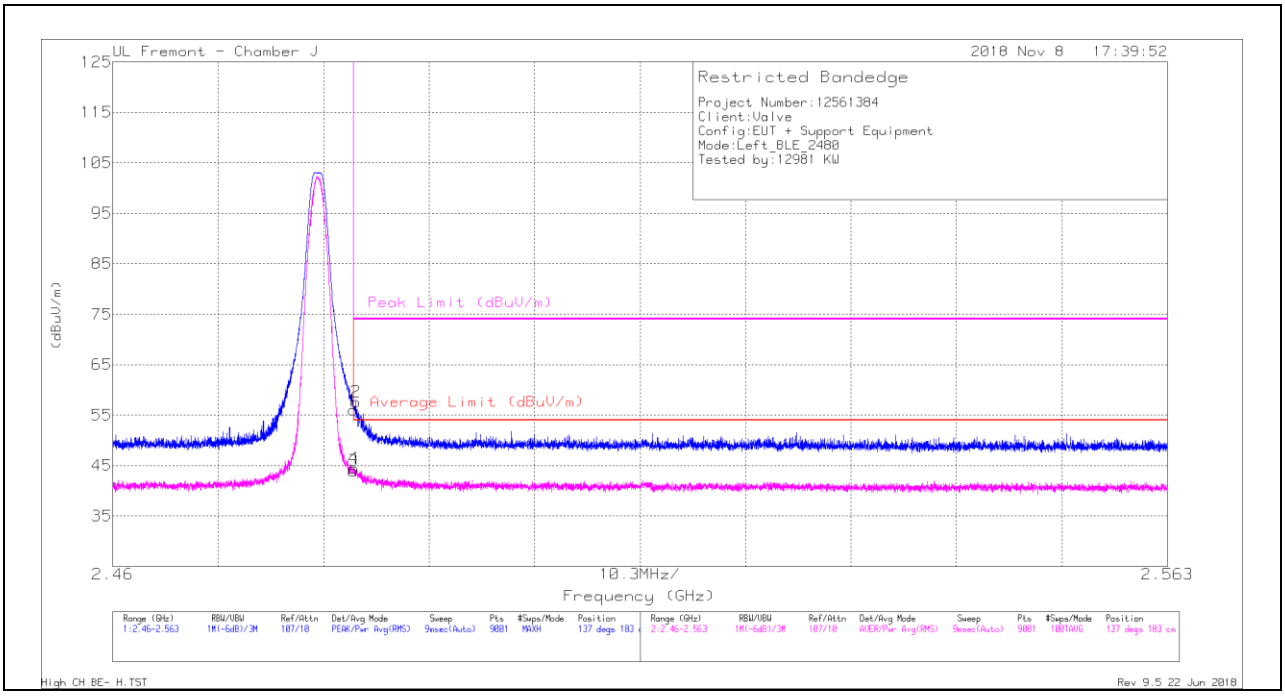
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0067 (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	49.27	Pk	32.5	-25.8	0	55.97	-	-	74	-18.03	137	183	H
2	* 2.484	50.96	Pk	32.5	-25.8	0	57.66	-	-	74	-16.34	137	183	H
3	* 2.484	34.82	RMS	32.5	-25.8	2.49	44.01	54	-9.99	-	-	137	183	H
4	* 2.484	35.22	RMS	32.5	-25.8	2.49	44.41	54	-9.59	-	-	137	183	H

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

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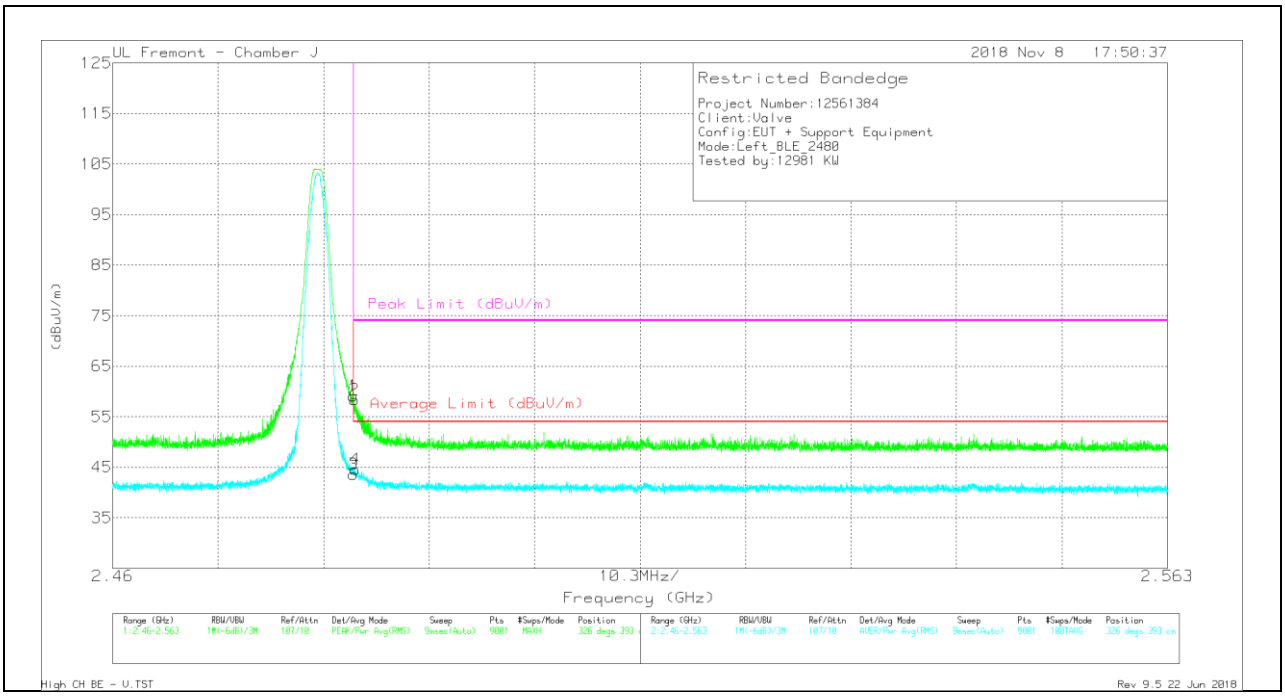
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0067 (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	52.35	Pk	32.5	-25.8	0	59.05	-	-	74	-14.95	326	393	V
2	* 2.484	51.66	Pk	32.5	-25.8	0	58.36	-	-	74	-15.64	326	393	V
3	* 2.484	34.45	RMS	32.5	-25.8	2.49	43.64	54	-10.36	-	-	326	393	V
4	* 2.484	35.38	RMS	32.5	-25.8	2.49	44.57	54	-9.43	-	-	326	393	V

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

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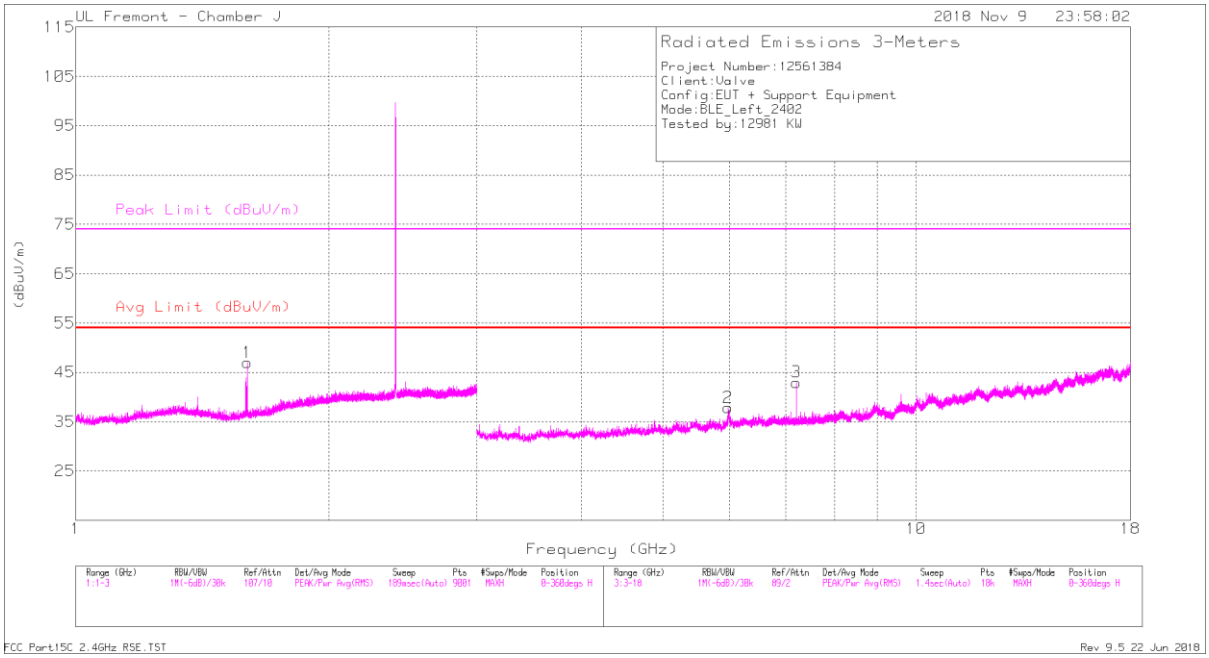
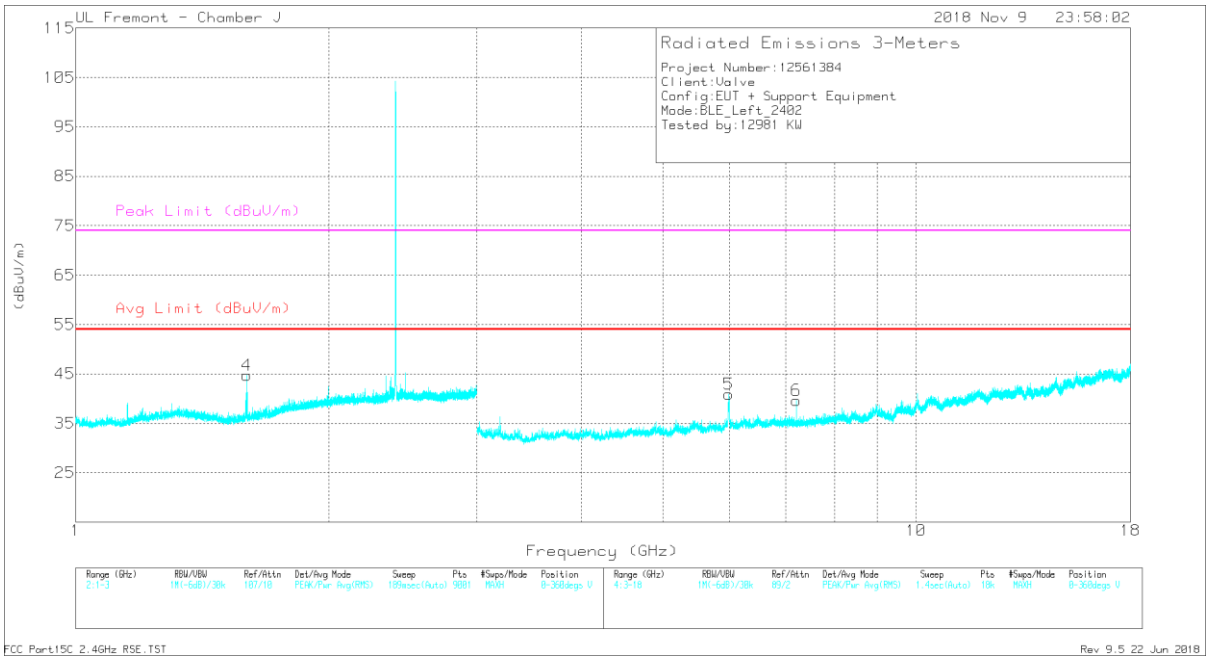
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0067 (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	* 1.598	43.68	PK2	28.5	-26.1	0	46.08	-	-	74	-27.92	81	187	H
	* 1.598	33.02	MAv1	28.5	-26.1	2.49	37.91	54	-16.09	-	-	81	187	H
4	* 1.599	40.86	PK2	28.5	-26.1	0	43.26	-	-	74	-30.74	329	176	V
	* 1.599	32.83	MAv1	28.5	-26.1	2.49	37.72	54	-16.28	-	-	329	176	V
2	5.974	31.6	Pk	35	-28.7	0	37.9	-	-	-	-	0-360	198	H
3	7.205	35.1	Pk	35.6	-27.7	0	43	-	-	-	-	0-360	198	H
5	5.984	34.16	Pk	35.1	-28.3	0	40.96	-	-	-	-	0-360	198	V
6	7.205	31.73	Pk	35.6	-27.7	0	39.63	-	-	-	-	0-360	198	V

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

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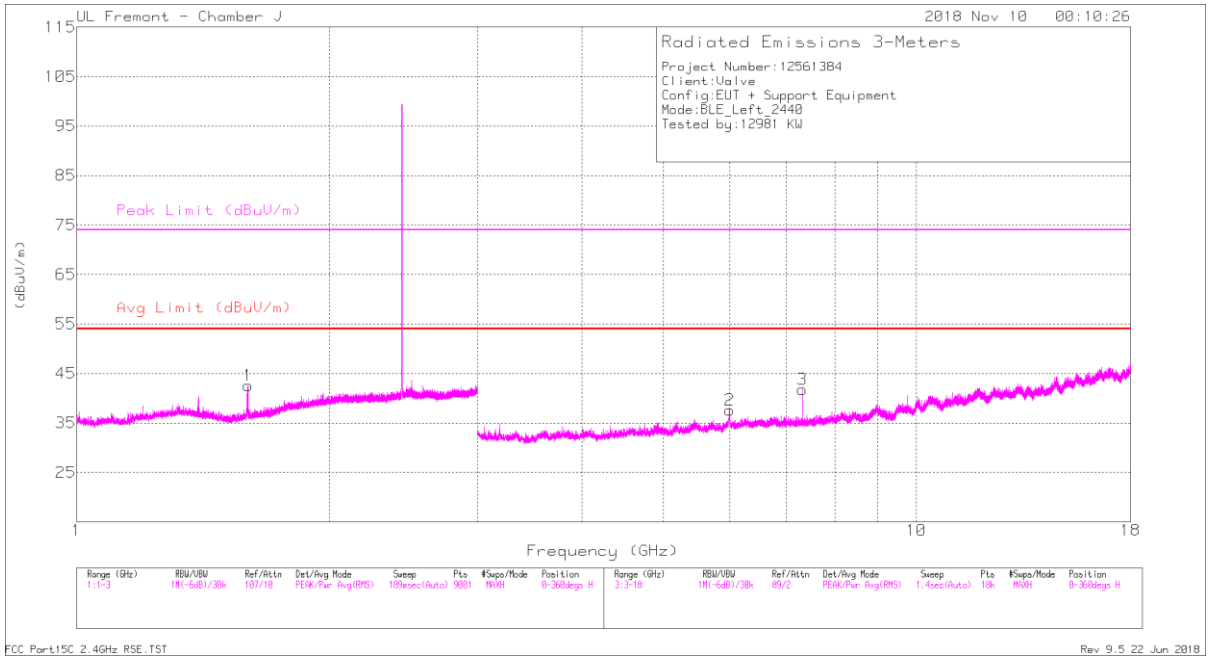
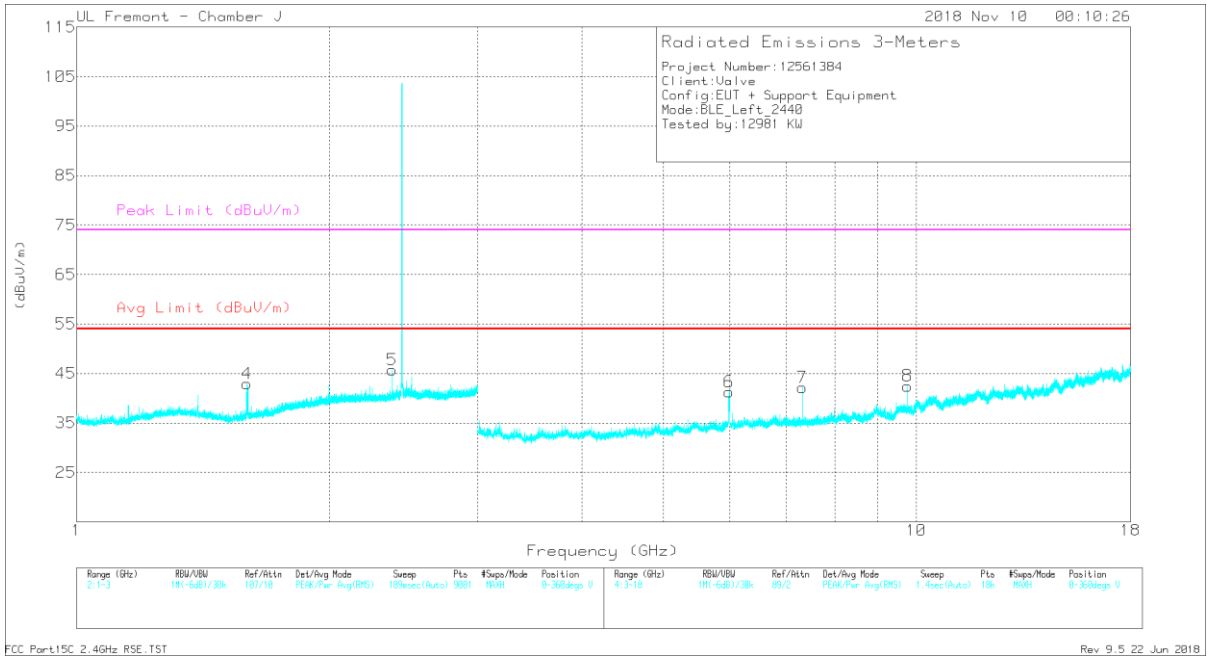
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0067 (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	* 1.6	40.65	PK2	28.5	-26.1	0	43.05	-	-	74	-30.95	250	125	H
	* 1.6	32.51	MAv1	28.5	-26.1	2.49	37.4	54	-16.6	-	-	250	125	H
4	* 1.594	41.3	PK2	28.4	-26.1	0	43.6	-	-	74	-30.4	270	117	V
	* 1.595	33.16	MAv1	28.4	-26.1	2.49	37.95	54	-16.05	-	-	270	117	V
5	* 2.377	41.29	PK2	32	-25.8	0	47.49	-	-	74	-26.51	169	140	V
	* 2.376	33.04	MAv1	32	-25.8	2.49	41.73	54	-12.27	-	-	169	140	V
2	5.999	30.75	Pk	35.1	-28.3	0	37.55	-	-	-	-	0-360	198	H
3	* 7.321	37.66	PK2	35.6	-27.5	0	45.76	-	-	74	-28.24	209	214	H
	* 7.319	28.91	MAv1	35.6	-27.5	2.49	39.5	54	-14.5	-	-	209	214	H
6	5.984	34.43	Pk	35.1	-28.3	0	41.23	-	-	-	-	0-360	198	V
7	* 7.318	34.04	PK2	35.6	-27.5	0	42.14	-	-	74	-31.86	107	235	V
	* 7.318	25.77	MAv1	35.6	-27.5	2.49	36.36	54	-17.64	-	-	107	235	V
8	9.759	30.19	Pk	36.6	-24.3	0	42.49	-	-	-	-	0-360	198	V

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

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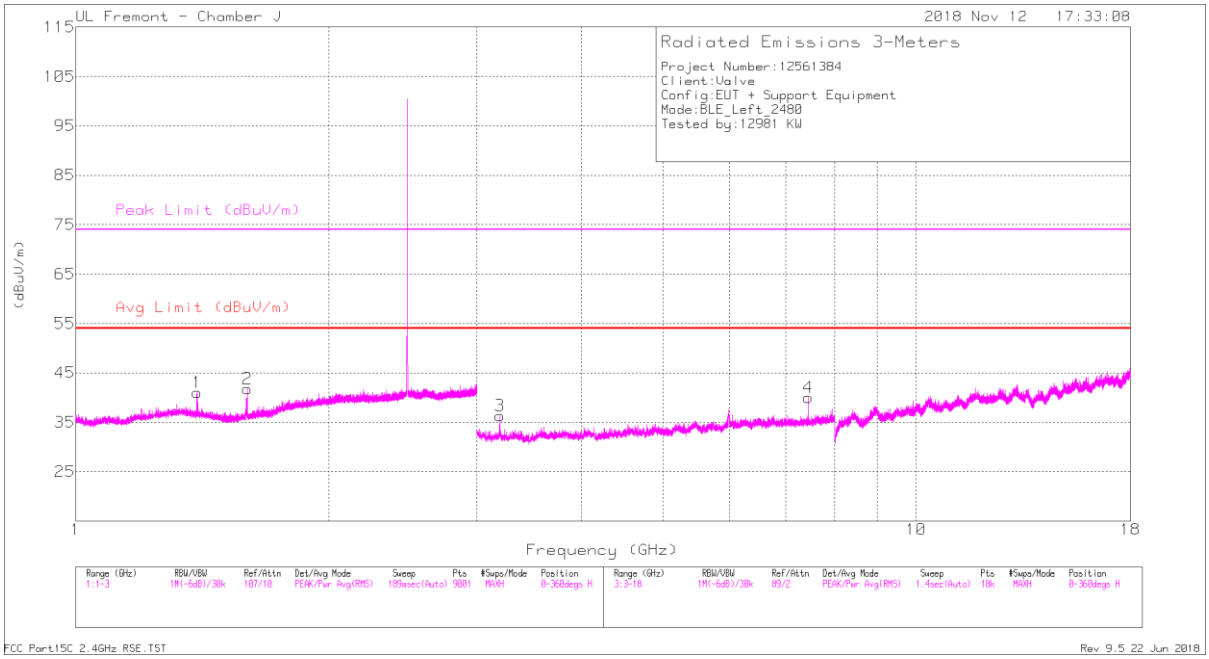
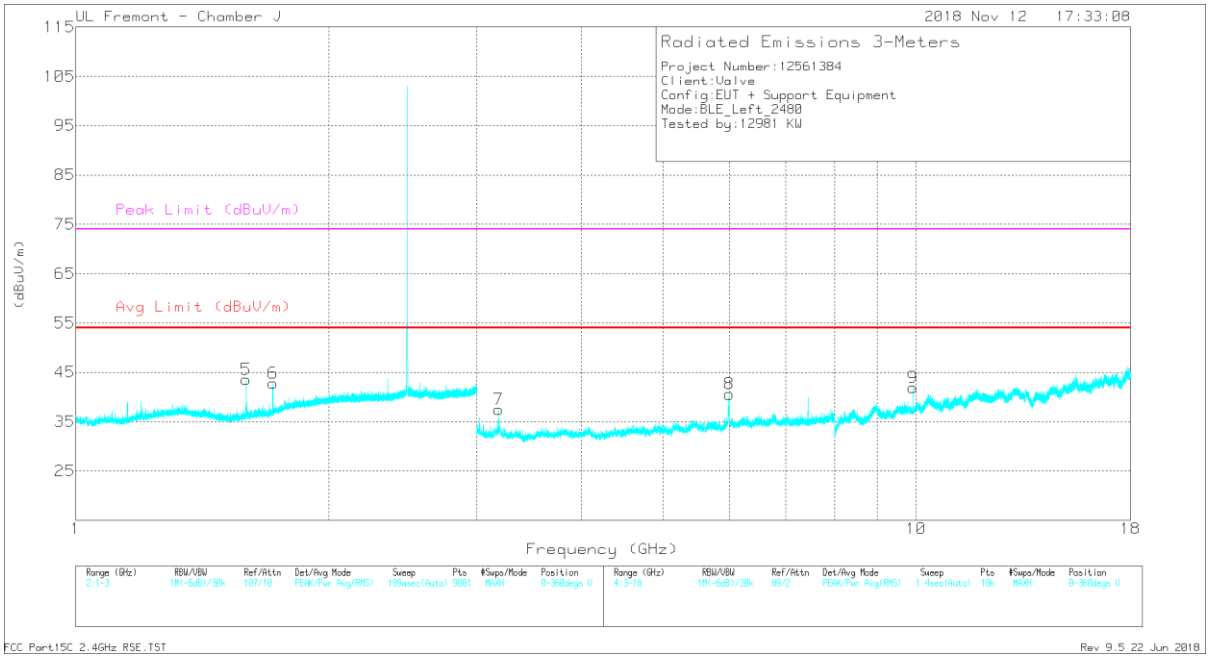
HIGH CHANNEL RESULTS



HORIZONTAL



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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0067 (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	* 1.396	41.57	PK2	28.9	-26.1	0	44.37	-	-	74	-29.63	170	135	H
	* 1.396	32.02	MAv1	29	-26.1	2.49	37.41	54	-16.59	-	-	170	135	H
2	* 1.598	47.06	PK2	28.5	-26.1	0	49.46	-	-	74	-24.54	80	190	H
	* 1.599	32.38	MAv1	28.5	-26.1	2.49	37.27	54	-16.73	-	-	80	190	H
5	* 1.596	47.76	PK2	28.4	-26.1	0	50.06	-	-	74	-23.94	141	180	V
	* 1.593	33.75	MAv1	28.4	-26.1	2.49	38.54	54	-15.46	-	-	141	180	V
6	1.716	39.46	Pk	29.3	-26	0	42.76	-	-	-	-	0-360	198	V
3	3.196	37.23	Pk	33.3	-34.2	0	36.33	-	-	-	-	0-360	198	H
4	* 7.441	37.84	PK2	35.7	-27.6	0	45.94	-	-	74	-28.06	326	133	H
	* 7.439	28.12	MAv1	35.7	-27.6	2.49	38.71	54	-15.29	-	-	326	133	H
7	3.189	38.51	Pk	33.2	-34.2	0	37.51	-	-	-	-	0-360	101	V
8	5.999	33.79	Pk	35.1	-28.3	0	40.59	-	-	-	-	0-360	101	V
9	9.92	30.1	Pk	36.9	-25.1	0	41.9	-	-	-	-	0-360	198	V

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

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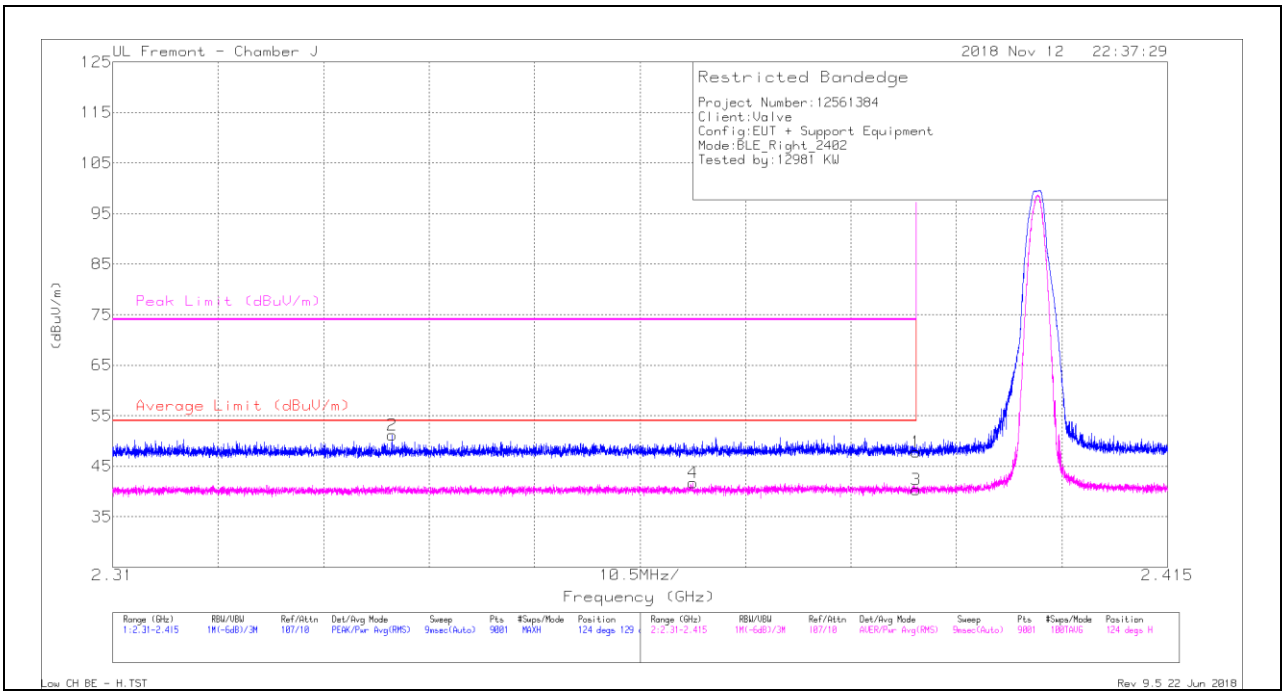
9.2.2. Antenna 2 (Right Radio)

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0067 (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	41.58	Pk	32	-25.8	0	47.78	-	-	74	-26.22	124	129	H
2	* 2.338	45.04	Pk	31.9	-25.8	0	51.14	-	-	74	-22.86	124	129	H
3	* 2.39	31.66	RMS	32	-25.8	2.49	40.35	54	-13.65	-	-	124	129	H
4	* 2.368	33.13	RMS	31.9	-25.8	2.49	41.72	54	-12.28	-	-	124	129	H

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

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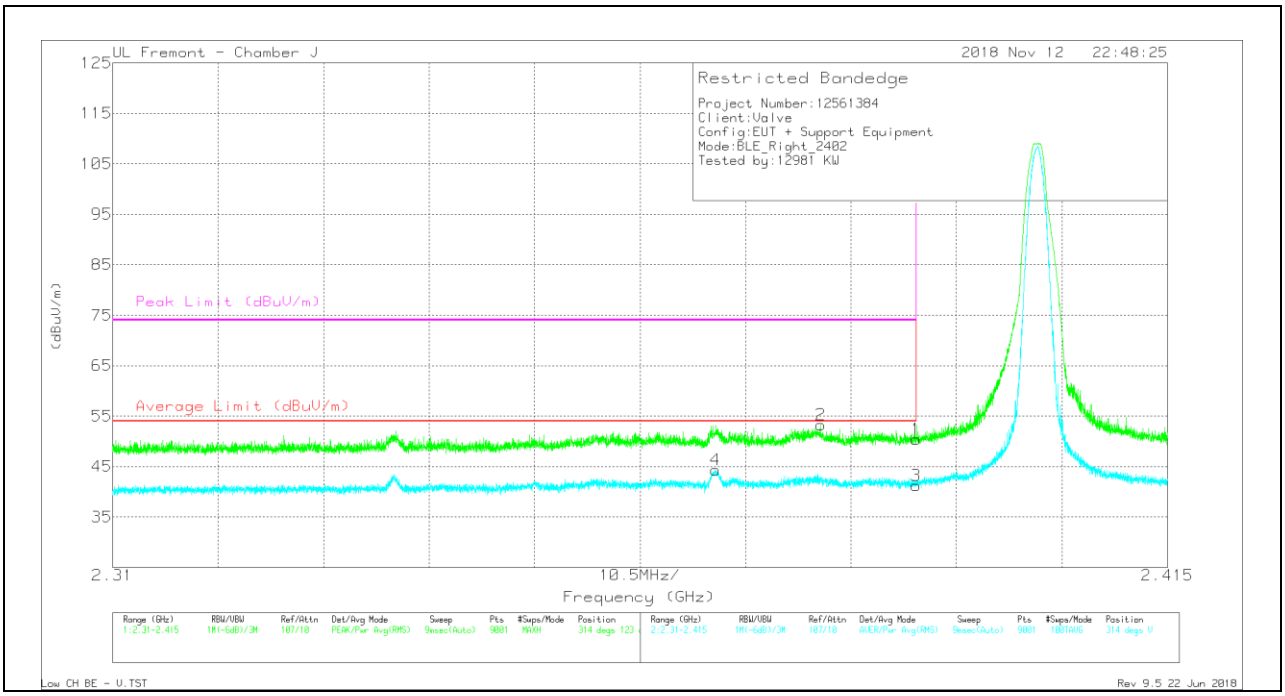
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0067 (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	44.17	Pk	32	-25.8	0	50.37	-	-	74	-23.63	314	123	V
2	* 2.38	47.09	Pk	32	-25.8	0	53.29	-	-	74	-20.71	314	123	V
3	* 2.39	32.5	RMS	32	-25.8	2.49	41.19	54	-12.81	-	-	314	123	V
4	* 2.37	35.76	RMS	31.9	-25.8	2.49	44.35	54	-9.65	-	-	314	123	V

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

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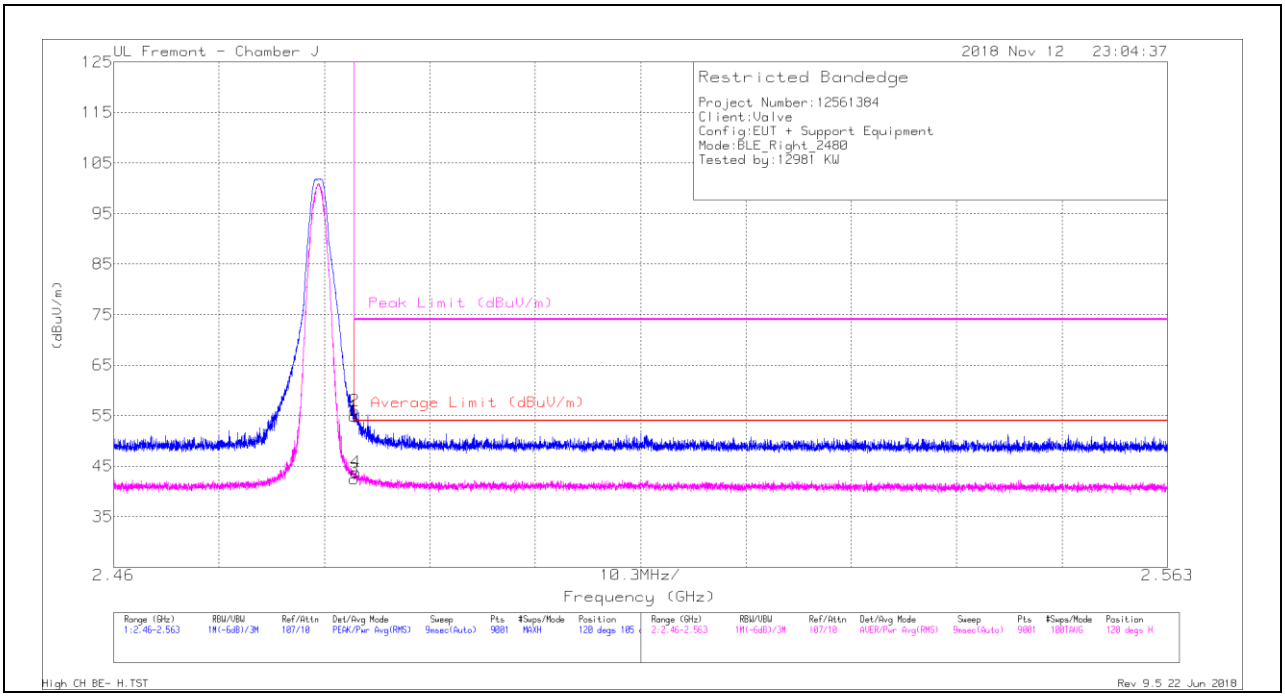
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0067 (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	48.19	Pk	32.5	-25.8	0	54.89	-	-	74	-19.11	120	105	H
2	* 2.484	49.34	Pk	32.5	-25.8	0	56.04	-	-	74	-17.96	120	105	H
3	* 2.484	33.31	RMS	32.5	-25.8	2.49	42.5	54	-11.5	-	-	120	105	H
4	* 2.484	34.7	RMS	32.5	-25.8	2.49	43.89	54	-10.11	-	-	120	105	H

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Pk - Peak detector
RMS - RMS detection

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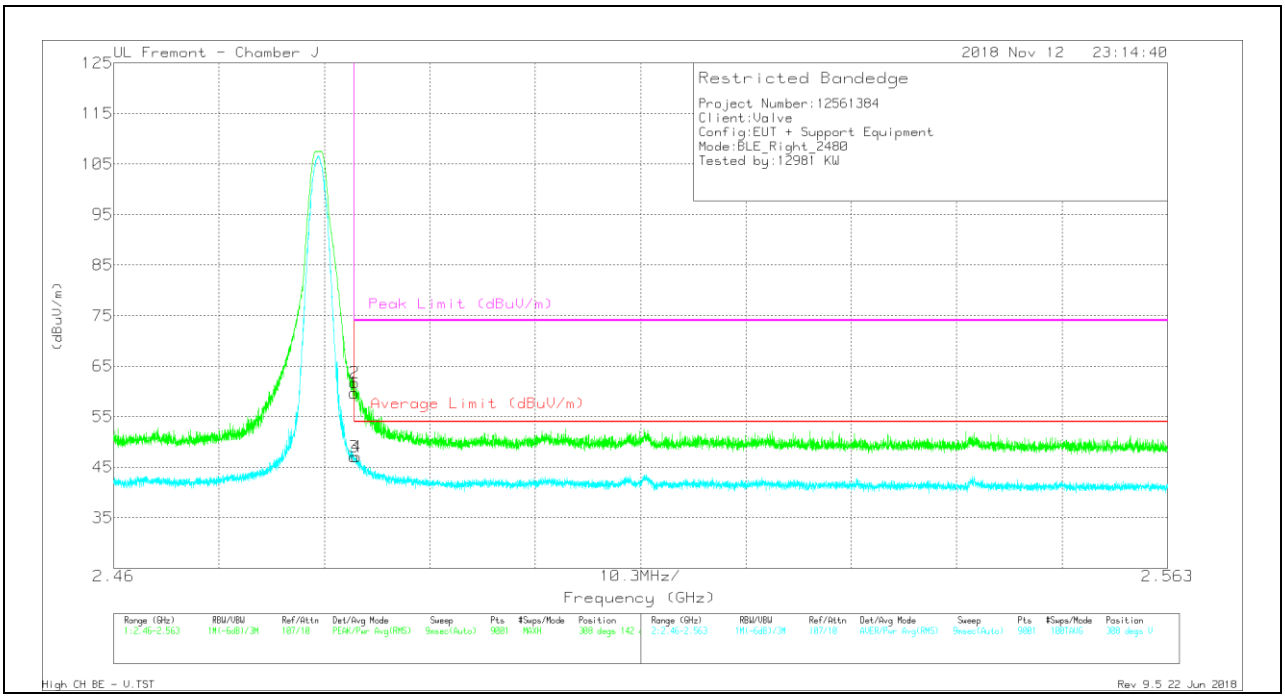
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0067 (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	52.97	Pk	32.5	-25.8	0	59.67	-	-	74	-14.33	308	142	V
2	* 2.484	55.06	Pk	32.5	-25.8	0	61.76	-	-	74	-12.24	308	142	V
3	* 2.484	37.87	RMS	32.5	-25.8	2.49	47.06	54	-6.94	-	-	308	142	V
4	* 2.484	37.93	RMS	32.5	-25.8	2.49	47.12	54	-6.88	-	-	308	142	V

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Pk - Peak detector
RMS - RMS detection

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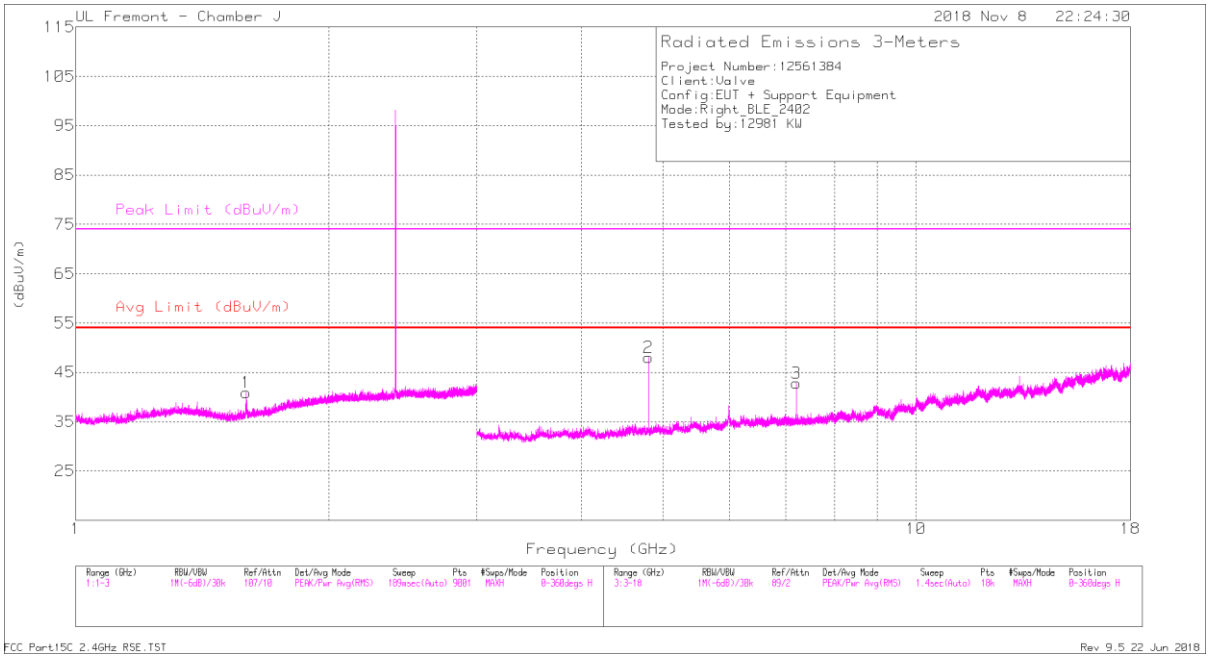
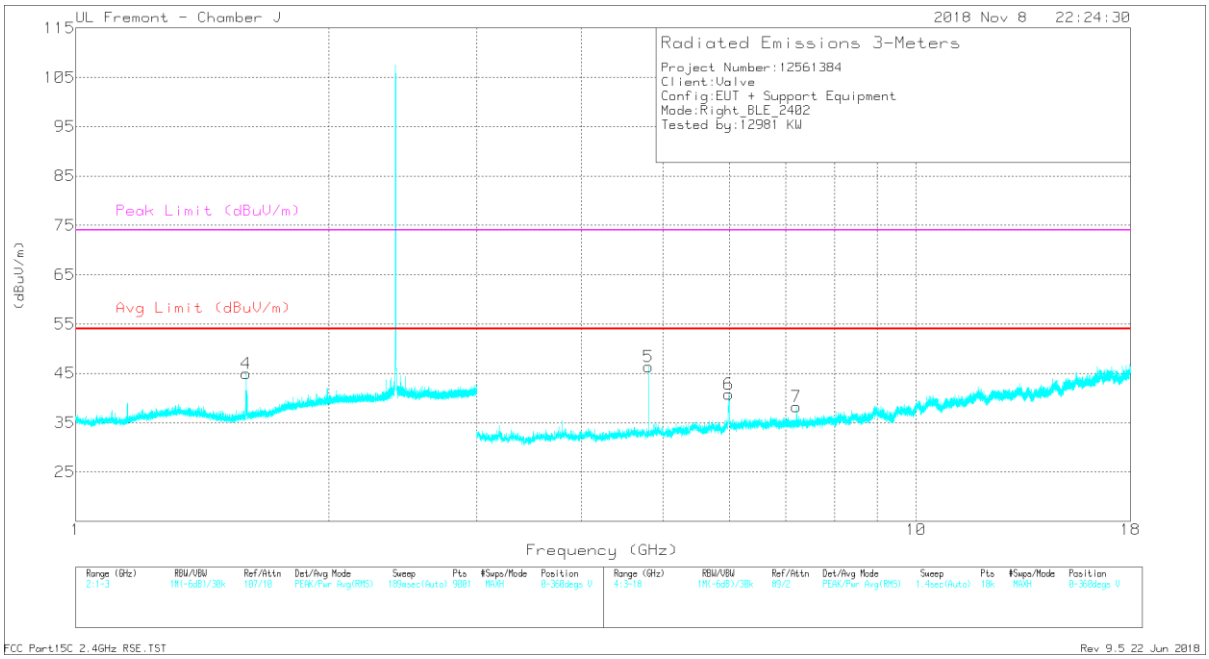
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0067 (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	* 1.598	40.15	PK2	28.5	-26.1	0	42.55	-	-	74	-31.45	192	179	H
	* 1.597	32.31	MAv1	28.4	-26.1	2.49	37.1	54	-16.9	-	-	192	179	H
4	* 1.595	41.47	PK2	28.4	-26.1	0	43.77	-	-	74	-30.23	253	183	V
	* 1.595	32.95	MAv1	28.4	-26.1	2.49	37.74	54	-16.26	-	-	253	183	V
2	* 4.805	49.58	PK2	34.1	-31.3	0	52.38	-	-	74	-21.62	336	177	H
	* 4.804	40.11	MAv1	34.1	-31.3	2.49	45.4	54	-8.6	-	-	336	177	H
3	7.207	34.92	Pk	35.6	-27.7	0	42.82	-	-	-	-	0-360	198	H
5	* 4.804	47.28	PK2	34.1	-31.3	0	50.08	-	-	74	-23.92	253	117	V
	* 4.804	37.75	MAv1	34.1	-31.3	2.49	43.04	54	-10.96	-	-	253	117	V
6	5.985	33.97	Pk	35.1	-28.3	0	40.77	-	-	-	-	0-360	101	V
7	7.205	30.35	Pk	35.6	-27.7	0	38.25	-	-	-	-	0-360	101	V

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

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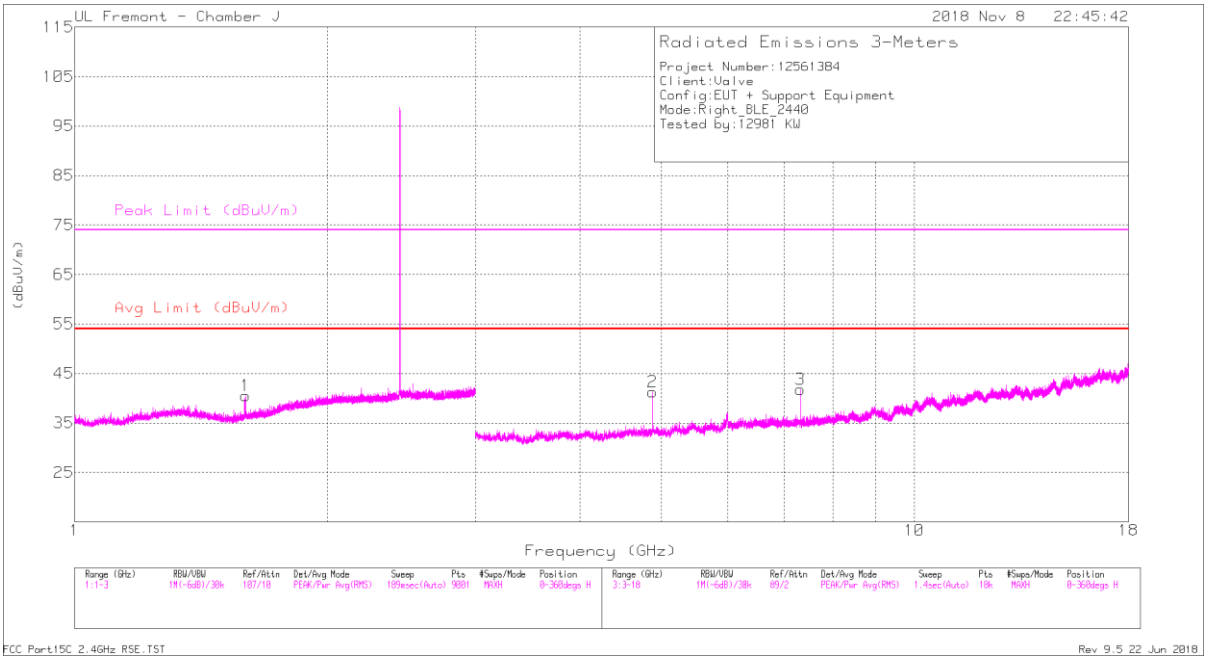
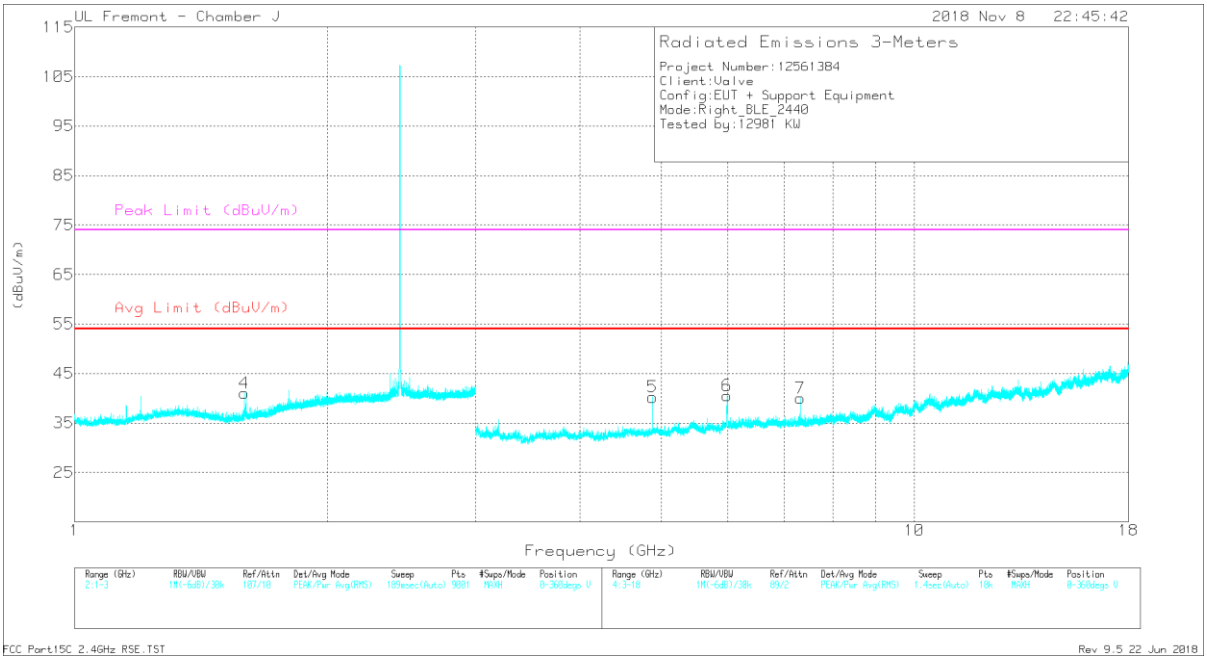
MID CHANNEL RESULTS



HORIZONTAL



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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0067 (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	* 1.599	40.46	PK2	28.5	-26.1	0	42.86	-	-	74	-31.14	310	113	H
	* 1.597	32.31	MAv1	28.4	-26.1	2.49	37.1	54	-16.9	-	-	310	113	H
4	* 1.595	41.7	PK2	28.4	-26.1	0	44	-	-	74	-30	232	153	V
	* 1.594	32.33	MAv1	28.4	-26.1	2.49	37.12	54	-16.88	-	-	232	153	V
2	* 4.88	43.07	PK2	34	-31.4	0	45.67	-	-	74	-28.33	344	118	H
	* 4.88	34.67	MAv1	34	-31.4	2.49	39.76	54	-14.24	-	-	344	118	H
3	* 7.319	34.99	PK2	35.6	-27.5	0	43.09	-	-	74	-30.91	284	140	H
	* 7.32	25.21	MAv1	35.6	-27.5	2.49	35.8	54	-18.2	-	-	284	140	H
5	* 4.88	42.31	PK2	34	-31.4	0	44.91	-	-	74	-29.09	260	104	V
	* 4.88	33.7	MAv1	34	-31.4	2.49	38.79	54	-15.21	-	-	260	104	V
6	5.984	33.76	Pk	35.1	-28.3	0	40.56	-	-	-	-	0-360	198	V
7	* 7.321	34.77	PK2	35.6	-27.5	0	42.87	-	-	74	-31.13	134	157	V
	* 7.321	25.29	MAv1	35.6	-27.5	2.49	35.88	54	-18.12	-	-	134	157	V

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

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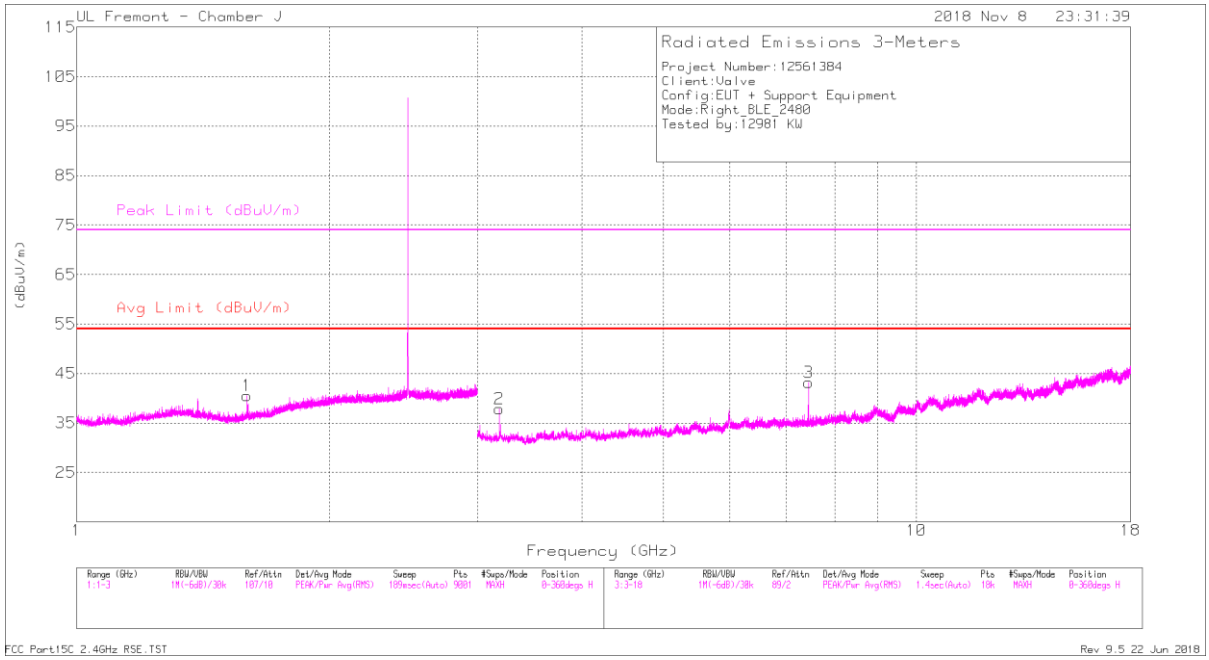
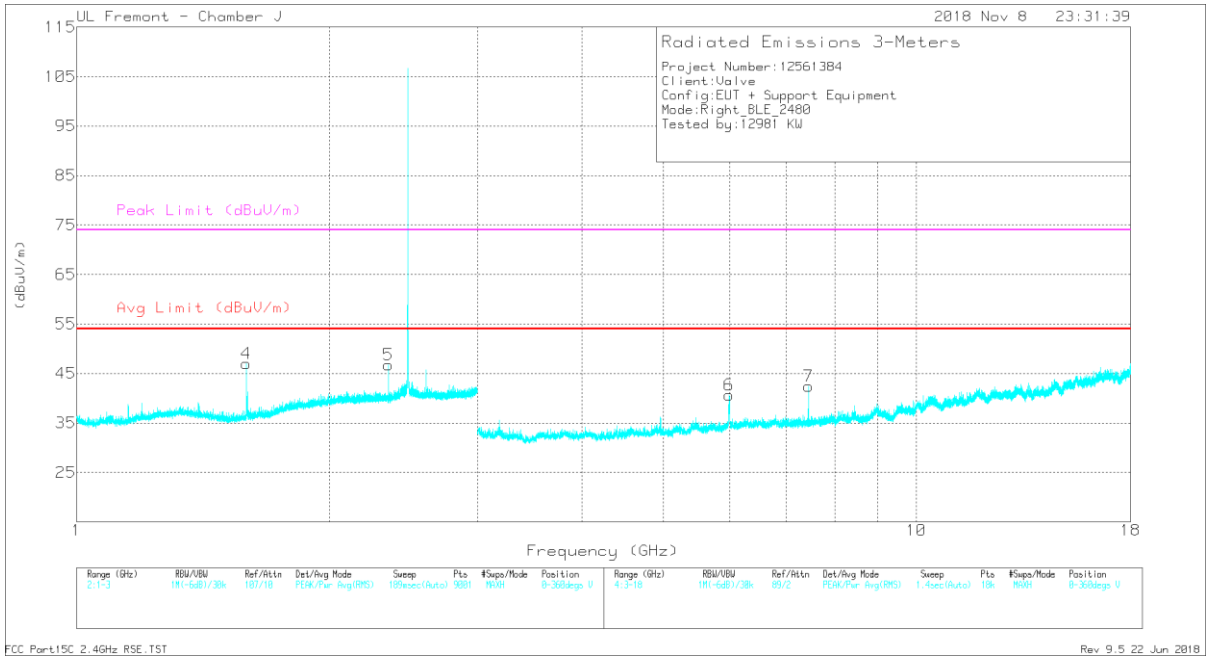
HIGH CHANNEL RESULTS



HORIZONTAL



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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF AT0067 (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	* 1.594	40.49	PK2	28.4	-26.1	0	42.79	-	-	74	-31.21	262	182	H
	* 1.593	32.13	MAv1	28.4	-26.1	2.49	36.92	54	-17.08	-	-	262	182	H
4	* 1.594	48.14	PK2	28.4	-26.1	0	50.44	-	-	74	-23.56	140	173	V
	* 1.595	32.79	MAv1	28.4	-26.1	2.49	37.58	54	-16.42	-	-	140	173	V
5	* 2.354	40.54	PK2	31.9	-25.8	0	46.64	-	-	74	-27.36	182	181	V
	* 2.353	32.13	MAv1	31.9	-25.8	2.49	40.72	54	-13.28	-	-	182	181	V
2	3.187	38.89	Pk	33.2	-34.2	0	37.89	-	-	-	-	0-360	102	H
3	* 7.441	34.34	PK2	35.7	-27.6	0	42.44	-	-	74	-31.56	67	179	H
	* 7.44	25.63	MAv1	35.7	-27.6	2.49	36.22	54	-17.78	-	-	67	179	H
6	5.986	33.7	Pk	35.1	-28.2	0	40.6	-	-	-	-	0-360	101	V
7	* 7.44	34.42	PK2	35.7	-27.6	0	42.52	-	-	74	-31.48	153	186	V
	* 7.44	25.13	MAv1	35.7	-27.6	2.49	35.72	54	-18.28	-	-	153	186	V

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

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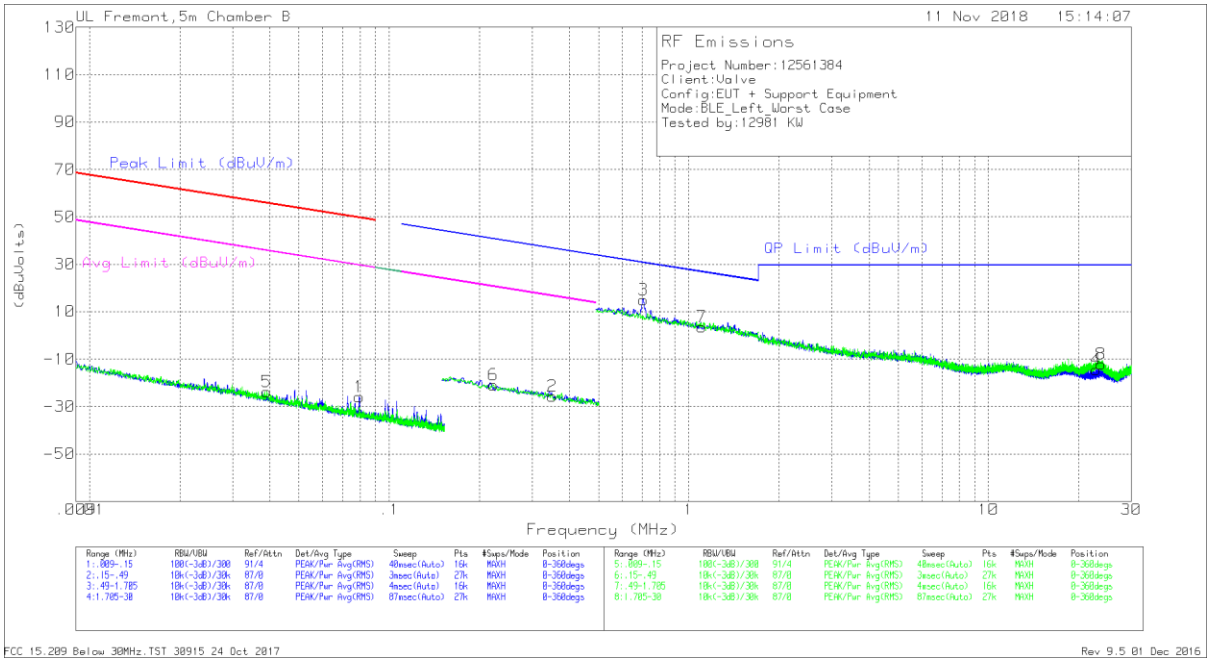
9.3. Worst Case Below 30 MHz (Left Radio)

SPURIOUS EMISSIONS 9 kHz TO 30 MHz (WORST-CASE CONFIGURATION)

HORIZONTAL AND VERTICAL PLOT



NOTE: KDB 414788 OATS and Chamber Correlation Justification

- Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.
- OATs and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

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Below 30 MHz Data

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables (dB)	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
5	.03905	41.3	Pk	15	0	-80	-23.7	55.75	-79.45	35.75	-59.45	0-360
1	.07946	39.76	Pk	14.2	0	-80	-26.04	49.58	-75.62	29.58	-55.62	0-360
6	.2226	45.07	Pk	13.9	.1	-80	-20.93	40.67	-61.6	20.67	-41.6	0-360
2	.35033	40.43	Pk	13.8	.1	-80	-25.67	36.72	-62.39	16.72	-42.39	0-360

Pk - Peak detector

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
3	.70424	40.96	Pk	14	.1	-40	15.06	30.66	-15.6	0-360
7	1.10469	29.1	Pk	14.3	.1	-40	3.5	26.76	-23.26	0-360
4	22.87355	11.21	Pk	13.8	.6	-40	-14.39	29.5	-43.89	0-360
8	23.77693	13.87	Pk	13.3	.6	-40	-12.23	29.5	-41.73	0-360

Pk - Peak detector

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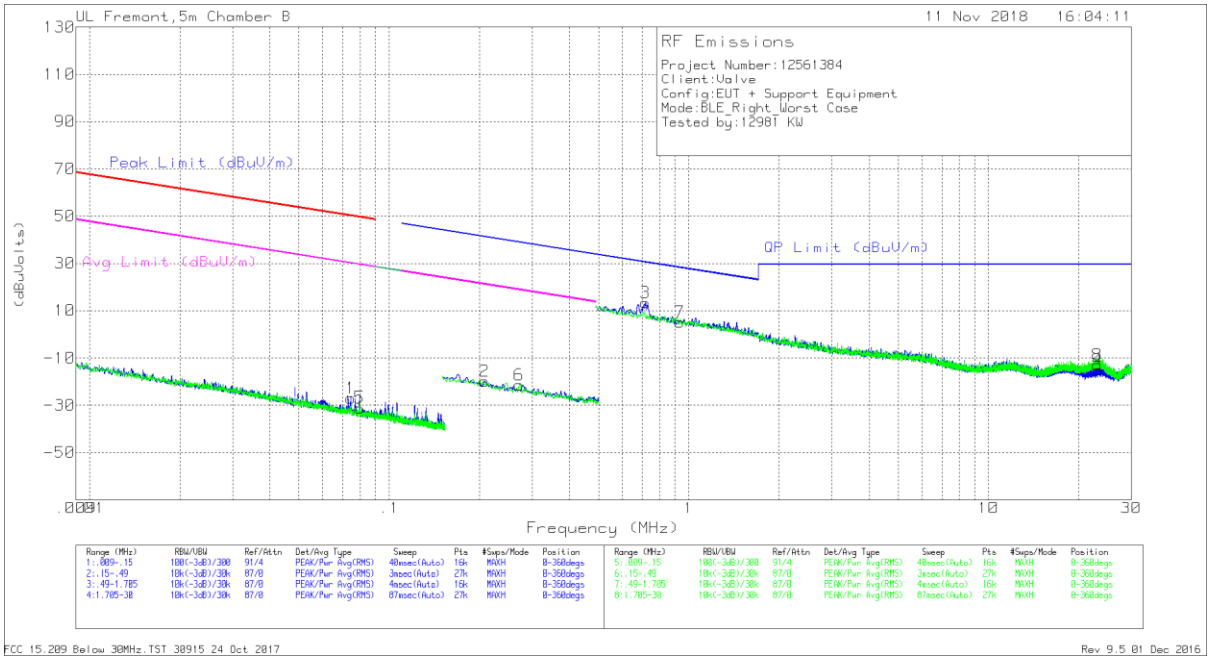
9.4. Worst Case Below 30 MHz (Right Radio)

SPURIOUS EMISSIONS 9 kHz TO 30 MHz (WORST-CASE CONFIGURATION)

HORIZONTAL AND VERTICAL PLOT



NOTE: KDB 414788 OATS and Chamber Correlation Justification

- Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.
- OATs and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

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Below 30 MHz Data

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables (dB)	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	.07442	38.79	Pk	14.2	0	-80	-27.01	50.15	-77.16	30.15	-57.16	0-360
5	.07962	34.68	Pk	14.2	0	-80	-31.12	49.56	-80.68	29.56	-60.68	0-360
2	.20819	46.19	Pk	13.9	.1	-80	-19.81	41.25	-61.06	21.25	-41.06	0-360
6	.27145	44.62	Pk	13.8	.1	-80	-21.48	38.94	-60.42	18.94	-40.42	0-360

Pk - Peak detector

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
3	.71618	39.3	Pk	14	.1	-40	13.4	30.51	-17.11	0-360
7	.93376	30.85	Pk	14.2	.1	-40	5.15	28.22	-23.07	0-360
8	23.10254	12.79	Pk	13.6	.6	-40	-13.01	29.5	-42.51	0-360
4	23.21101	10.69	Pk	13.6	.6	-40	-15.11	29.5	-44.61	0-360

Pk - Peak detector

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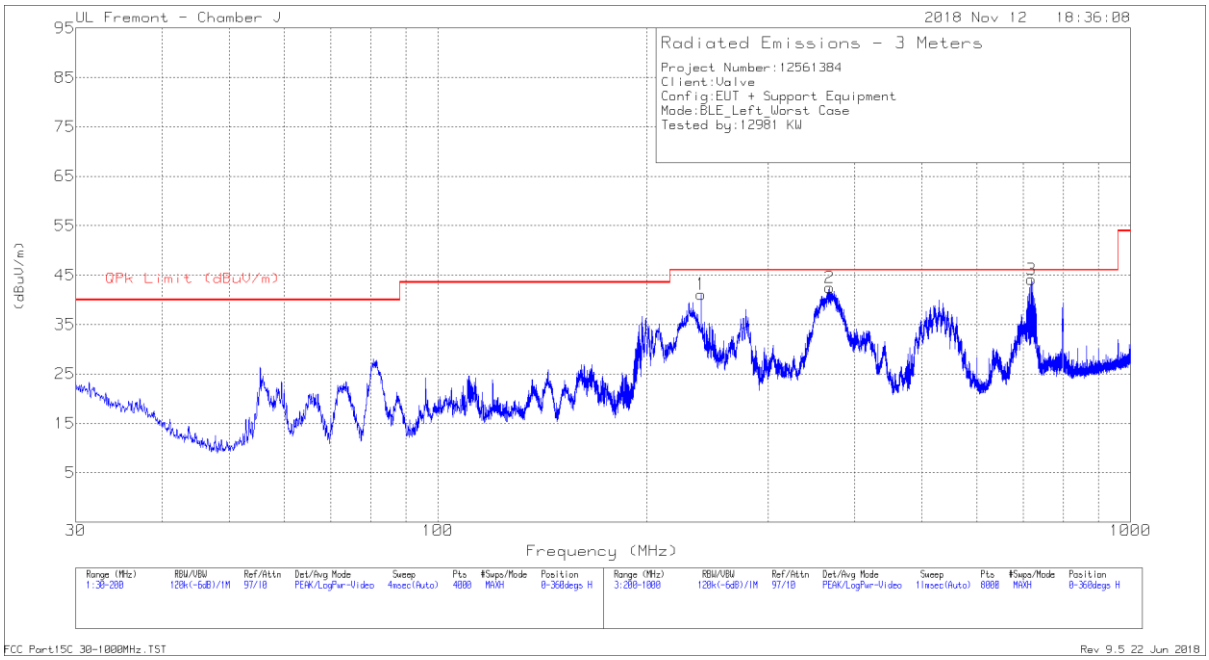
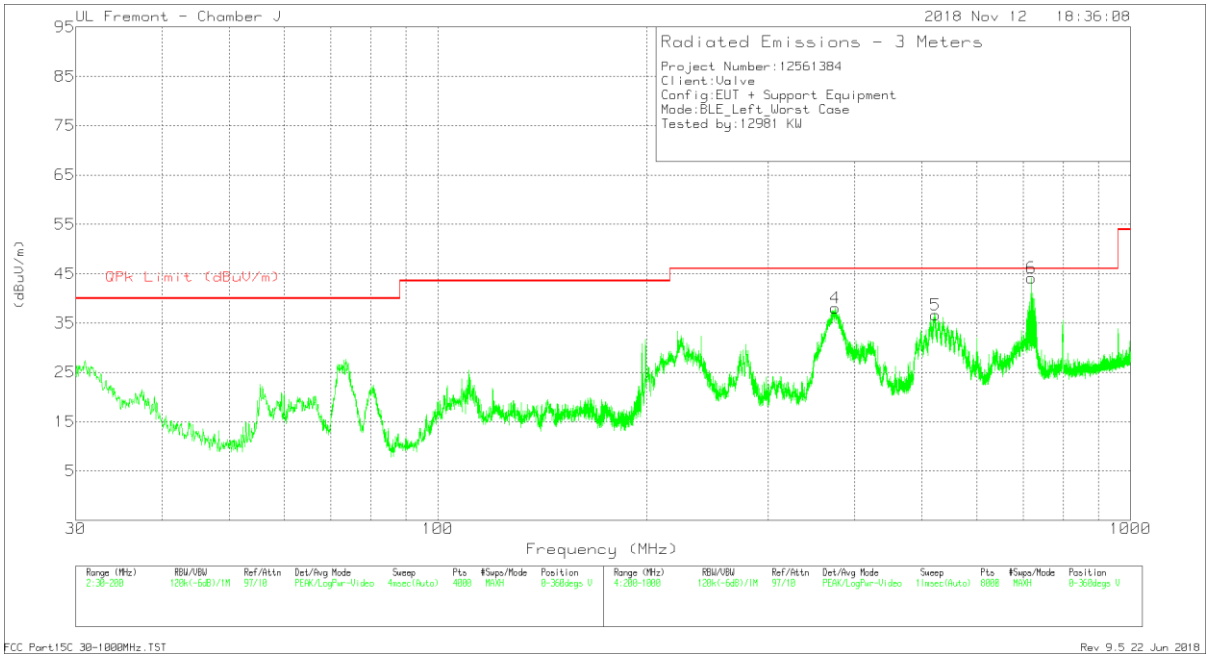
9.5. Worst Case Below 1 GHz (Left Radio)

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



HORIZONTAL



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Below 1GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF PRE0181575 (dB/m)	Amp Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	239.9825	57.75	Pk	17.5	-30.2	45.05	46.02	-.97	329	117	H
	239.9825	53.13	Qp	17.5	-30.2	40.43	46.02	-5.59	329	117	H
2	367.647	51.63	Pk	20.8	-29.7	42.73	46.02	-3.29	359	104	H
	367.647	47.86	Qp	20.8	-29.7	38.96	46.02	-7.06	359	104	H
3	719.982	48.29	Pk	26.4	-28.8	45.89	46.02	-.13	115	114	H
	719.982	45.52	Qp	26.4	-28.8	43.12	46.02	-2.9	115	114	H
4	374.6246	49.29	Pk	20.9	-29.7	40.49	46.02	-5.53	184	133	V
	374.6246	45.61	Qp	20.9	-29.7	36.81	46.02	-9.21	184	133	V
5	523.2205	42.81	Pk	23.7	-29.4	37.11	46.02	-8.91	68	179	V
	523.2205	38.95	Qp	23.7	-29.4	33.25	46.02	-12.77	68	179	V
6	719.9945	46.74	Pk	26.4	-28.8	44.34	46.02	-1.68	99	193	V
	719.9945	44.52	Qp	26.4	-28.8	42.12	46.02	-3.9	99	193	V

Pk - Peak detector
Qp - Quasi-Peak detector

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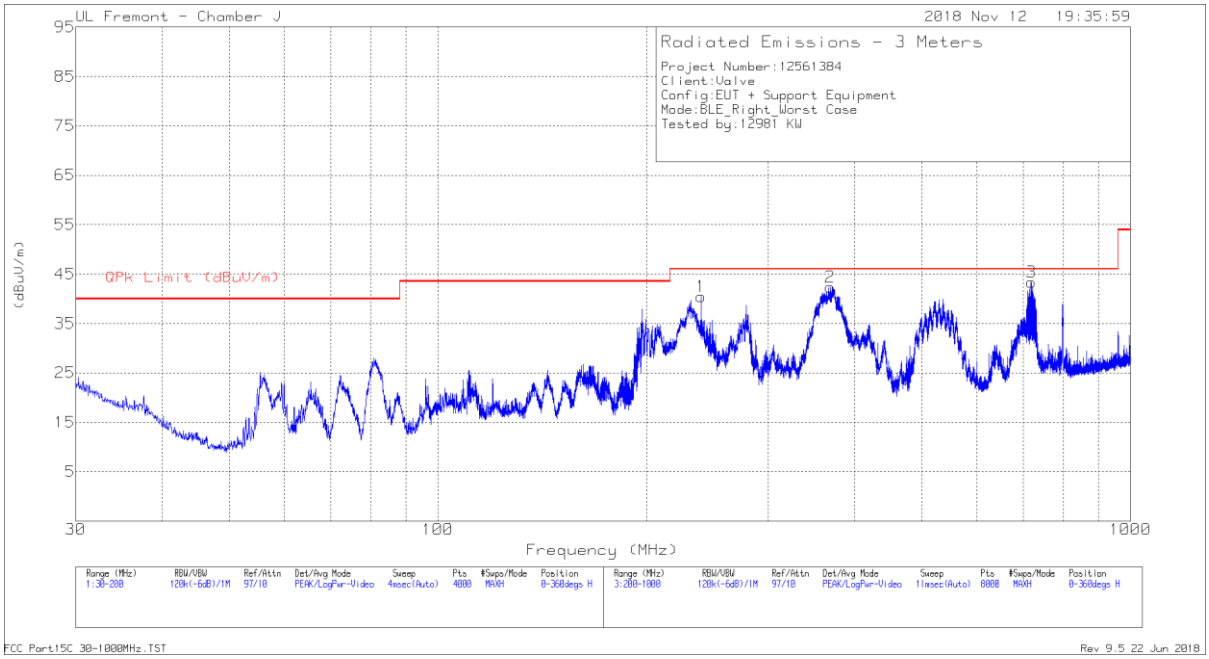
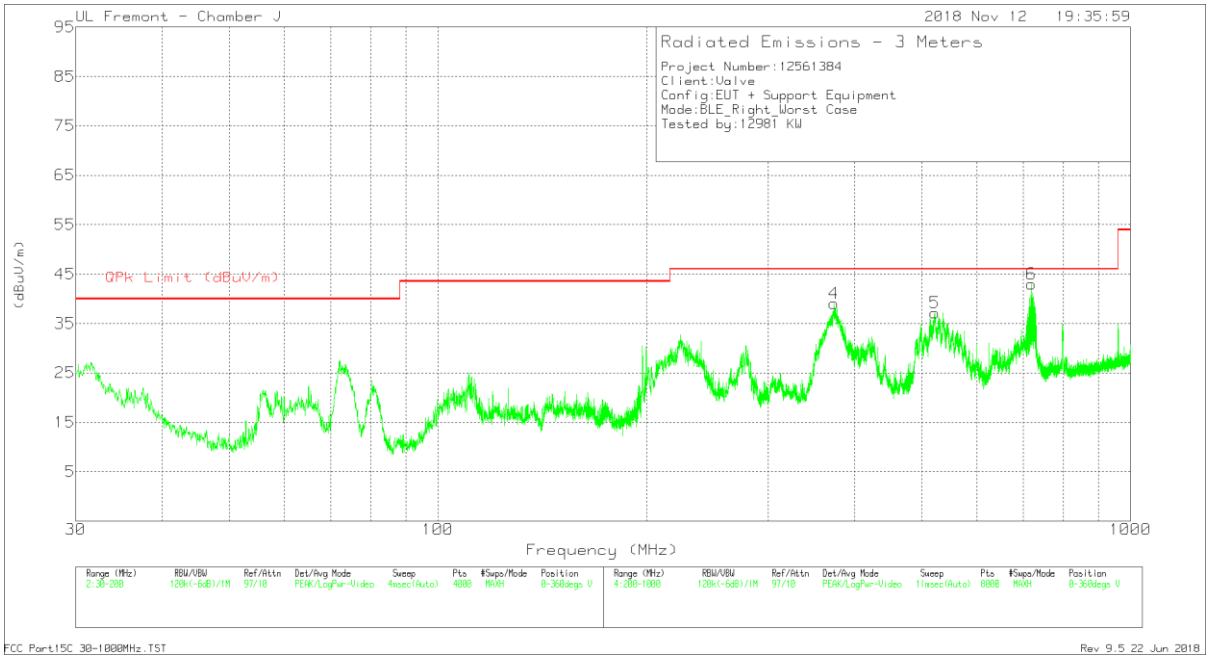
9.6. Worst Case Below 1 GHz (Right Radio)

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



HORIZONTAL



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Below 1GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF PRE0181575 (dB/m)	Amp Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	239.9892	57.64	Pk	17.5	-30.2	44.94	46.02	-1.08	327	127	H
	239.9892	53.64	Qp	17.5	-30.2	40.94	46.02	-5.08	327	127	H
2	368.7427	51.91	Pk	20.8	-29.7	43.01	46.02	-3.01	3	101	H
	368.7427	48.24	Qp	20.8	-29.7	39.34	46.02	-6.68	3	101	H
3	719.9897	48.54	Pk	26.4	-28.8	46.14	46.02	.12	147	112	H
	719.7497	44.86	Qp	26.4	-28.8	42.46	46.02	-3.56	147	112	H
4	373.4617	49.59	Pk	20.8	-29.7	40.69	46.02	-5.33	175	135	V
	373.4617	45.96	Qp	20.8	-29.7	37.06	46.02	-8.96	175	135	V
5	521.7687	44.29	Pk	23.7	-29.3	38.69	46.02	-7.33	227	102	V
	521.5287	40.52	Qp	23.7	-29.3	34.92	46.02	-11.1	227	102	V
6	720.0079	46.68	Pk	26.4	-28.8	44.28	46.02	-1.74	95	226	V
	720.0079	44.48	Qp	26.4	-28.8	42.08	46.02	-3.94	95	226	V

Pk - Peak detector
Qp - Quasi-Peak detector

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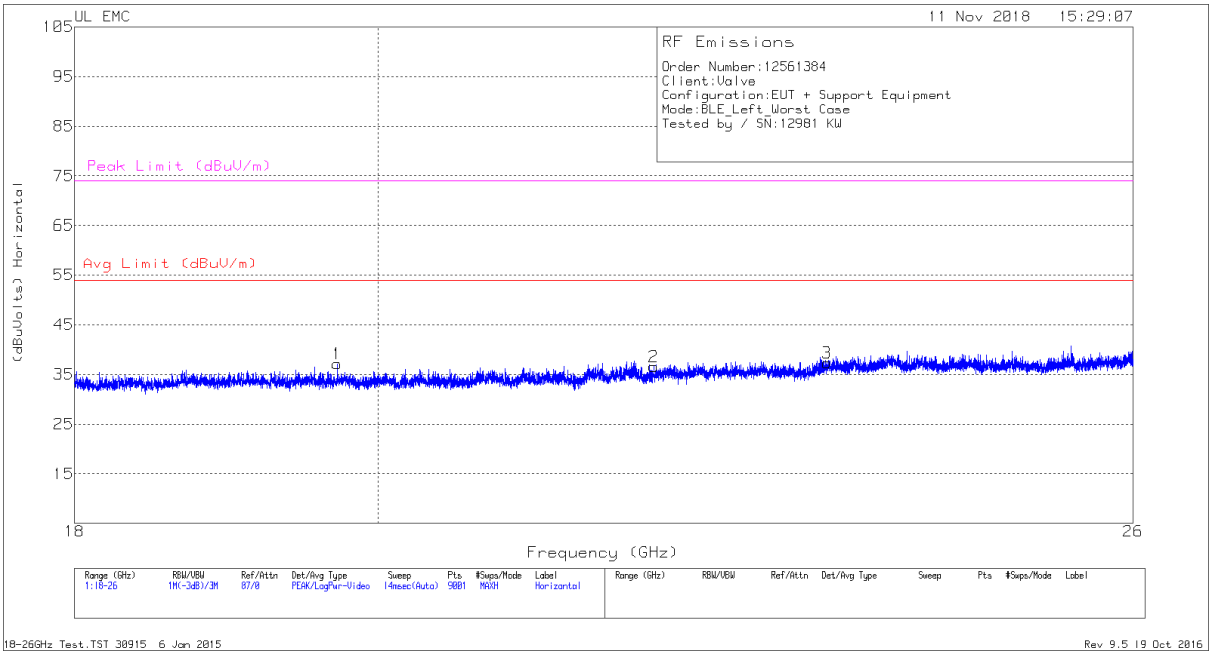
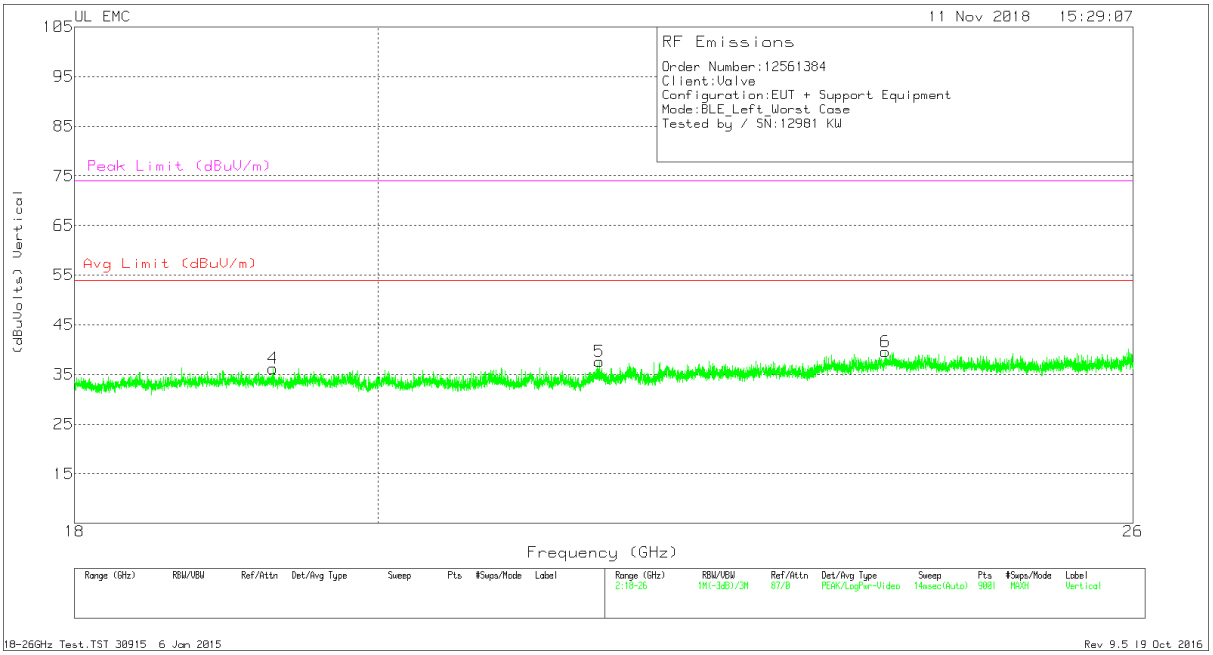
9.7. Worst Case 18-26 GHz (Left Radio)

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



HORIZONTAL



VERTICAL

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18 – 26GHz DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T447 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	19.719	38.91	Pk	32.7	-25	-9.5	37.11	54	-16.89	74	-36.89
2	22.012	37.97	Pk	33.3	-25.2	-9.5	36.57	54	-17.43	74	-37.43
3	23.377	37.42	Pk	33.9	-24.5	-9.5	37.32	54	-16.68	74	-36.68
4	19.285	37.67	Pk	32.7	-24.7	-9.5	36.17	54	-17.83	74	-37.83
5	21.6	39.28	Pk	33.1	-25.3	-9.5	37.58	54	-16.42	74	-36.42
6	23.855	38.99	Pk	34.2	-24.1	-9.5	39.59	54	-14.41	74	-34.41

Pk - Peak detector

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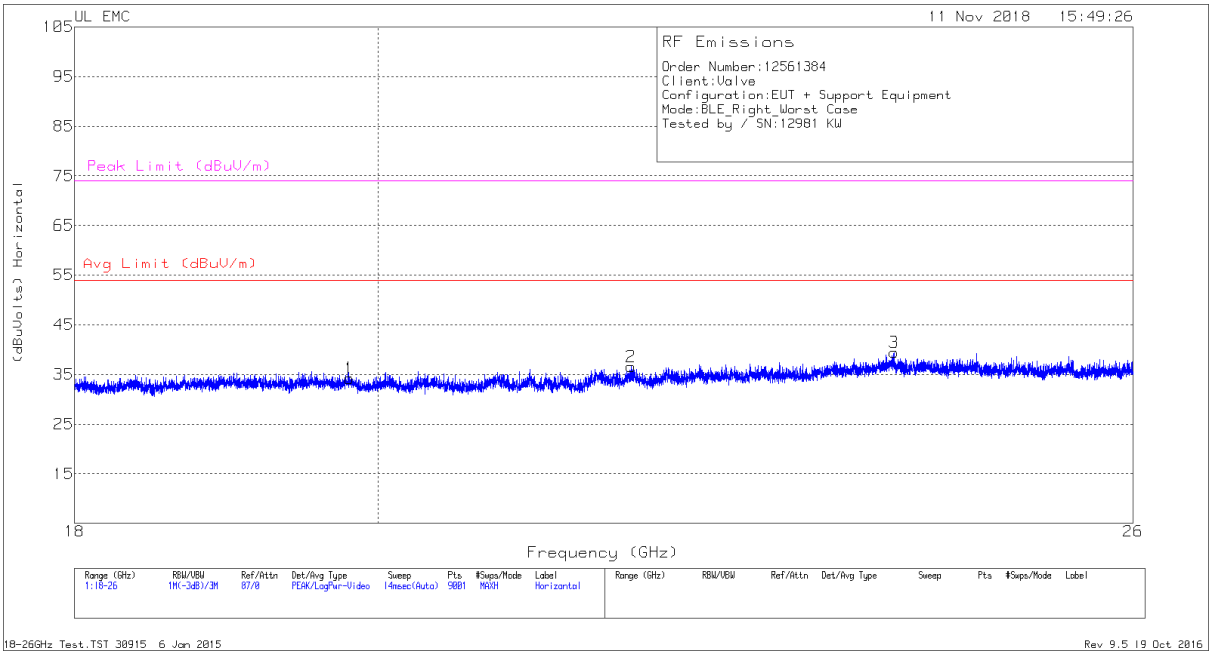
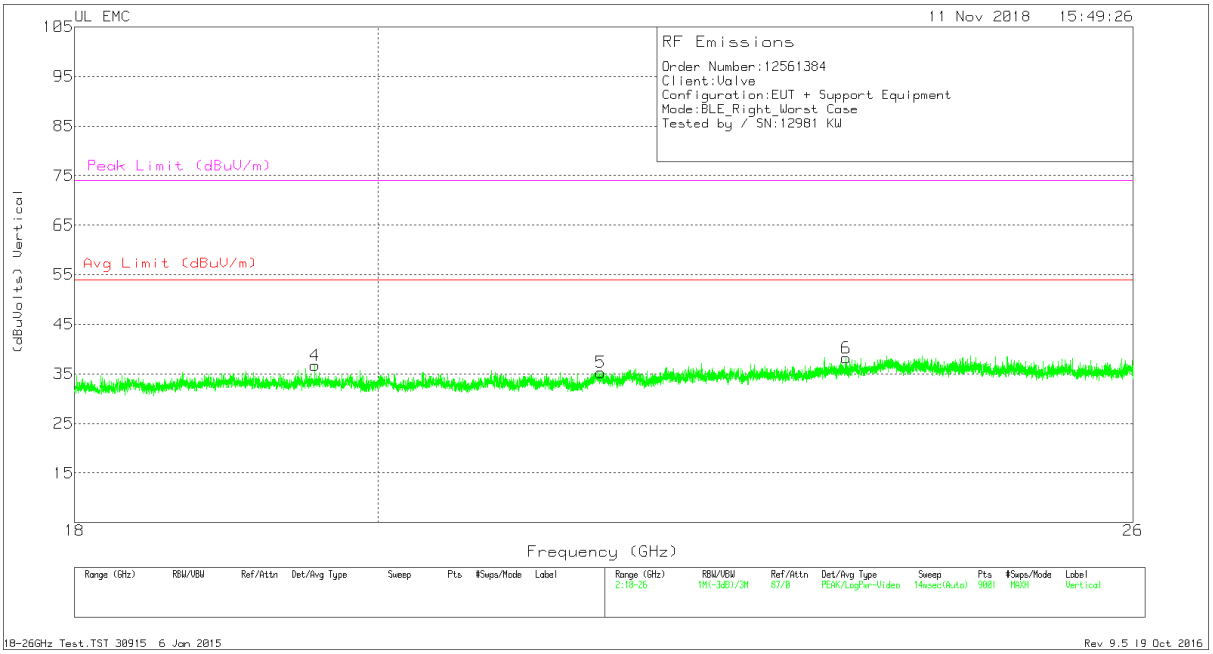
9.8. Worst Case 18-26 GHz (Right Radio)

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



HORIZONTAL



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18 – 26GHz DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T447 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	19.804	36.01	Pk	32.7	-25	-9.5	34.21	54	-19.79	74	-39.79
2	21.84	37.78	Pk	33.2	-24.9	-9.5	36.58	54	-17.42	74	-37.42
3	23.929	38.64	Pk	34.3	-24	-9.5	39.44	54	-14.56	74	-34.56
4	19.566	38.51	Pk	32.8	-25.1	-9.5	36.71	54	-17.29	74	-37.29
5	21.61	36.98	Pk	33.1	-25.3	-9.5	35.28	54	-18.72	74	-38.72
6	23.532	38.18	Pk	34.1	-24.6	-9.5	38.18	54	-15.82	74	-35.82

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 (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

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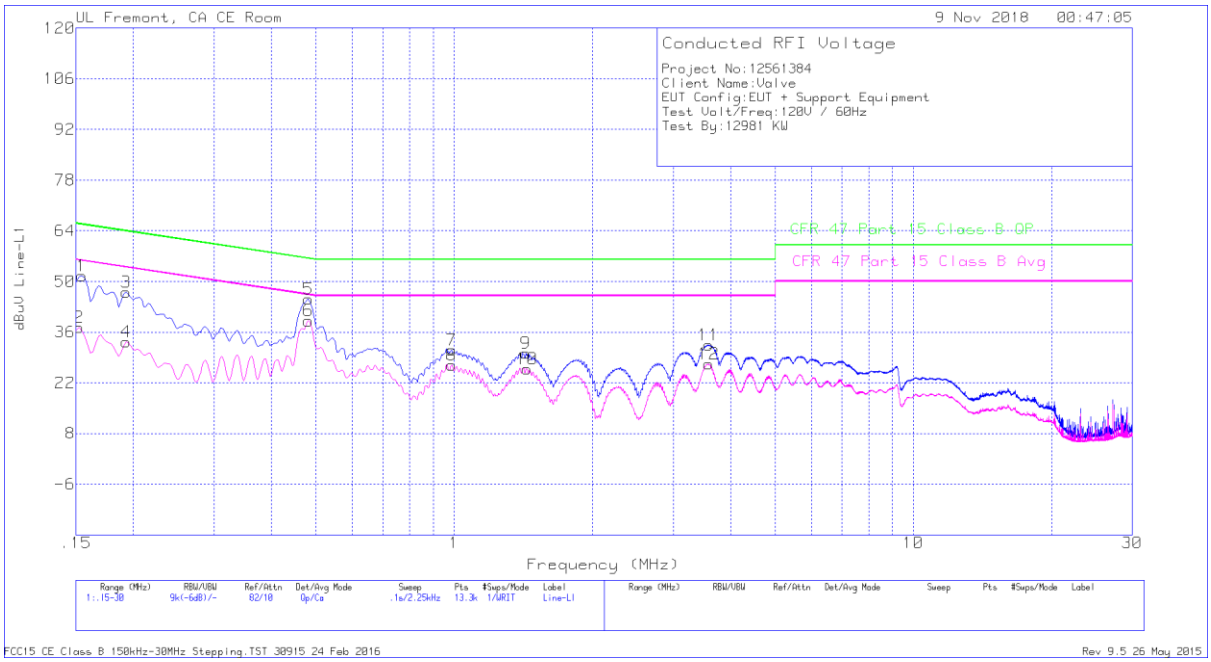
10.1.1. AC Power Line Norm

LINE 1 RESULTS



Trace Markers

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	.1545	41.32	Qp	.1	0	10.1	51.52	65.75	-14.23	-	-
2	.15225	27.11	Ca	.1	0	10.1	37.31	-	-	55.88	-18.57
3	.19275	36.94	Qp	0	0	10.1	47.04	63.92	-16.88	-	-
4	.19275	23.22	Ca	0	0	10.1	33.32	-	-	53.92	-20.6
5	.48075	34.99	Qp	0	0	10.1	45.09	56.33	-11.24	-	-
6	.48075	29.04	Ca	0	0	10.1	39.14	-	-	46.33	-7.19
7	.987	20.88	Qp	0	.1	10.1	31.08	56	-24.92	-	-
8	.987	16.71	Ca	0	.1	10.1	26.91	-	-	46	-19.09
9	1.4325	20.01	Qp	0	.1	10.1	30.21	56	-25.79	-	-
10	1.43925	15.65	Ca	0	.1	10.1	25.85	-	-	46	-20.15
11	3.588	22.27	Qp	0	.1	10.1	32.47	56	-23.53	-	-
12	3.58575	17.06	Ca	0	.1	10.1	27.26	-	-	46	-18.74

Qp - Quasi-Peak detector
Ca - CISPR average detection

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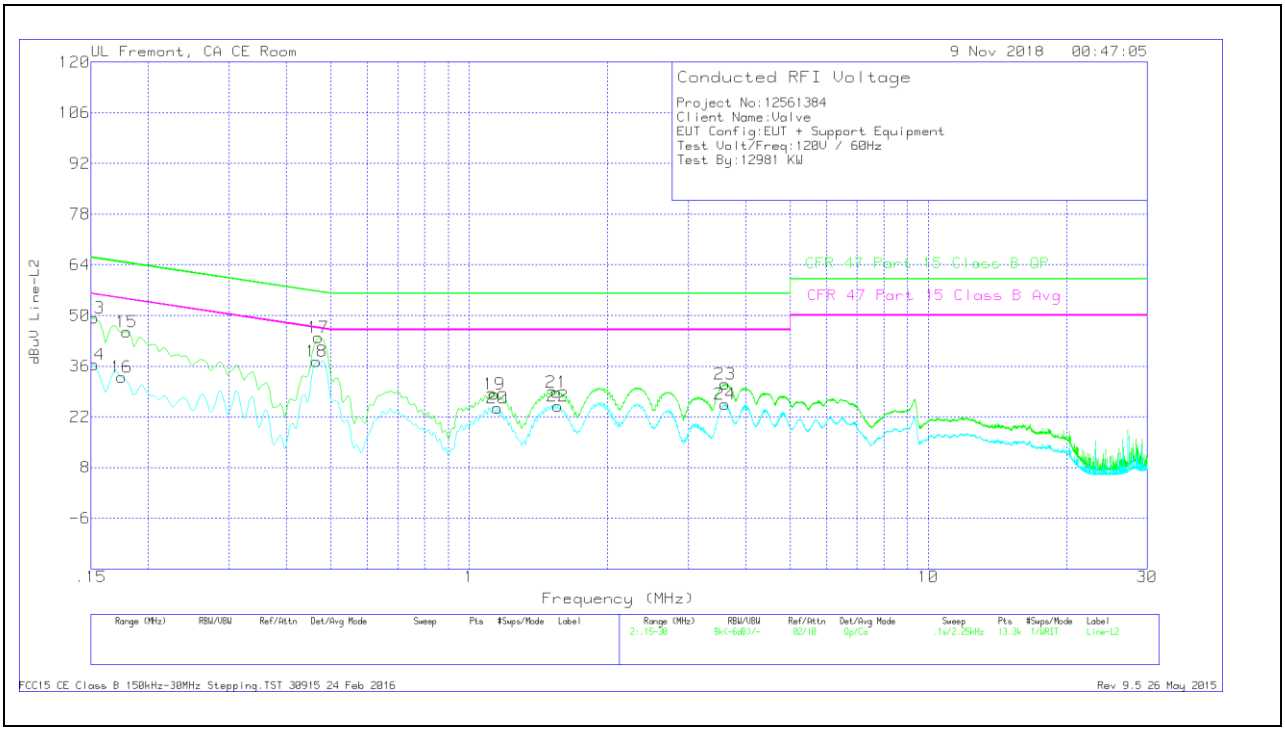
LINE 2 RESULTS



Trace Markers

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)
13	.15225	39.04	Qp	.1	0	10.1	49.24	65.88	-16.64	-	-
14	.15225	26.17	Ca	.1	0	10.1	36.37	-	-	55.88	-19.51
15	.17925	35.3	Qp	0	0	10.1	45.4	64.52	-19.12	-	-
16	.17475	22.85	Ca	0	0	10.1	32.95	-	-	54.73	-21.78
17	.4695	33.75	Qp	0	0	10.1	43.85	56.52	-12.67	-	-
18	.465	27.22	Ca	0	0	10.1	37.32	-	-	46.6	-9.28
19	1.1355	18.06	Qp	0	.1	10.1	28.26	56	-27.74	-	-
20	1.1535	14.24	Ca	0	.1	10.1	24.44	-	-	46	-21.56
21	1.55175	18.64	Qp	0	.1	10.1	28.84	56	-27.16	-	-
22	1.5585	14.81	Ca	0	.1	10.1	25.01	-	-	46	-20.99
23	3.6105	20.91	Qp	0	.1	10.1	31.11	56	-24.89	-	-
24	3.6105	15.24	Ca	0	.1	10.1	25.44	-	-	46	-20.56

Qp - Quasi-Peak detector
Ca - CISPR average detection

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