



**FCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 8**

CERTIFICATION TEST REPORT

FOR

Ligth Dimmer with Bluetooth LE

MODEL NUMBER: DDMX1

FCC ID: QGH-DDMX1

IC: 2473A-DDMX1

REPORT NUMBER: 11081167A

ISSUE DATE: December 16, 2015

Prepared for
Levition Mfg Co.
201 N. Service Rd
Melville, NY 11747
USA

Prepared by
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NVLAP Lab code: 100414-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	20151216	Initial Issue	BM

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Leviton Mft Co.
201 N. Service Rd.
Melville, NY 11747

EUT DESCRIPTION: Ligth Dimmer with Bluetooth LE

MODEL: DDMX-1 (the same logic board with the radio is usd in models
DDS15 and DDL06)

SERIAL NUMBER: Non Serialized

DATE TESTED: December 14, 2015 thru December 15, 2015

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-210 Issue 8 A2.9	Pass
INDUSTRY CANADA RSS-GEN Issue 4	Pass

UL LLC 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 LLC 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 LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC 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 any government.

Test Engineer:



Bartlomiej Mucha
Staff Engineer
Consumer Technology Division

Reviewer:



Michael Ferrer
Program Manager
Consumer Technology Division

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 4, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 333 Pfingsten Road, Northbrook, IL 60062 USA.

UL NBK is accredited by NVLAP, Laboratory Code 100414-0. The full scope of accreditation can be viewed at <http://ts.nist.gov>

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

Sample Calculations

Radiated Field Strength and Conducted Emissions data contained within this report is calculated on the following basis:

Field Strength (dBuV/m) = Meter Reading (dBuV) + AF (dB/m) - Gain (dB) + Cable Loss (dB)

Conducted Voltage (dBuV) = Meter Reading (dBuV) + Cable Loss (dB) + LISN IL (dB)

Conducted Current (dBuA) = Meter Reading (dBuV) + Cable Loss (dB) - Transducer Factor (dBohms)

4.3. MEASUREMENT UNCERTAINTY

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

Test	Range	Equipment	Uncertainty k=2
Radiated Emissions	30-200MHz	Bicon 10m Horz	4.27dB
Radiated Emissions	30-200MHz	Bicon 10m Vert	4.28dB
Radiated Emissions	200-1000MHz	LogP 10m Horz	3.33dB
Radiated Emissions	200-1000MHz	LogP 10m Vert	3.39dB
Radiated Emissions	1-6GHz	Horn	5.02dB
Radiated Emissions	6-18GHz	Horn	5.34dB
Radiated Emissions	18-26GHz	Horn	6.60dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT (Equipment Under Test) is a dimmer switch with BT LE radio.

5.2. MAXIMUM OUTPUT E-FIELD STRENGTH

The transmitter has a maximum output average E-field as follows:

Frequency Range (MHz)	Mode	Output AV E-field Strength (dBuV/m)
2402-2480	TX	86.71

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an integral trace antenna.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was version 4.5.

The EUT driver software installed during testing was N/A.

The test utility software used during testing was rev. 1.0.

5.5. WORST-CASE CONFIGURATION AND MODE

EUT only operates with in single mode and single orientation and it was tested as such.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Programming Cable	FTDI			N/A
Laptop	Lenovo	T420	-	N/A
* none of the above equipment was used during testing. Laptop and the cable was used to place the EUT in test mode				

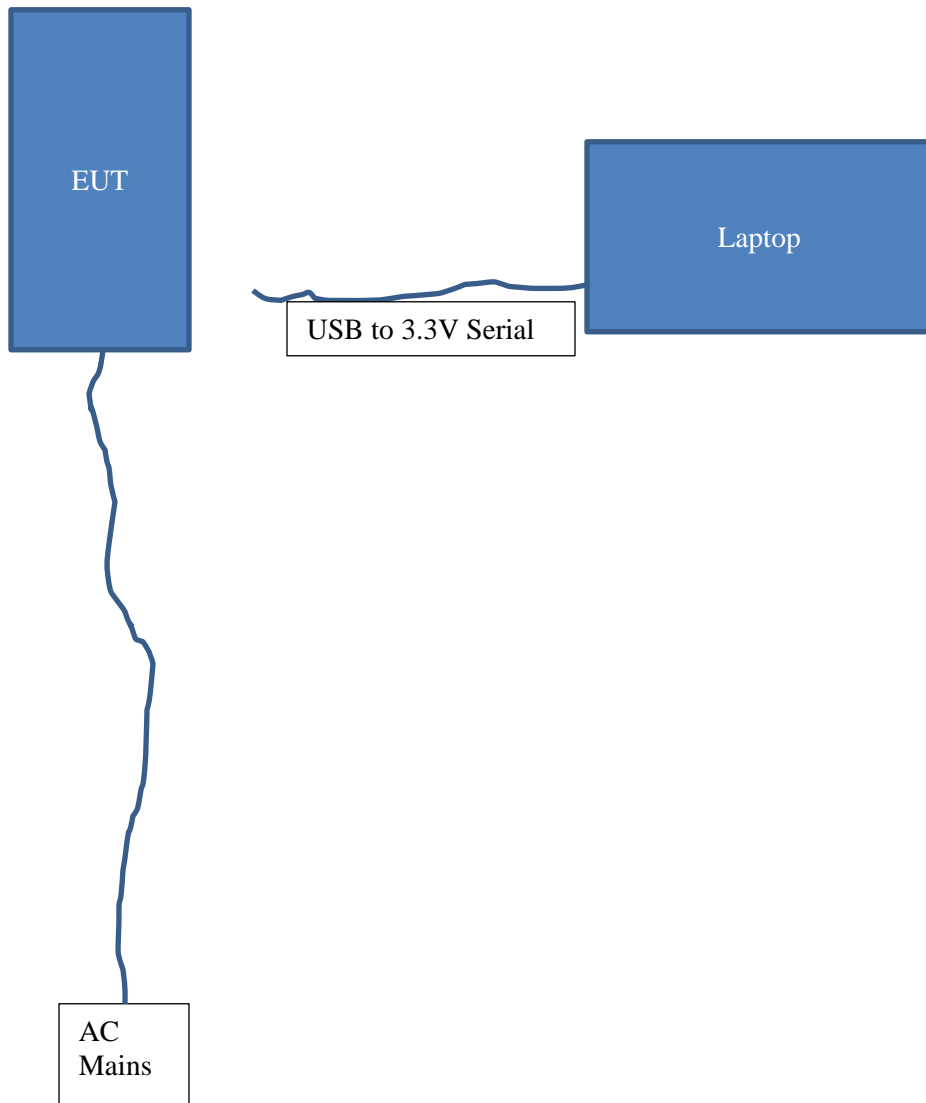
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	wired direct	3 wire AC	1.5m	none
2	I/O	1	pin connecto	serial	1m	only used for programming

TEST SETUP

The EUT is a dimmer switch with Bluetooth radio.

SETUP DIAGRAM FOR TESTS



6. 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	EMC No.	Cal Date	Cal Due
Radiated Software	UL	UL EMC	Ver 9.5, July 22, 2014		
Conducted Software	UL	UL EMC	Ver 9.5, May 17 2012		
EMI Test Receiver	Rohde & Schwarz	ESU	EMC4323	20141216	20151231
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC4328	20141830	20151231
Log-P Antenna	Chase	UPA6109	EMC4258	20150427	20160430
Antenna Array	UL	BOMS	EMC4276	20141201	20151231
Spectrum Analyzer	Agilent	N9030A (PXA)	EMC4360	20141219	20151219
BiCon Antenna (RTP)	Schaffner	VBA6106A	AT0025	20151008	20161031

7. TEST RESULTS

7.1.1. 99% BANDWIDTH

LIMITS

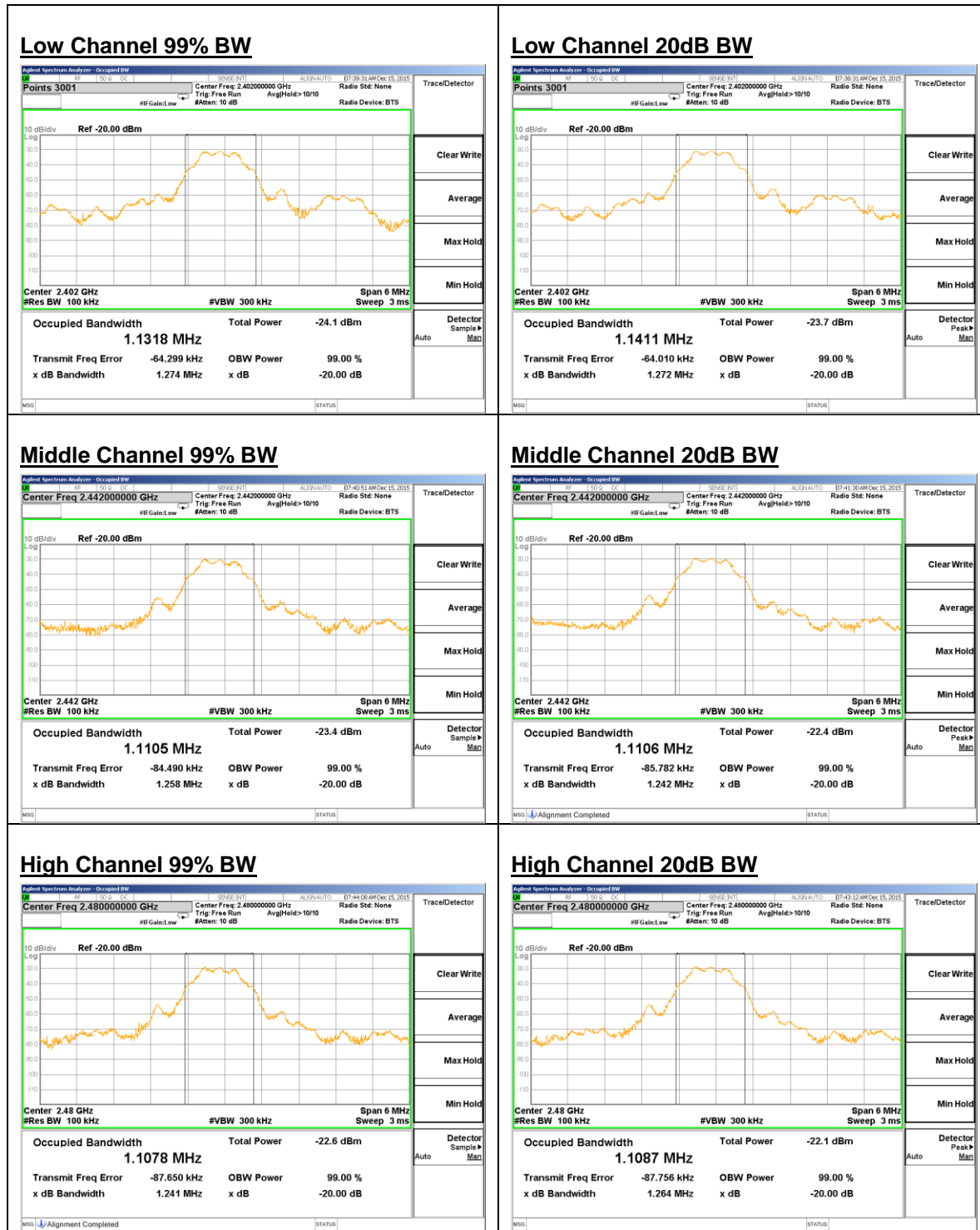
None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. 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)	20dB Bandwidth (MHz)
Low	2402	1.1318	1.272
Middle	2442	1.1105	1.242
High	2480	1.1078	1.264



7.2. RADIATED EMISSIONS

LIMIT

IC RSS-210, A2.9
 FCC 15.249

Operation within the bands 902–928 MHz, 2400–2483.5 MHz, 5725–5875 MHz, and 24.0–24.25 GHz.

(a) Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

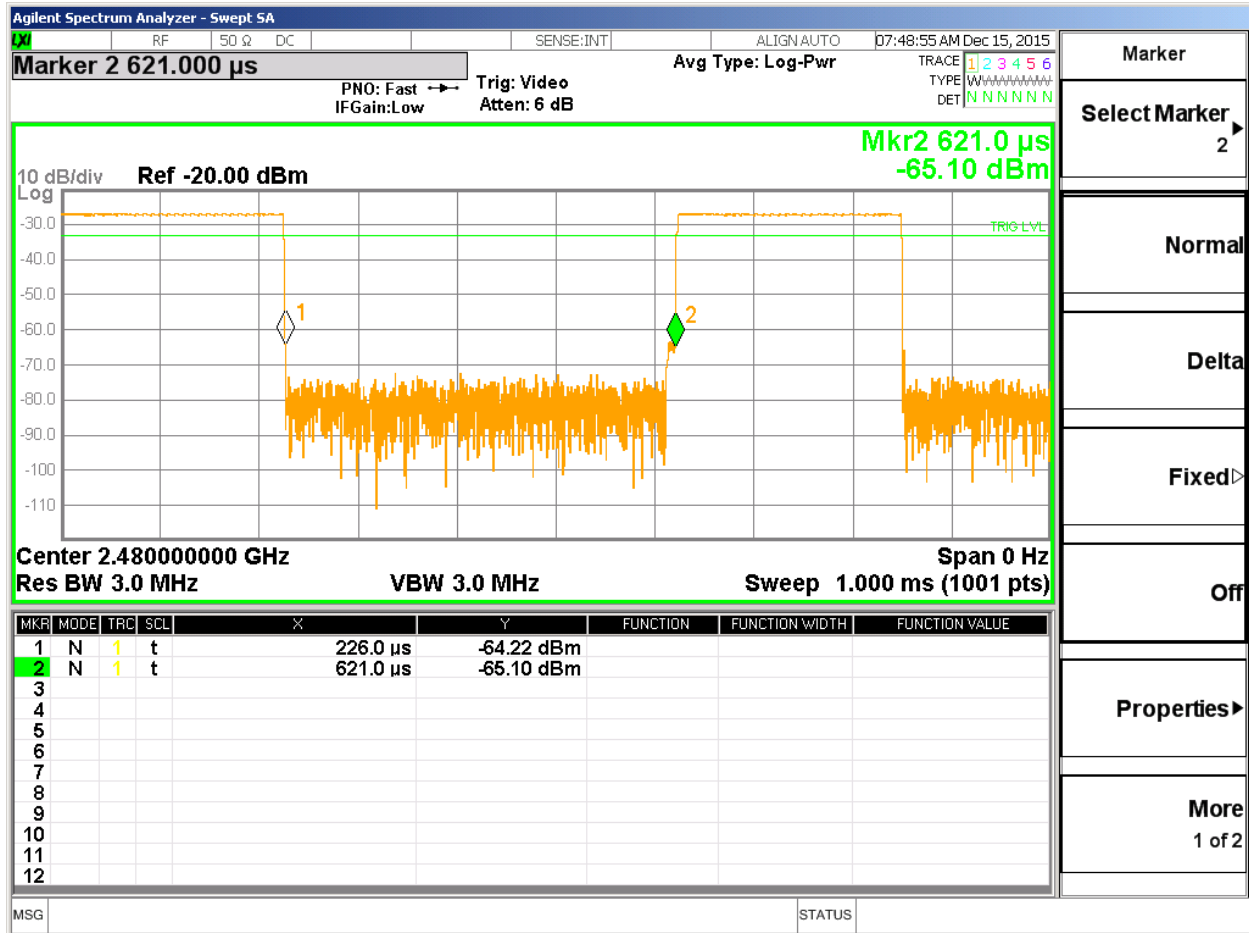
(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
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.

RESULTS

7.2.1. PULSE DURATION – USED TO DETERMINE AVERAGING VBW



Averaging VBW (Hz) = 1 / T where T is the pulse duration in seconds

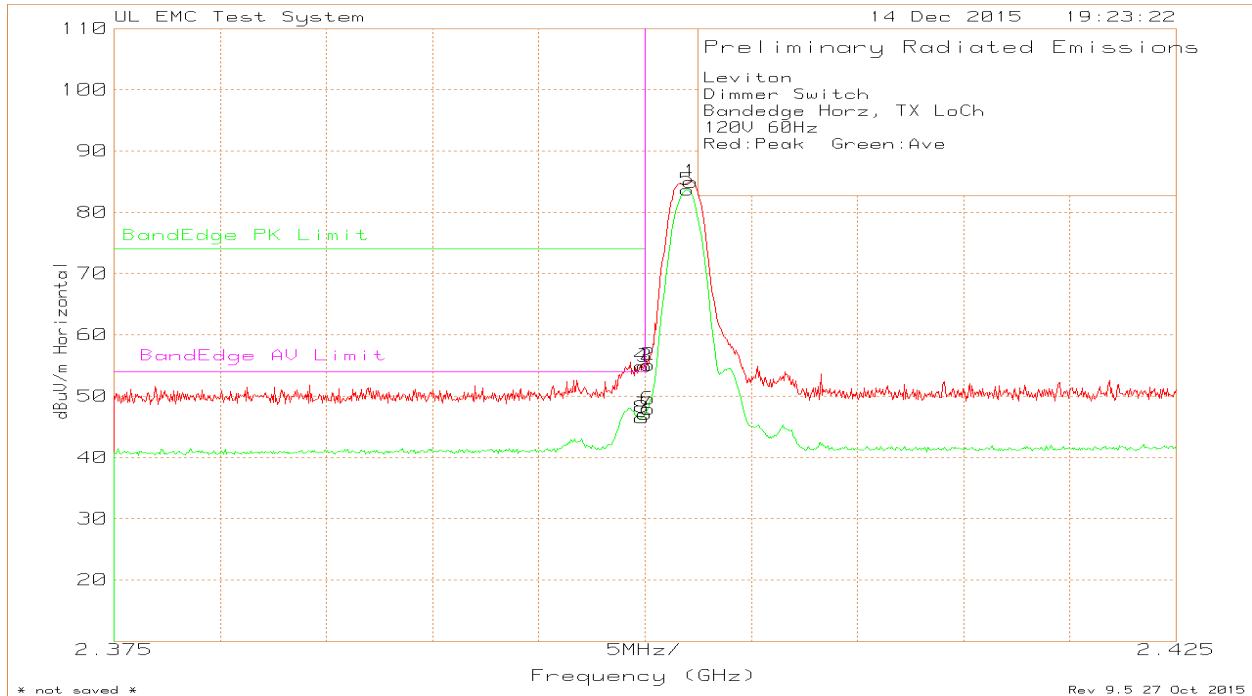
$$VBW = 1/0.000226 = 4425\text{Hz} = 5\text{kHz}$$

7.2.2. FUNDAMENTAL FREQUENCY RADIATED EMISSION

Leviton										
Dimmer Switch										
Fundamental										
120V 60Hz										
Red:Peak Green:Ave										
Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path Factor dB	Level dBuV/m	Limit Part 15.249 dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
2.4021	58.59	Pk	21.8	4.64	85.03	114	-28.97	267	147	H
2.4019	57.22	Av	21.8	4.64	83.66	94	-10.34	267	147	H
2.4021	61.7	Pk	21.8	4.64	88.14	114	-25.86	312	100	V
2.4019	60.27	Av	21.8	4.64	86.71	94	-7.29	312	100	V
2.4416	58.01	Pk	21.9	4.72	84.63	114	-29.37	267	163	H
2.4419	56.62	Av	21.9	4.72	83.24	94	-10.76	267	163	H
2.4417	60.47	Pk	21.9	4.72	87.09	114	-26.91	311	107	V
2.4419	59.07	Av	21.9	4.72	85.69	94	-8.31	311	107	V
2.4796	56.02	Pk	22	4.74	82.76	114	-31.24	271	186	H
2.4799	54.51	Av	22	4.74	81.25	94	-12.75	271	186	H
2.4797	55.06	Pk	22	4.74	81.8	114	-32.2	317	100	V
2.4799	53.61	Av	22	4.74	80.35	94	-13.65	317	100	V
Pk - Peak Detector										
Av - Average Detector (using Reduced VBW to 5kHz)										

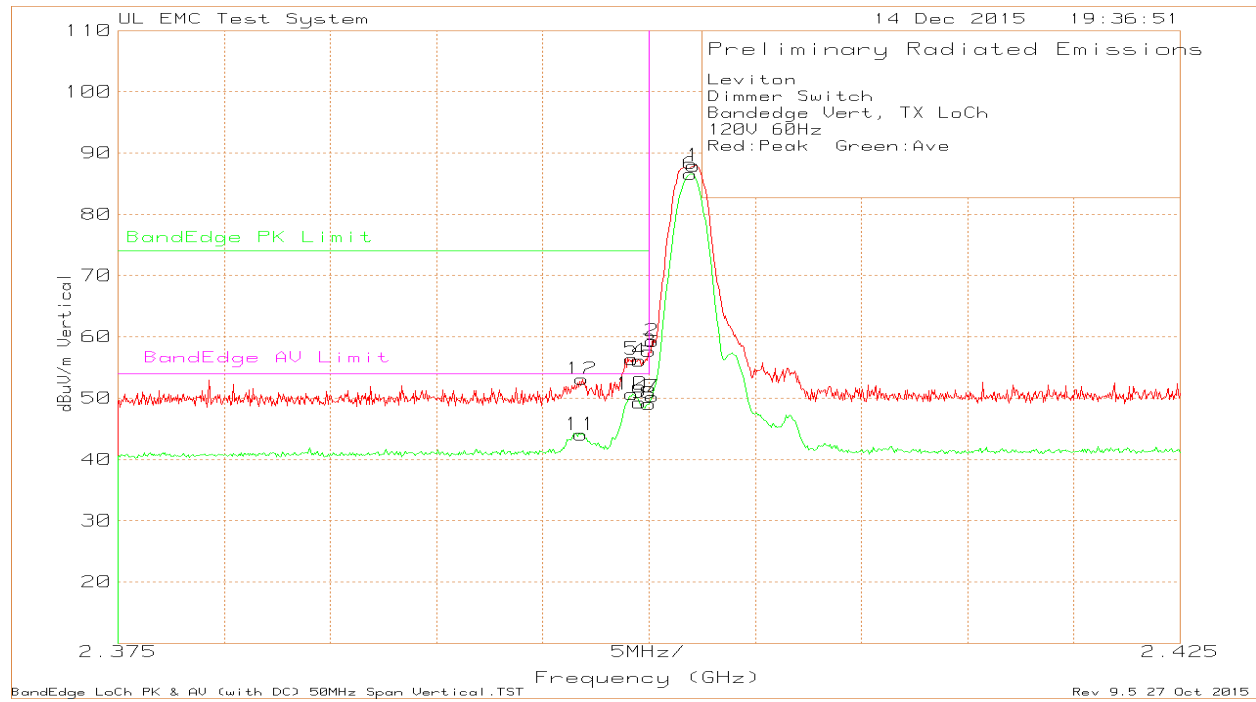
7.2.3. TRANSMITTER RESTRICTED BAND EDGES

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



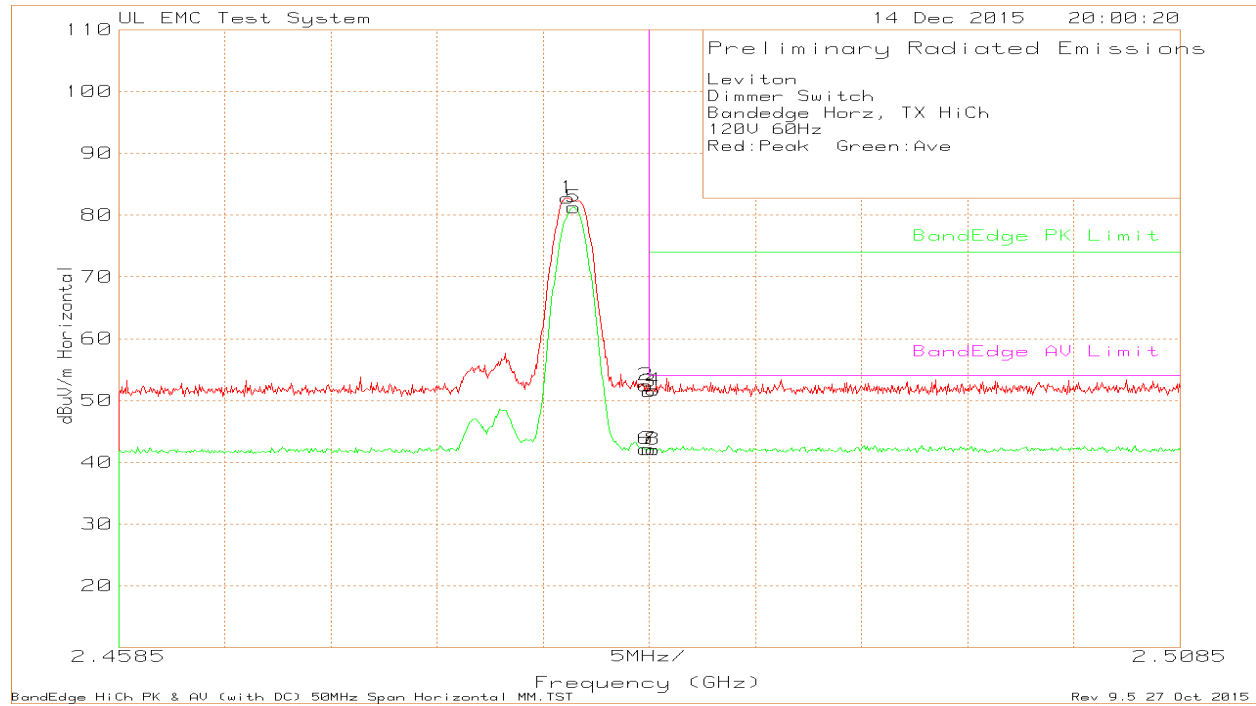
Leviton											
Dimmer Switch											
Bandedge Horz, TX LoCh											
120V 60Hz											
Red:Peak Green:Ave											
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path Factor dB	Level dBuV/m	Peak Limit 15.209 dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	2.4022	58.54	Pk	21.8	4.64	84.98	-	-	267	147	H
2	2.4002	28.68	Pk	21.8	4.64	55.12	-	-	267	147	H
3	2.4	28.42	Pk	21.8	4.64	54.86	74	-19.14	267	147	H
4	2.3999	28.47	Pk	21.8	4.64	54.91	74	-19.09	267	147	H
5	2.402	57.24	Av	21.8	4.64	83.68	-	-	267	147	H
6	2.4002	21.47	Av	21.8	4.64	47.91	-	-	267	147	H
7	2.4	20.65	Av	21.8	4.64	47.09	54	-6.91	267	147	H
8	2.3999	20.04	Av	21.8	4.64	46.48	54	-7.52	267	147	H
Pk - Peak detector											
Av - Average Detector (using Reduced VBW to 5kHz)											

RESTRICTED BANDEDGE (LOW CHANNEL, Vertical)



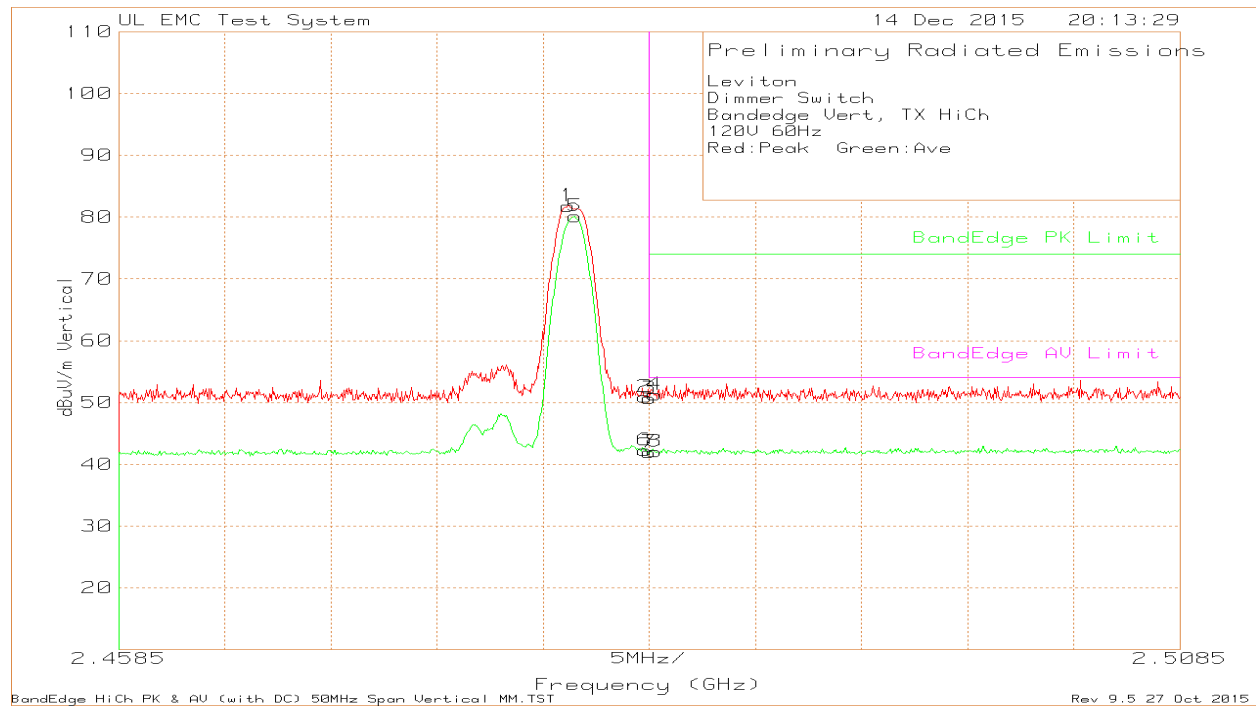
Leviton												
Dimmer Switch												
Bandedge Vert, TX LoCh												
120V 60Hz												
Red:Peak Green:Ave												
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path Factor dB	Level dBuV/m	Limit 15.209 dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity	
1	2.4021	61.49	Pk	21.8	4.64	87.93	-	-	312	99	V	
2	2.4002	32.89	Pk	21.8	4.64	59.33	-	-	312	99	V	
3	2.4	31.24	Pk	21.8	4.64	57.68	74	-16.32	312	99	V	
4	2.3996	29.71	Pk	21.8	4.64	56.15	74	-17.85	312	99	V	
5	2.3992	29.9	Pk	21.8	4.64	56.34	74	-17.66	312	99	V	
12	2.3969	26.67	Pk	21.8	4.65	53.12	74	-20.88	312	99	V	
6	2.402	60.15	Av	21.8	4.64	86.59	-	-	312	99	V	
7	2.4002	23.82	Av	21.8	4.64	50.26	-	-	312	99	V	
8	2.4	22.63	Av	21.8	4.64	49.07	54	-4.93	312	99	V	
9	2.3996	22.84	Av	21.8	4.64	49.28	54	-4.72	312	99	V	
10	2.3992	24.2	Av	21.8	4.64	50.64	54	-3.36	312	99	V	
11	2.3968	17.57	Av	21.8	4.65	44.02	54	-9.98	312	99	V	
Pk - Peak detector												
Av - Average Detector (using Reduced VBW to 5kHz)												

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



Leviton											
Dimmer Switch											
Bandedge Horz, TX HiCh											
120V 60Hz											
Red:Peak Green:Ave											
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path Factor dB	Level dBuV/m	Limit 15.209 dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	2.4797	56.06	Pk	22	4.74	82.8	-	-	271	186	H
2	2.4834	25.62	Pk	22.1	4.76	52.48	-	-	271	186	H
3	2.4835	24.62	Pk	22.1	4.76	51.48	74	-22.52	271	186	H
4	2.4837	24.85	Pk	22.1	4.76	51.71	74	-22.29	271	186	H
5	2.48	54.55	Av	22	4.74	81.29	-	-	271	186	H
6	2.4834	15.3	Av	22.1	4.76	42.16	-	-	271	186	H
7	2.4835	15.27	Av	22.1	4.76	42.13	54	-11.87	271	186	H
8	2.4837	15.21	Av	22.1	4.76	42.07	54	-11.93	271	186	H
Pk - Peak detector											
Av - Average Detector (using Reduced VBW to 5kHz)											

RESTRICTED BANDEDGE (HIGH CHANNEL, Vertical)



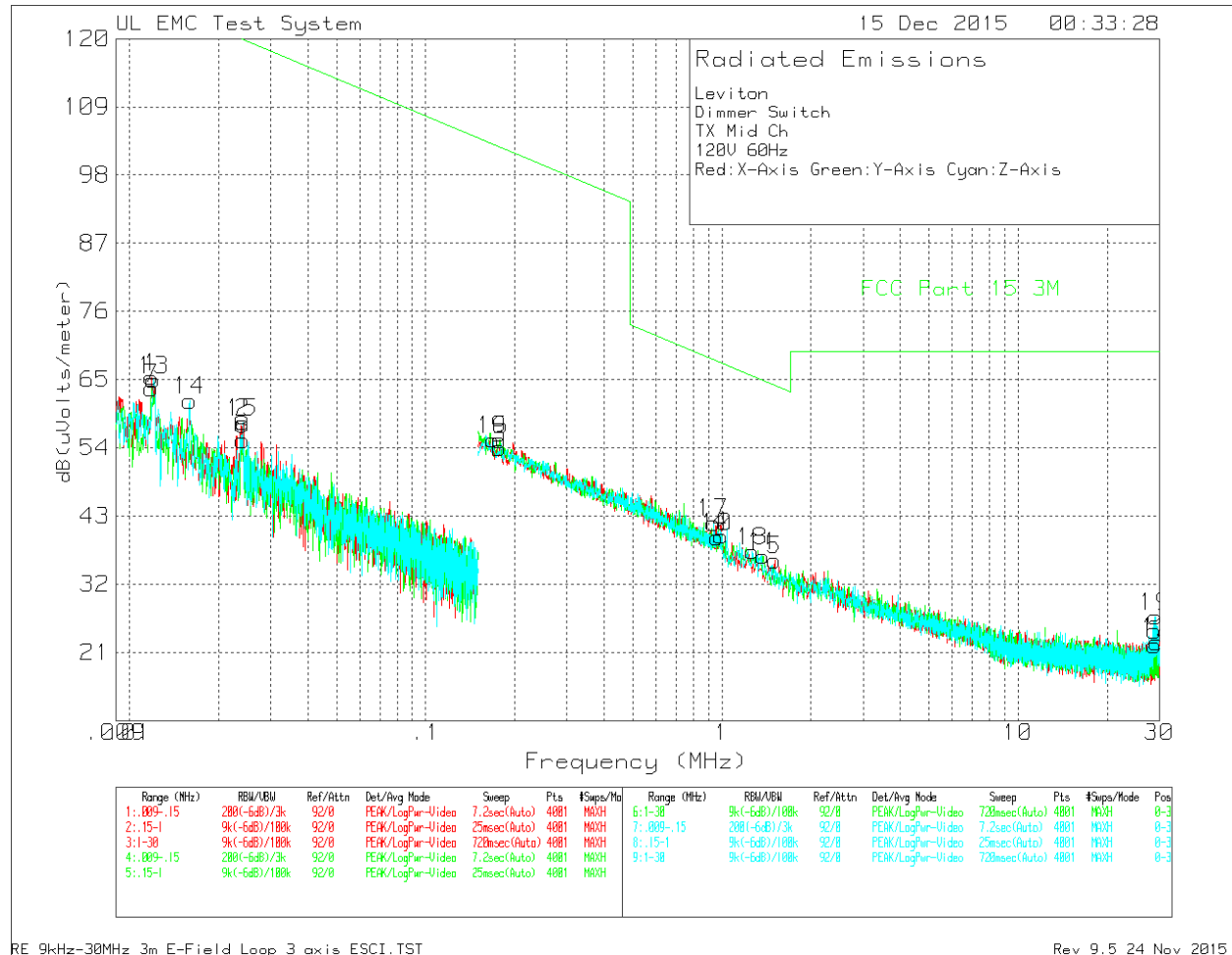
Leviton
 Dimmer Switch
 Bandedge Vert, TX HiCh
 120V 60Hz
 Red:Peak Green:Ave

Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path Factor dB	Level dBuV/m	Limit 15.209 dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	2.4797	55.06	Pk	22	4.74	81.8	-	-	317	100	V
2	2.4833	24.17	Pk	22	4.76	50.93	-	-	317	100	V
3	2.4835	23.82	Pk	22.1	4.76	50.68	74	-23.32	317	100	V
4	2.4838	24.42	Pk	22.1	4.76	51.28	74	-22.72	317	100	V
5	2.48	53.41	Av	22	4.74	80.15	-	-	317	100	V
6	2.4833	15.52	Av	22	4.76	42.28	-	-	317	100	V
7	2.4835	15.11	Av	22.1	4.76	41.97	54	-12.03	317	100	V
8	2.4838	15.22	Av	22.1	4.76	42.08	54	-11.92	317	100	V

Pk - Peak detector
 Av - Average Detector (using Reduced VBW to 5kHz)

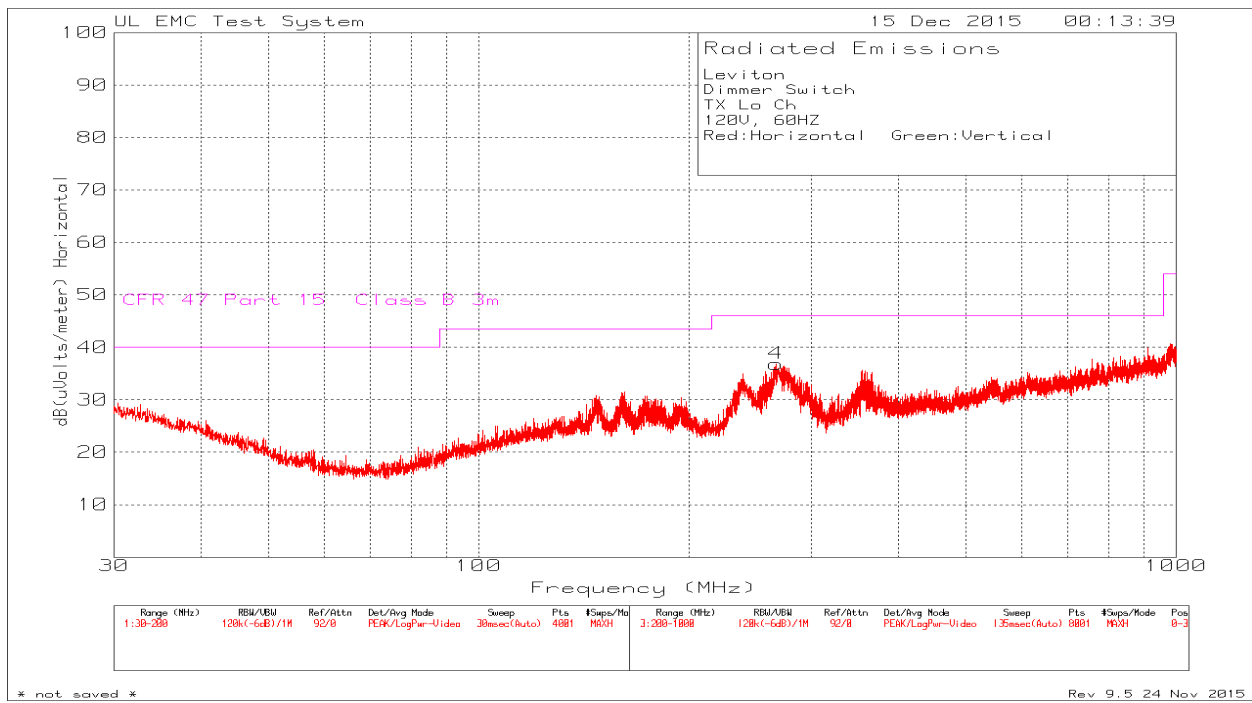
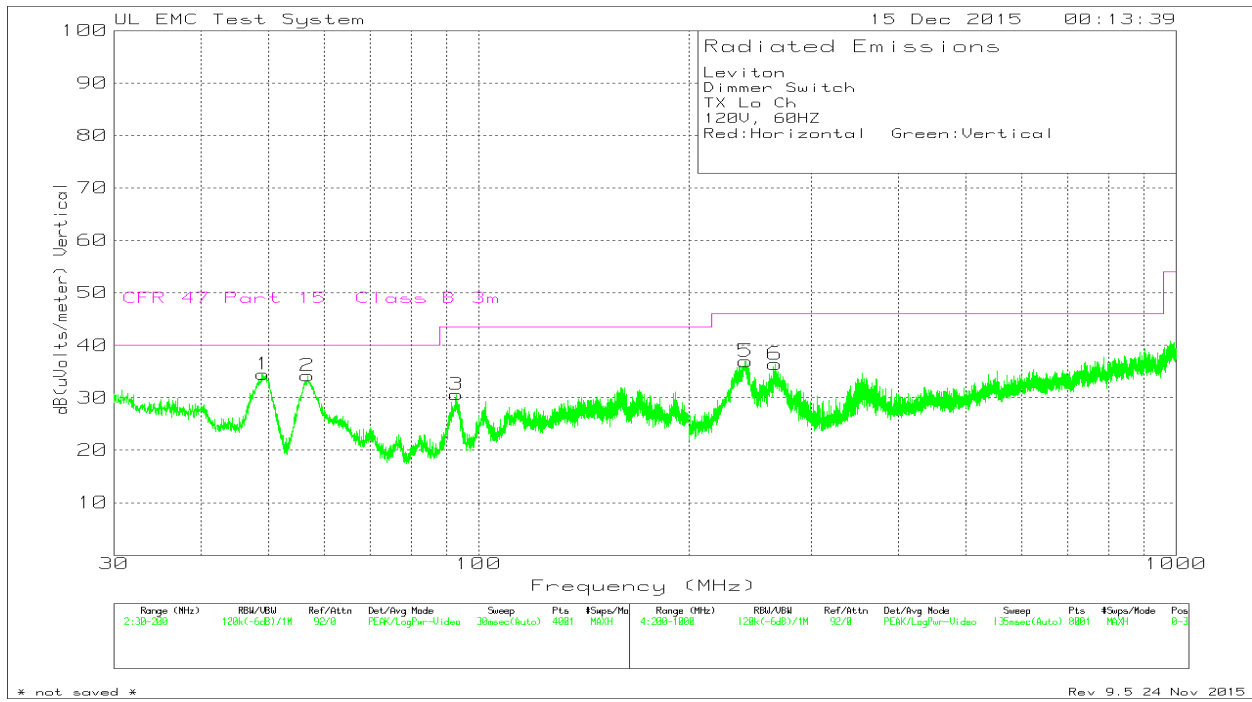
7.2.4. HARMONICS AND SPURIOUS EMISSIONS

9kHz – 30MHz



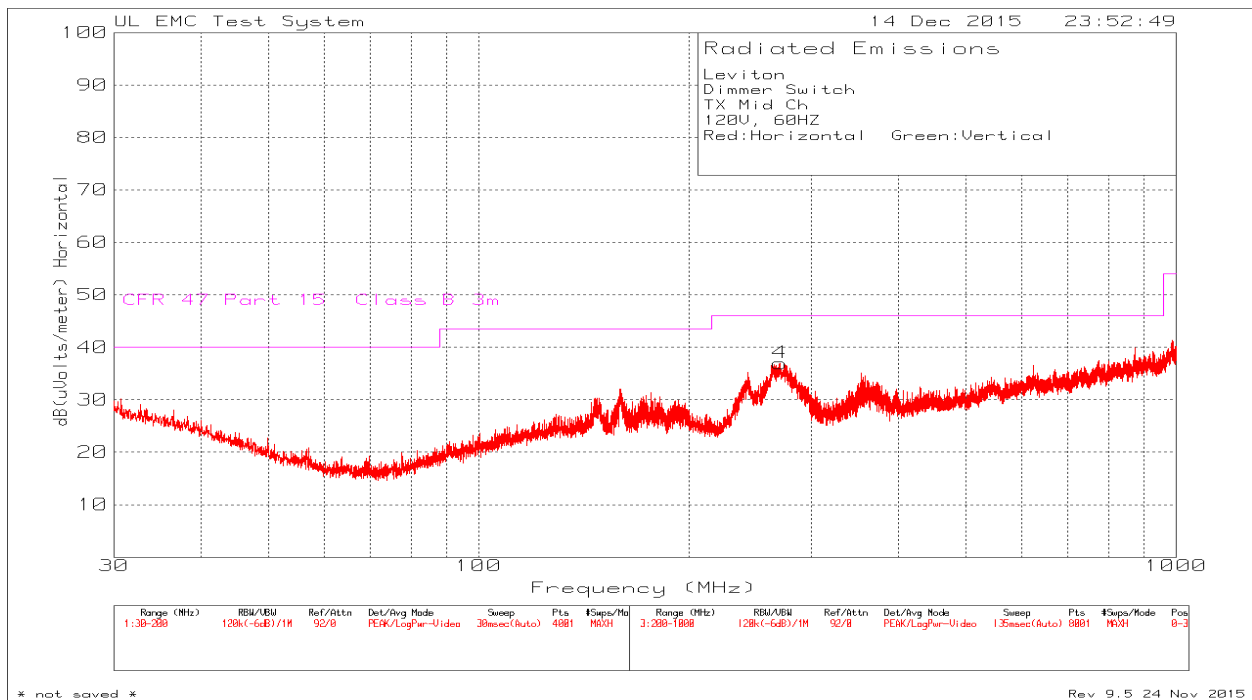
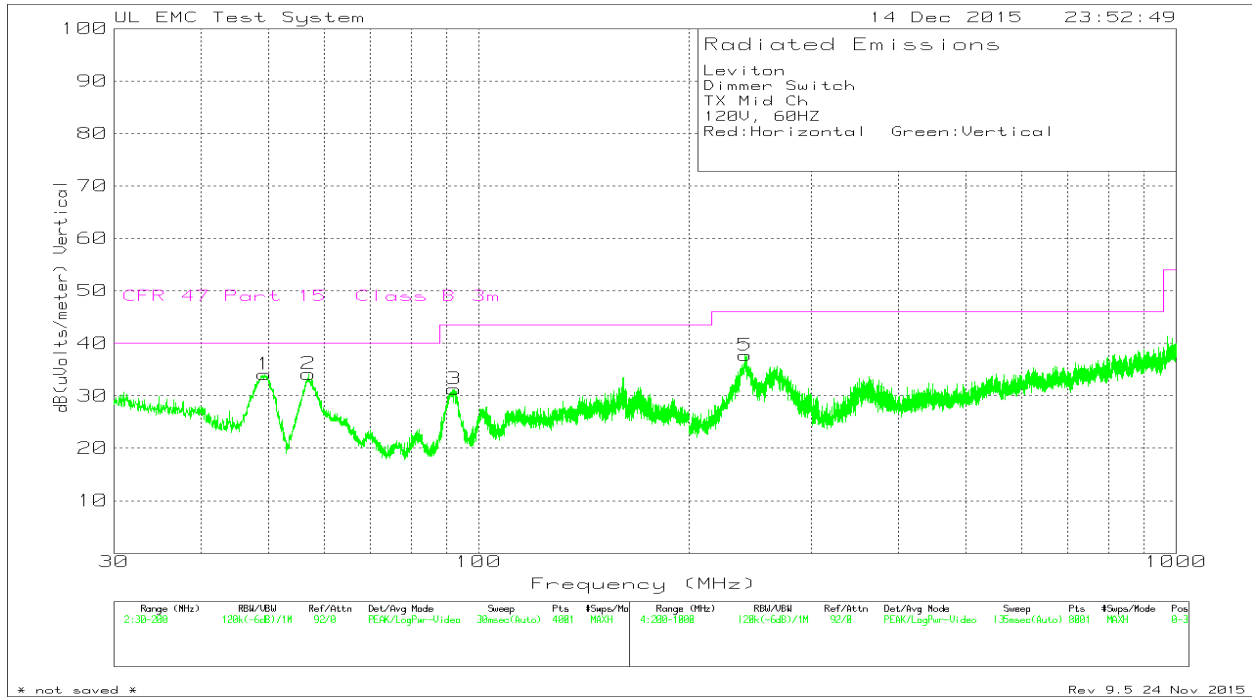
* Antenna oriented in three axis, no emissions were recorded from the device.

30MHz – 1GHz Low Channel



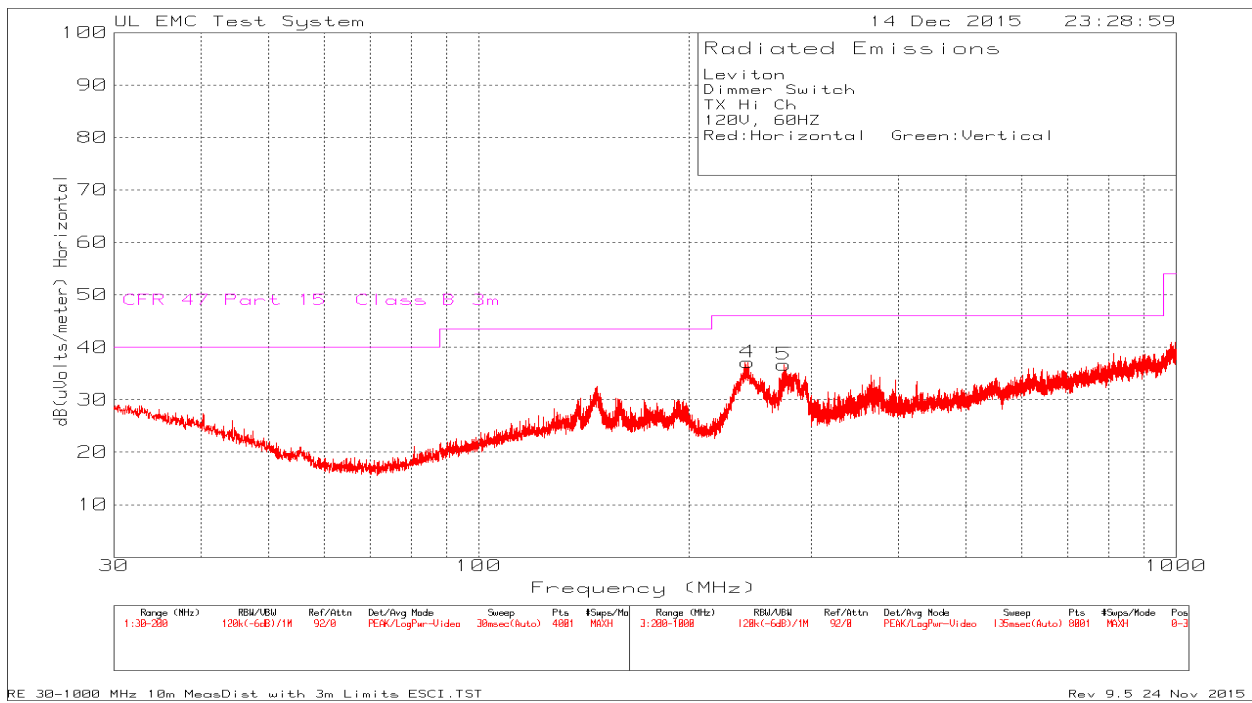
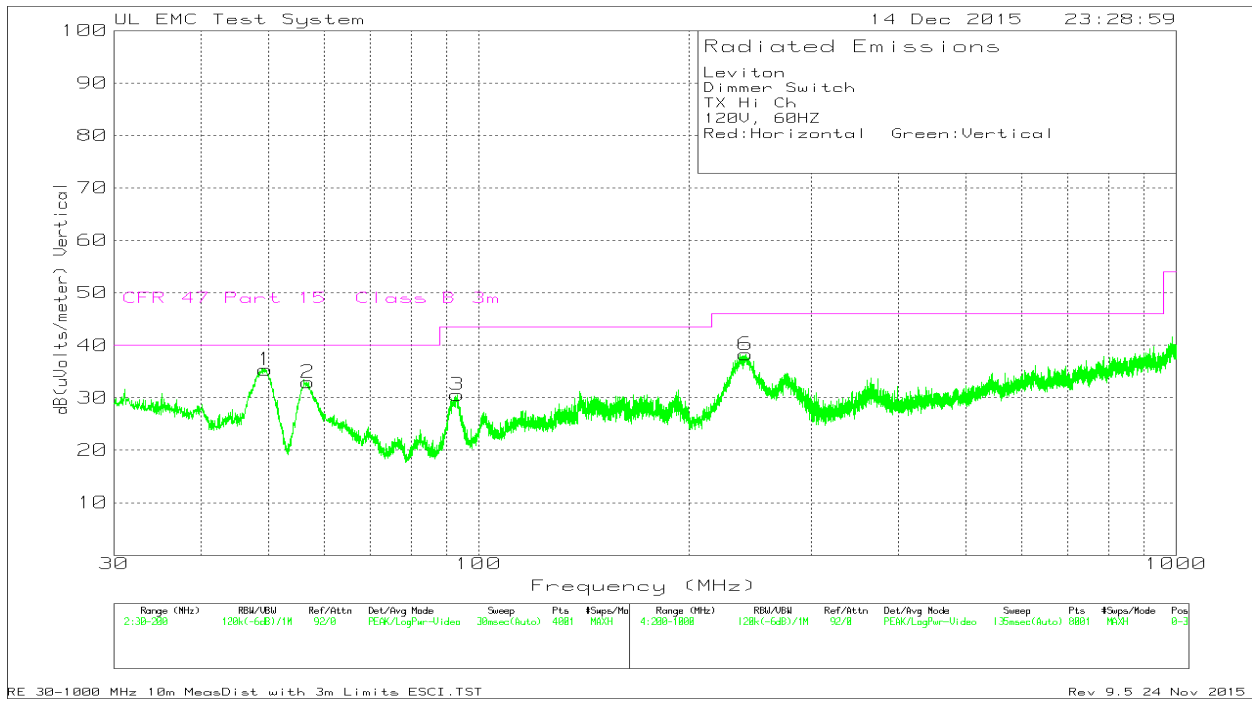
Lev iton												
Dimmer Switch												
TX Lo Ch												
120V, 60HZ												
Red:Horizontal Green:Vertical												
Trace Markers												
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path Factor dBuV/m	10M to 3M Factor dB	Level dBuV/m	FCC part 15.209 Limit dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	49.0825	43.89	Pk	10.2	-30.1	10.5	34.49	40	-5.51	0-360	101	V
2	56.8175	46.64	Pk	7.2	-30.1	10.5	34.24	40	-5.76	0-360	242	V
3	92.9425	40.12	Pk	10	-30	10.5	30.62	43.52	-12.9	0-360	101	V
4	266.9	42.46	Pk	12.5	-28.6	10.5	36.86	46.02	-9.16	0-360	399	H
5	241.4	44.15	Pk	11.2	-28.9	10.5	36.95	46.02	-9.07	0-360	102	V
6	266.1	42.11	Pk	12.4	-28.6	10.5	36.41	46.02	-9.61	0-360	102	V
Pk - Peak detector												
Radiated Emission Data												
Test Frequency (MHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path Factor dBuV/m	10M to 3M Factor dB	Level dBuV/m	FCC part 15.209 Limit dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity	
49.17	40.35	Qp	10.1	-30.1	10.5	30.85	40	-9.15	331	101	V	
57.2075	41.65	Qp	7	-30.1	10.5	29.05	40	-10.95	7	261	V	
Qp - Quasi-Peak detector												

30MHz – 1GHz Middle Channel



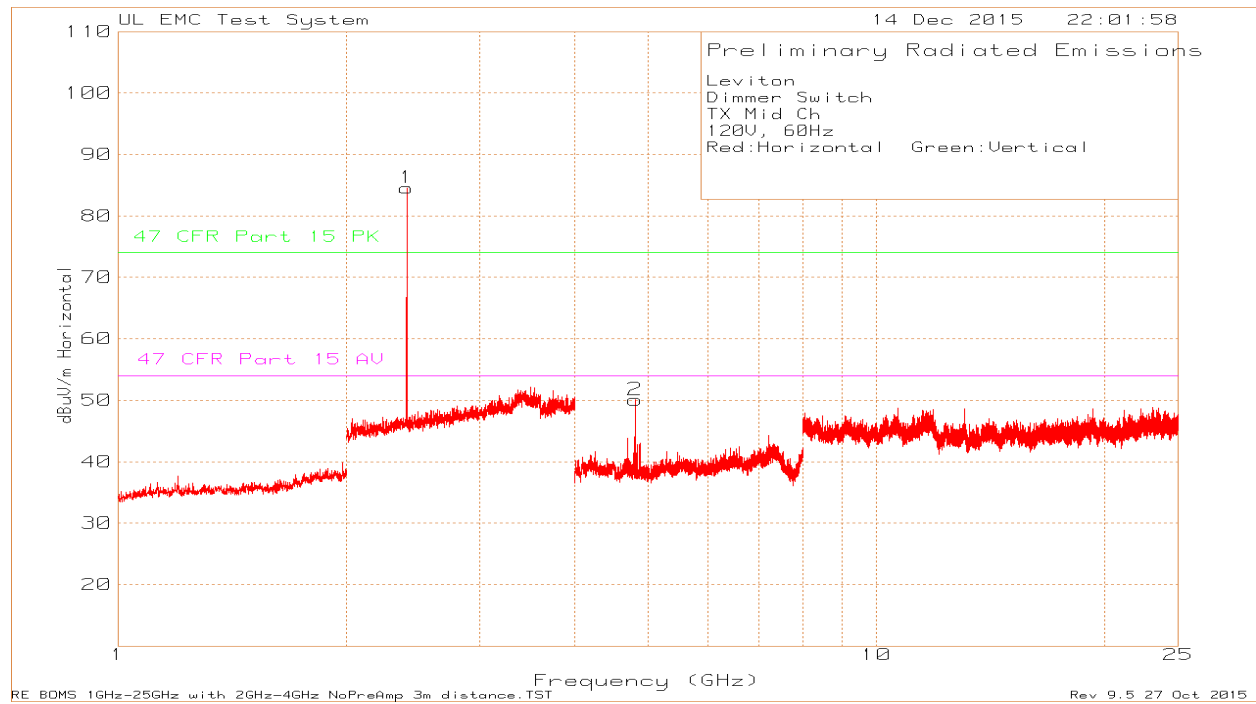
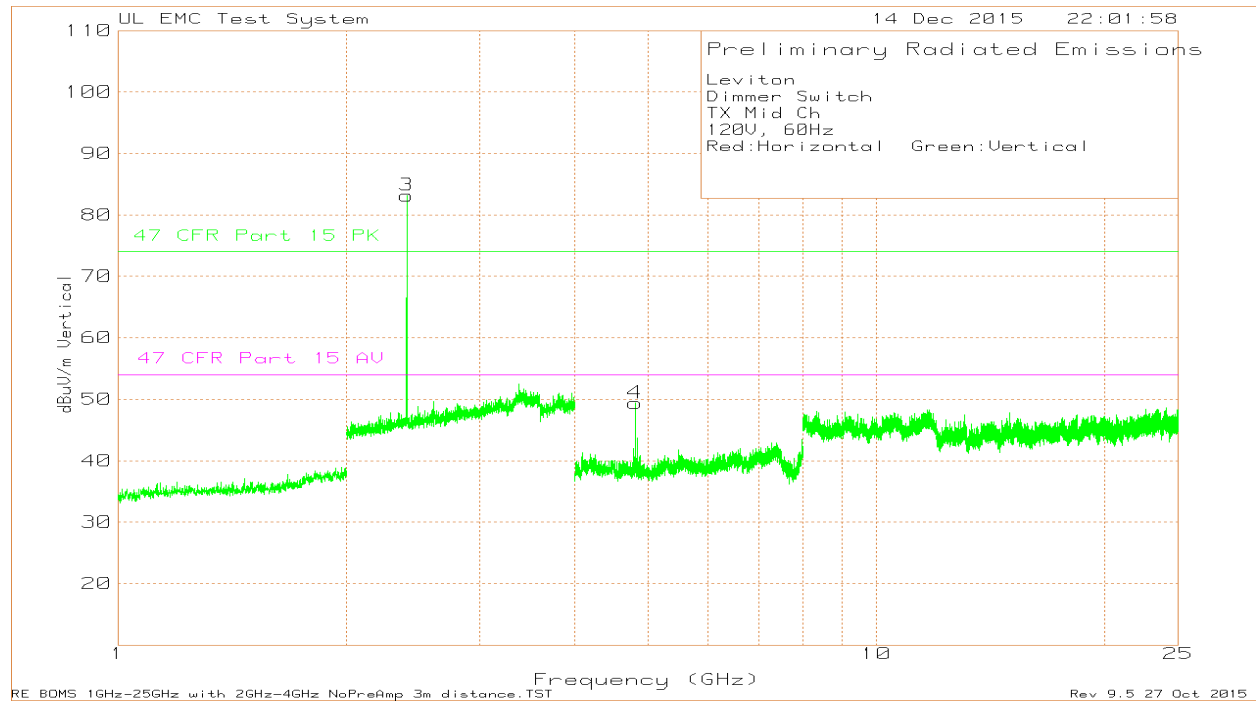
Leviton												
Dimmer Switch												
TX Mid Ch												
120V, 60HZ												
Red:Horizontal Green:Vertical												
Trace Markers												
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path Factor dBuV/m	10M to 3M Factor dB	Level dBuV/m	FCC part 15.209 Limit dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	49.3375	43.69	Pk	10	-30.1	10.5	34.09	40	-5.91	0-360	101	V
2	56.9875	46.66	Pk	7.1	-30.1	10.5	34.16	40	-5.84	0-360	101	V
3	92.305	40.87	Pk	9.9	-30	10.5	31.27	43.52	-12.25	0-360	101	V
4	270.6	42.49	Pk	12.6	-28.6	10.5	36.99	46.02	-9.03	0-360	299	H
5	241.1	44.91	Pk	11.2	-28.9	10.5	37.71	46.02	-8.31	0-360	103	V
Pk - Peak detector												
Radiated Emission Data												
Test Frequency (MHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path Factor dBuV/m	10M to 3M Factor dB	Level dBuV/m	FCC part 15.209 Limit dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity	
49.395	40.23	Qp	10	-30.1	10.5	30.63	40	-9.37	314	101	V	
57.01	42.34	Qp	7.1	-30.1	10.5	29.84	40	-10.16	0	255	V	
Qp - Quasi-Peak detector												

30MHz – 1GHz High Channel



Leviton												
Dimmer Switch												
TX Hi Ch												
120V, 60HZ												
Red:Horizontal Green:Vertical												
Trace Markers												
Marker No.	Test Frequency (MHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path Factor dBuV/m	10M to 3M Factor dB	Level dBuV/m	FCC part 15.209 Limit dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	49.5075	45.03	Pk	9.9	-30.1	10.5	35.33	40	-4.67	0-360	100	V
2	56.945	45.45	Pk	7.1	-30.1	10.5	32.95	40	-7.05	0-360	250	V
3	93.155	40.09	Pk	10	-30	10.5	30.59	43.52	-12.93	0-360	100	V
4	243.1	44.24	Pk	11.3	-28.9	10.5	37.14	46.02	-8.88	0-360	399	H
5	274.1	42.21	Pk	12.7	-28.7	10.5	36.71	46.02	-9.31	0-360	299	H
6	241.3	45.47	Pk	11.2	-28.9	10.5	38.27	46.02	-7.75	0-360	102	V
Pk - Peak detector												
Radiated Emission Data												
Test Frequency (MHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path Factor dBuV/m	10M to 3M Factor dB	Level dBuV/m	FCC part 15.209 Limit dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity	
49.2325	41.26	Qp	10.1	-30.1	10.5	31.76	40	-8.24	311	113	V	
Qp - Quasi-Peak detector												

1GHz – 25GHz Low Channel



Leviton
 Dimmer Switch
 TX Mid Ch
 120V, 60Hz
 Red:Horizontal Green:Vertical
 Trace Markers

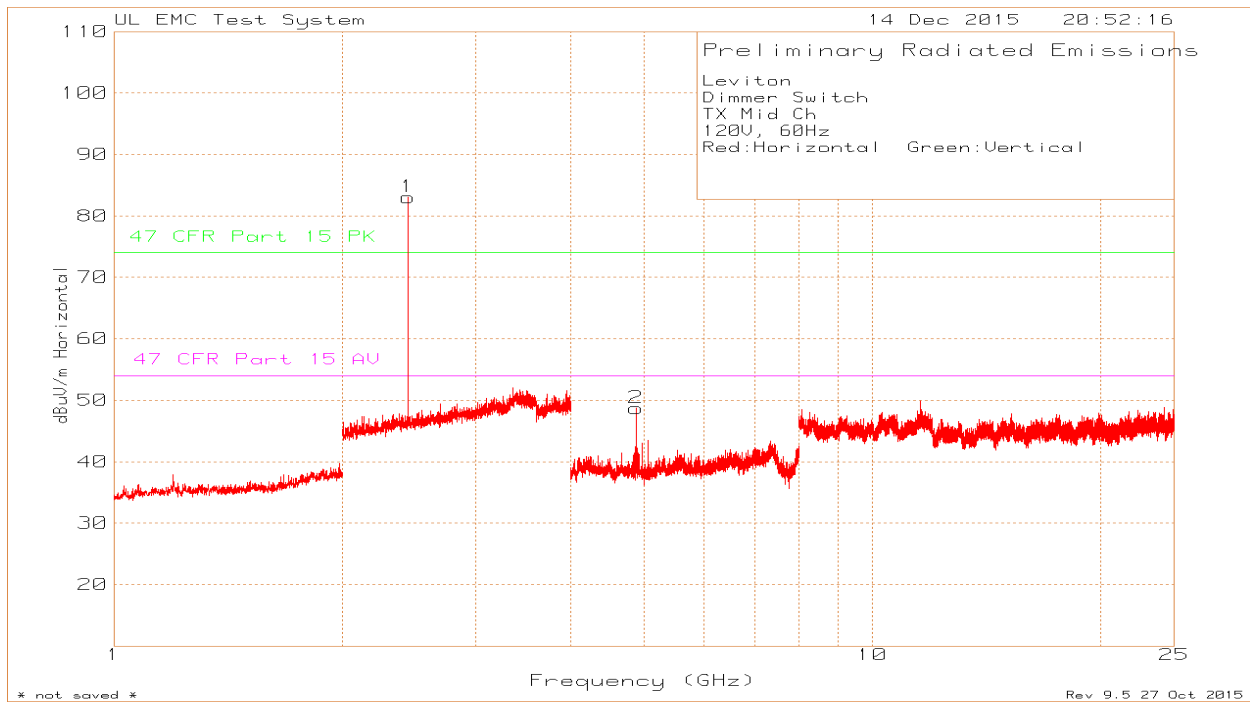
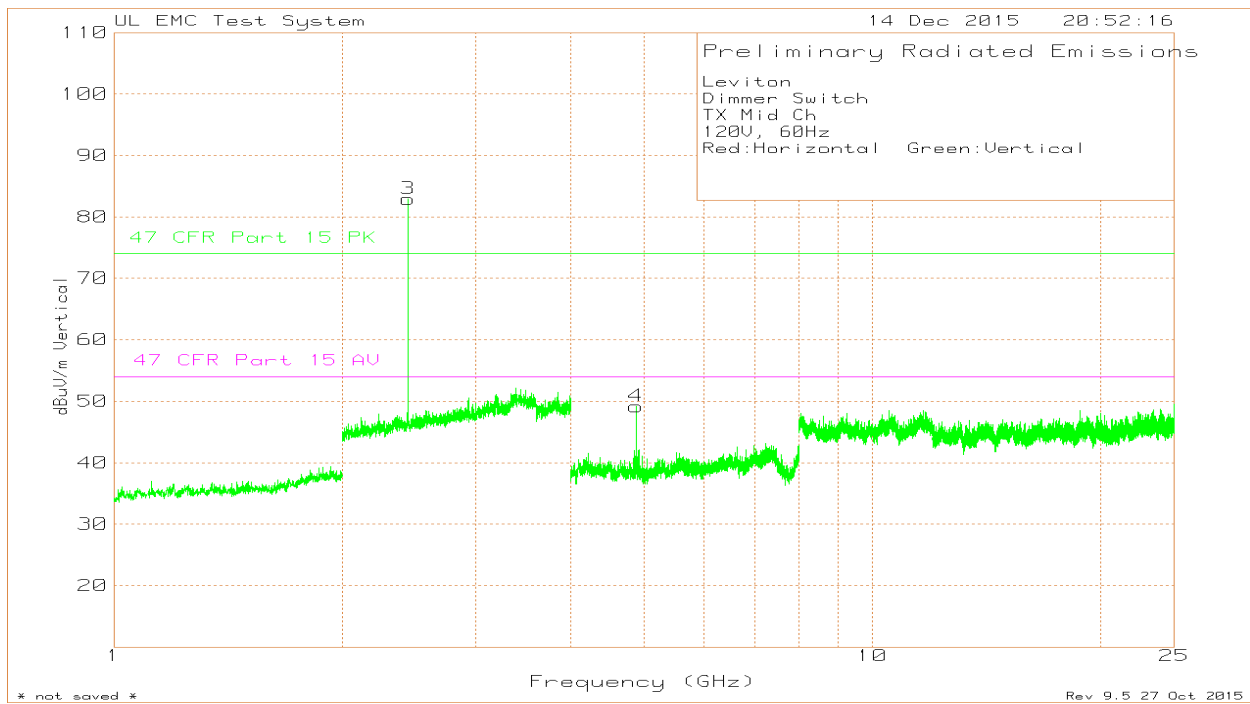
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path Factor dB	Level dBuV/m	Limit 7 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 7 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	2.402	58.12	Pk	21.8	4.64	84.56	74	10.56	54	30.56	0-360	100	H
2	4.804	73.87	Pk	27.7	-51.51	50.06	74	-23.94	54	-3.94	0-360	100	H
3	2.402	56.74	Pk	21.8	4.64	83.18	74	9.18	54	29.18	0-360	100	V
4	4.804	73.19	Pk	27.7	-51.51	49.38	74	-24.62	54	-4.62	0-360	99	V

Pk - Peak detector
 Radiated Emission Data

Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path Factor dB	Level dBuV/m	Limit 7 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 7 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
4.8044	76.1	Pk	27.7	-51.5	52.3	74	-21.7	54	-1.7	277	102	H
4.8039	71.72	Av	27.7	-51.51	47.91	74	-26.09	54	-6.09	277	102	H
4.8043	75.67	Pk	27.7	-51.5	51.87	74	-22.13	54	-2.13	300	147	V
4.8038	70.9	Av	27.7	-51.51	47.09	74	-26.91	54	-6.91	300	147	V

Pk - Peak detector
 Av - Average Detector (using Reduced VBW to 5kHz)

1GHz – 25GHz Middle Channel



Leviton
 Dimmer Switch
 TX Mid Ch
 120V, 60Hz
 Red:Horizontal Green:Vertical
 Trace Markers

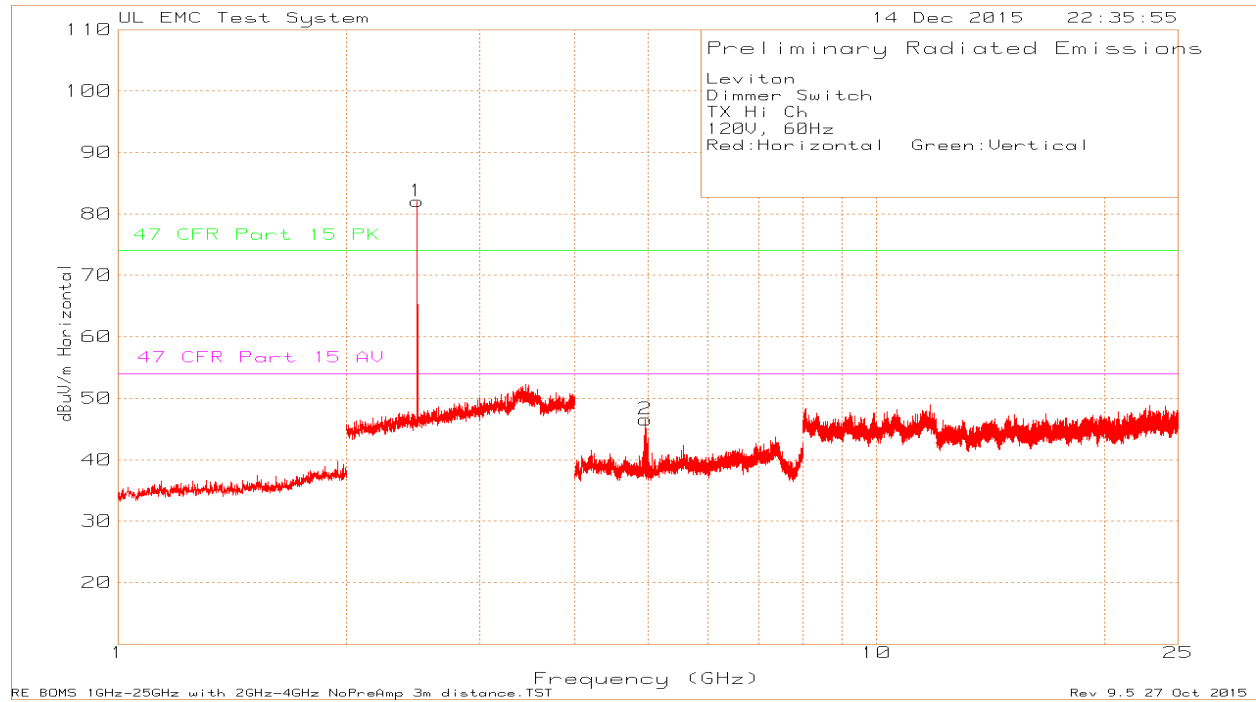
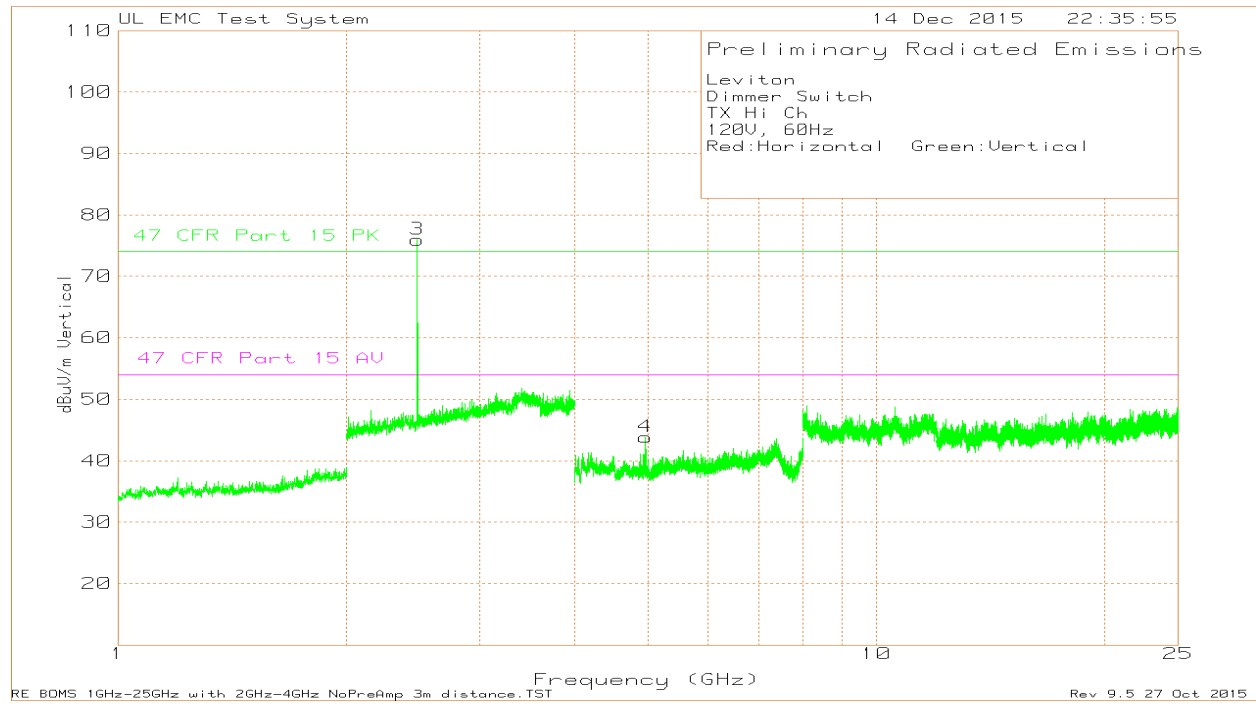
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path Factor dB	Level dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	2.442	56.44	Pk	21.9	4.72	83.06	74	9.06	54	29.06	0-360	100	H
2	4.883	71.78	Pk	27.7	-50.76	48.72	74	-25.28	54	-5.28	0-360	149	H
3	2.442	56.31	Pk	21.9	4.72	82.93	74	8.93	54	28.93	0-360	100	V
4	4.883	72.26	Pk	27.7	-50.76	49.2	74	-24.8	54	-4.8	0-360	100	V

Pk - Peak detector

Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path Factor dB	Level dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
4.8833	73.67	Pk	27.7	-50.75	50.62	74	-23.38	54	-3.38	276	100	H
4.8837	69.13	Av	27.7	-50.75	46.08	74	-27.92	54	-7.92	276	100	H
4.8833	73.32	Pk	27.7	-50.76	50.26	74	-23.74	54	-3.74	304	137	V
4.8836	68.34	Av	27.7	-50.75	45.29	74	-28.71	54	-8.71	304	137	V

Pk - Peak detector
 Av - Average Detector (using Reduced VBW to 5kHz)

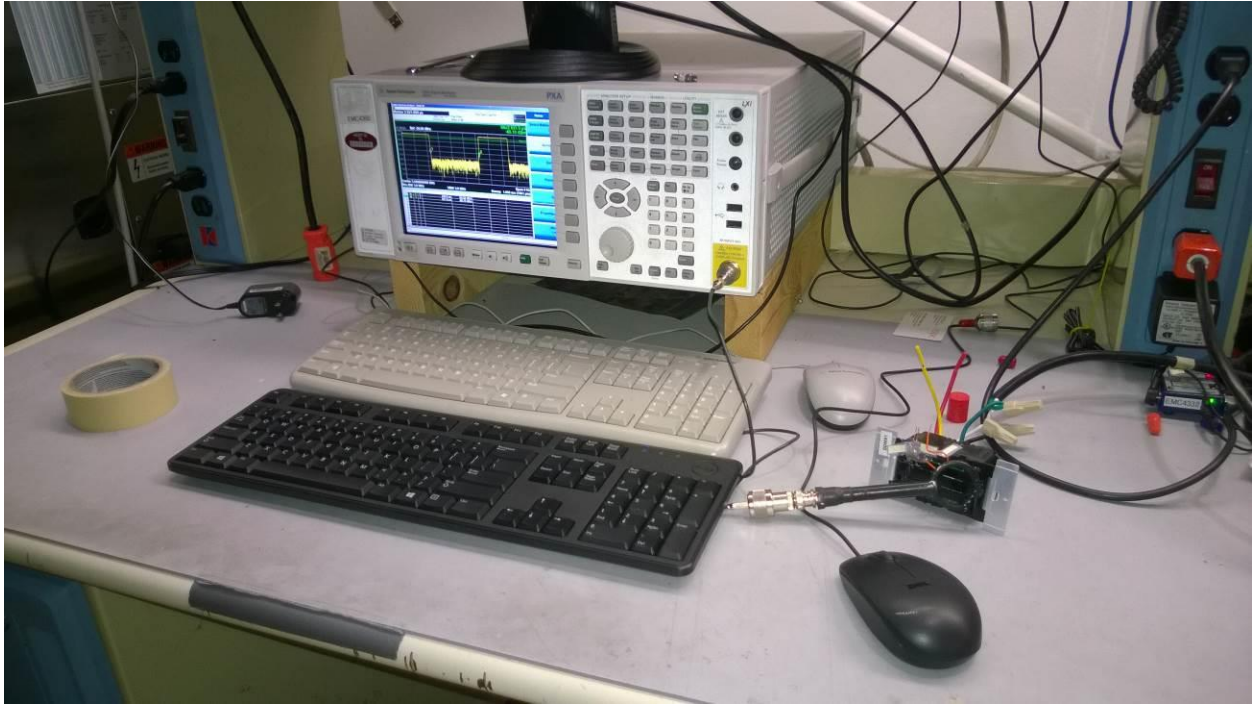
1GHz – 25GHz High Channel



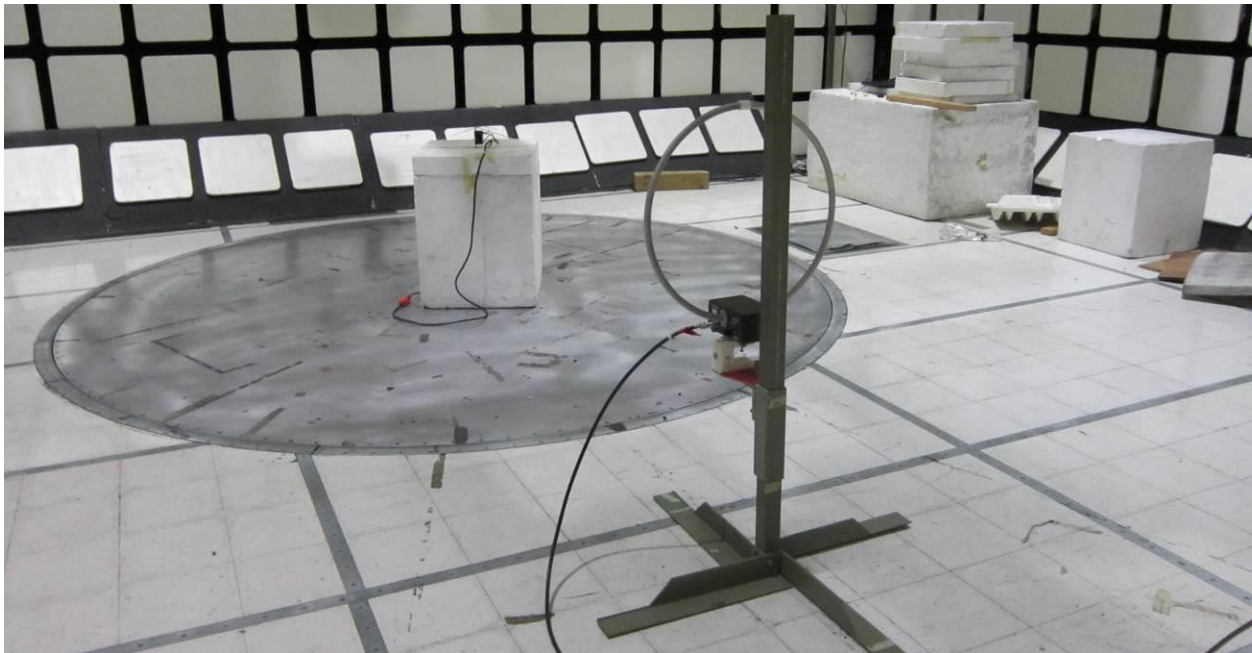
Lev iton													
Dimmer Switch													
TX Hi Ch													
120V, 60Hz													
Red:Horizontal Green:Vertical													
Trace Markers													
Marker No.	Test Frequency (GHz)	Meter Reading (dBuV)	Detector	Antenna Factor dB/m	Path Factor dB	Level dBuV/m	Limit 47 CFR Part 15 PK dBuV/m	Margin (dB)	Limit 47 CFR Part 15 AV dBuV/m	Margin (dB)	Azimuth [Degs]	Height [cm]	Polarity
1	2.479	55.32	Pk	22	4.74	82.06	74	8.06	54	28.06	0-360	150	H
2	4.959	68.76	Pk	27.8	-49.98	46.58	74	-27.42	54	-7.42	0-360	149	H
3	2.48	49.26	Pk	22	4.74	76	74	2	54	22	0-360	100	V
4	4.959	66.04	Pk	27.8	-49.98	43.86	74	-30.14	54	-10.14	0-360	150	V
Pk - Peak detector													

8. SETUP PHOTOS

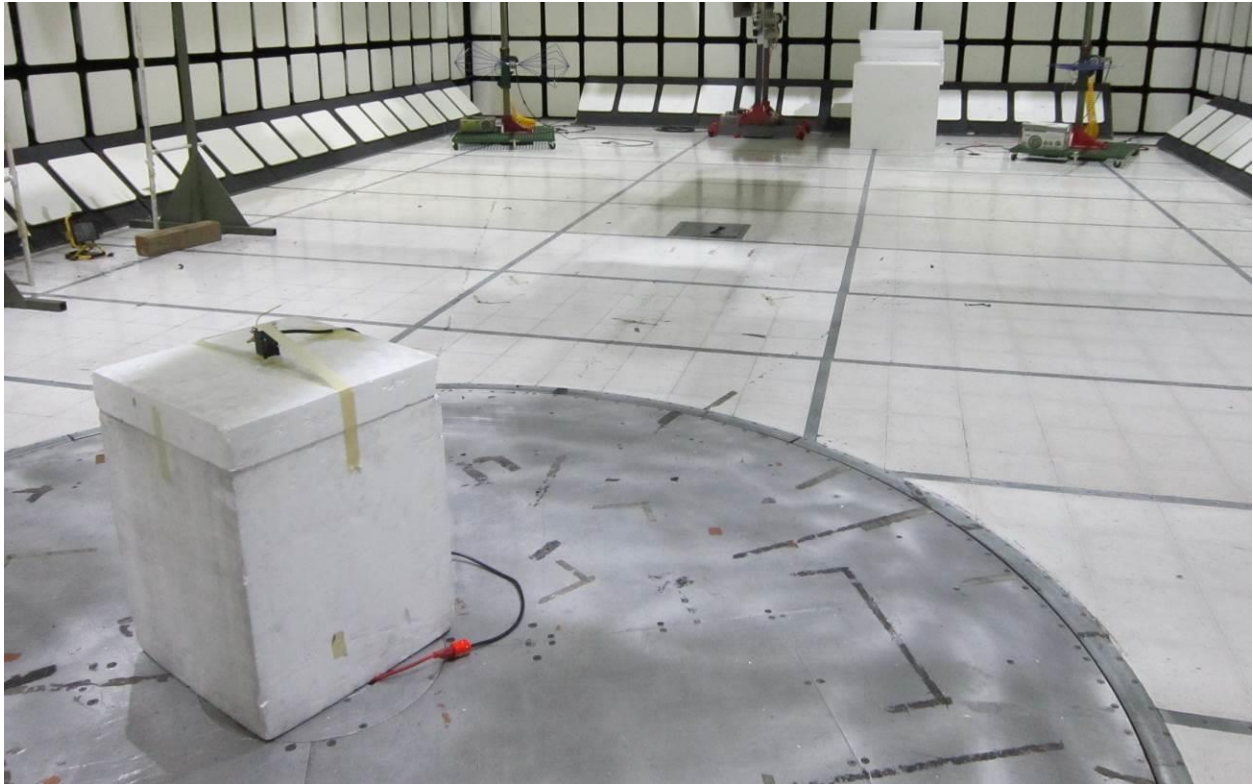
ANTENNA PORT MEASUREMENT SETUP



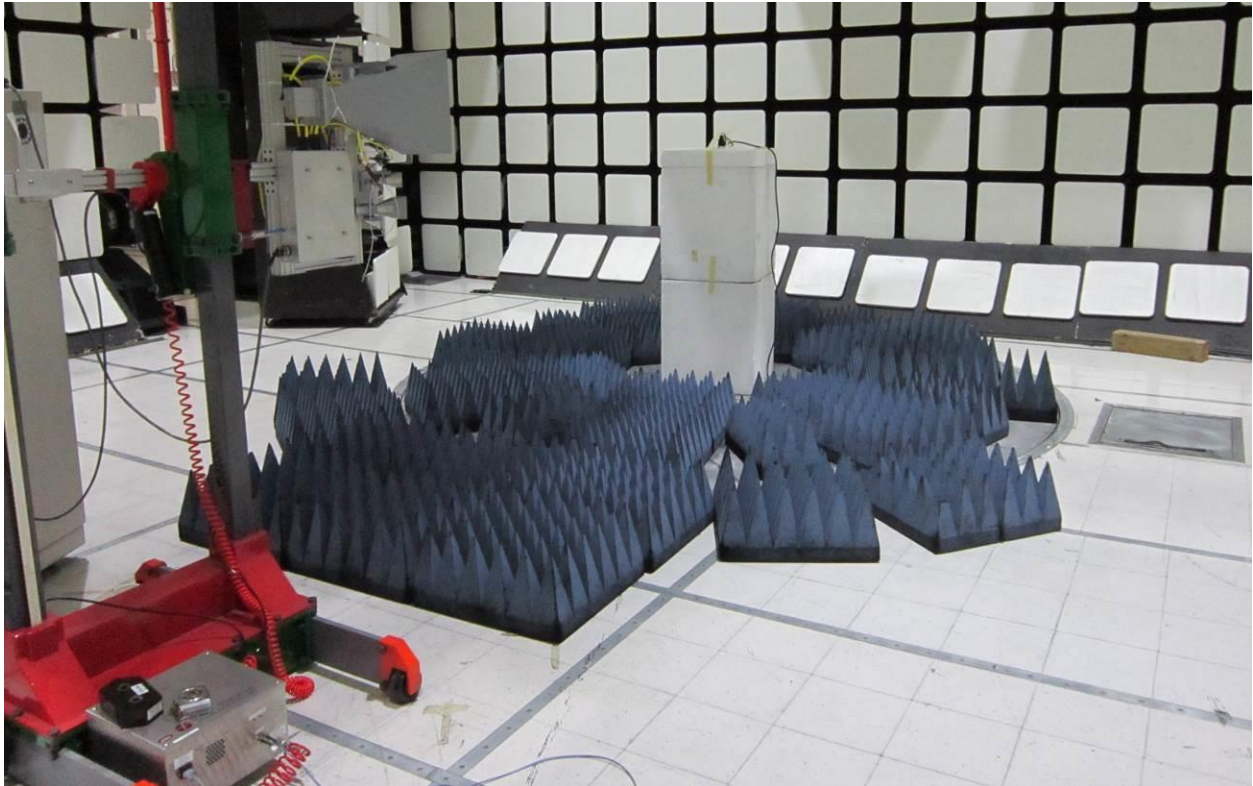
RADIATED MEASUREMENT SETUP 9kHz – 30MHz



RADIATED MEASUREMENT SETUP 30MHz – 1GHz



Radiated Measurement Setup 1GHz-25GHz



END OF REPORT