FCC CFR47 PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 8

C2PC CERTIFICATION TEST REPORT

FOR

GSM/CDMA/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n/ac and NFC

MODEL NUMBER: LG-VS985, VS985, LGVS985, AS985, LG-AS985 & LGAS985

FCC ID: ZNFVS985
IC: 2703C-VS985

REPORT NUMBER: 14U17777-4

ISSUE DATE: May 20, 2014

Prepared for
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	5/20/14	Initial Issue	P. Zhang

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC.

EUT DESCRIPTION: GSM/CDMA/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n/ac and NFC.

MODEL: LG-VS985, VS985, LGVS985, AS985, LG-AS985 & LGAS985

SERIAL NUMBER: 1873283 (Radiated)

DATE TESTED: MAY 12 – 20, 2014

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-210 Issue 8 Annex 8	Pass
INDUSTRY CANADA RSS-GEN Issue 3	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 any 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 C63.4-2009, RSS-GEN Issue 3, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

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:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 18000 MHz	4.94 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/CDMA/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n/ac and NFC.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2462	802.11b	18.53	71.29
2412 - 2462	802.11g	19.51	89.33
2412 - 2462	802.11n HT20	18.68	73.79

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -1.74 dBi.

5.4. WORST-CASE CONFIGURATION AND MODE

Radiated emission and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

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.

Based on the baseline scan, the worst-case data rates were:

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20mode: MCS0

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Adapter	LG	MCS-04WT2	TA350000050	N/A
Earphone	LG	N/A	N/A	N/A
Smart Cover	LG	N/A	N/A	N/A

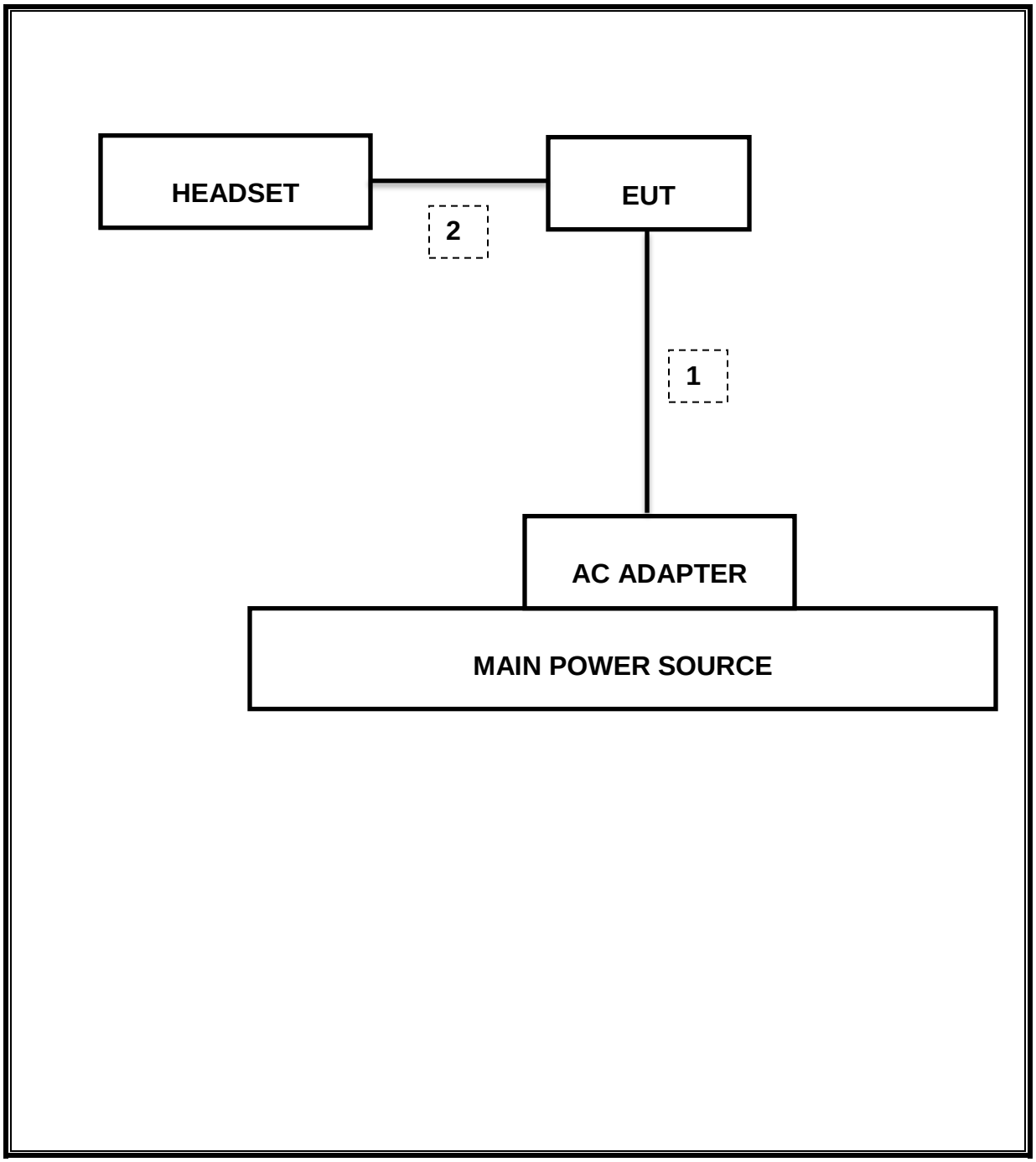
I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	DC Power	1	Mini-USB	Shielded	1.2m	N/A
2	Audio	1	Mini-Jack	Unshielded	1m	N/A

TEST SETUP

The EUT is a stand-alone unit during the tests. Test software exercised the radio card.

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**	**Asset**	**Cal Due**
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/14
Spectrum Analyzer,9KHz-40GHz	HP	8564E	C00986	04/01/15
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	08/13/14
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/18/14
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/14
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/14
Antenna, Horn, 1-18 GHz	ETS	3117	C01022	02/21/15
Antenna, Horn,18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/14
Antenna, Horn, 26-40 GHz	ARA	MWH-2640	C00891	06/28/14
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/15
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/14
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/15
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	F00351	06/27/14
AC Power Supply, 2,500VA 45-500Hz	Elgar-Ametek	CW2501M	F00013	CNR
RF Preamplifier, 1GHz - 40GHz	Miteq	NSP4000-SP2	C00990	08/20/14
Attenuator / Switch driver	HP	11713A	F00204	CNR
Low Pass Filter 3GHz	Micro-Tronics	LPS17541	F00219	05/23/14
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/14
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/14

7. MEASUREMENT METHODS

KDB 558074 D01 DTS Meas Guidance v03r01:Measurement Procedure PK2 is used for power and PKPSD is used for power spectral density.

Unwanted emissions within Restricted Bands are measured using traditional radiated procedures.

Band edge emissions within Restricted Bands are measured using RMS with duty cycle factor offset method.

8. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)(2)	RSS-210 A8.2(a)	Occupied Band width (6dB)	>500KHz	Conducted	Pass	see original
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	see original
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	see original
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	see original
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	see original
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	48.17 dBuV/m

9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
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. The antenna to EUT distance is 3 meters.

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

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor for average measurements. Duty cycle factor= 10log (1/x) For this sample B mode = 0dB (duty cycle >98%); G mode = 0.2dB; N mode = 0.22dB.

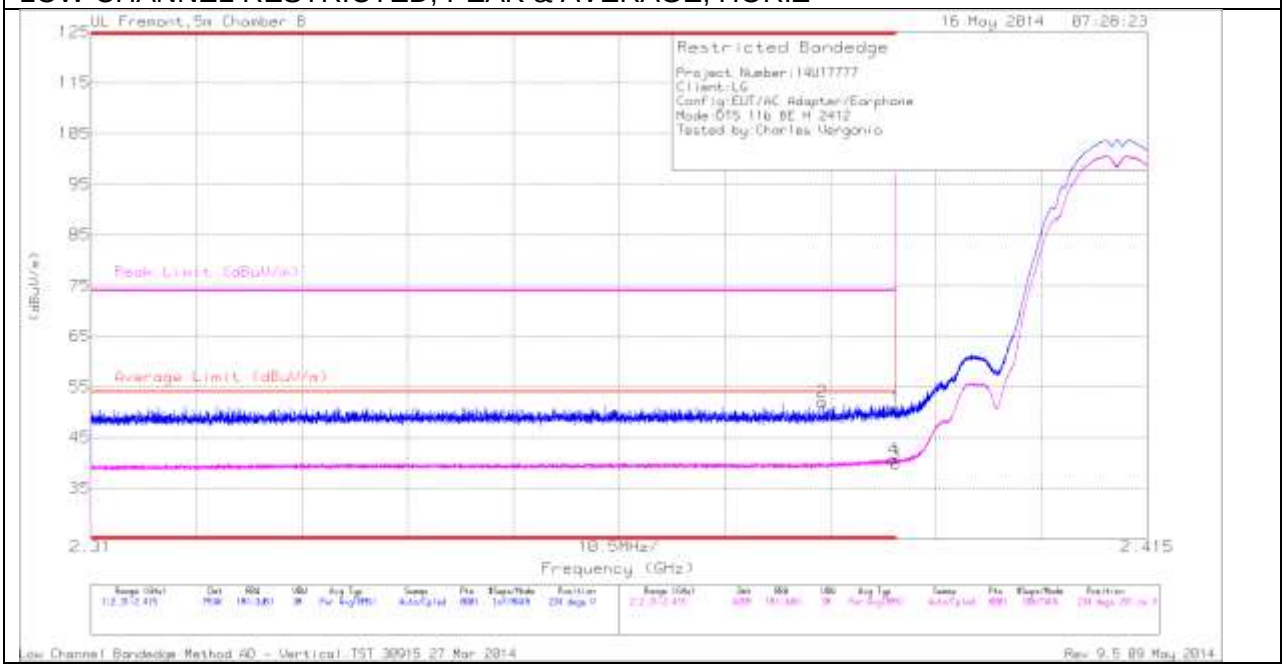
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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

9.2. TRANSMITTER ABOVE 1 GHz

9.2.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK & AVERAGE, HORIZ



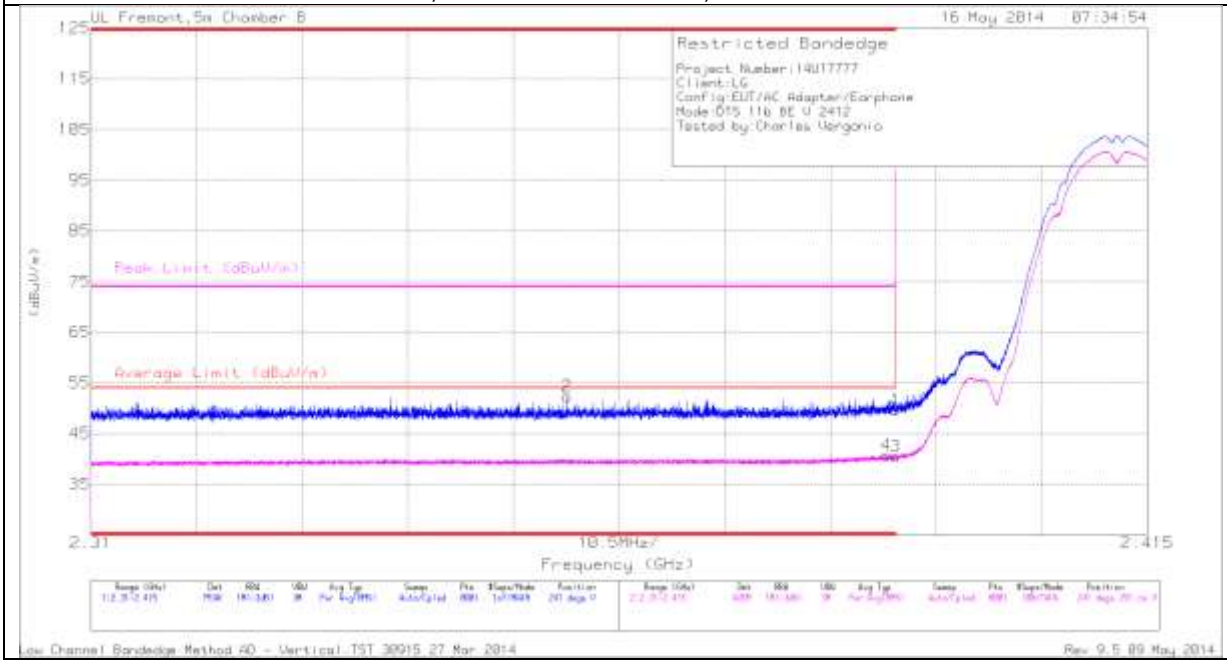
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	41.5	PK	32.1	-22.8	50.8	-	-	74	-23.2	234	291	V
2	* 2.383	42.78	PK	32.1	-22.9	51.98	-	-	74	-22.02	234	291	V
3	* 2.39	30.61	RMS	32.1	-22.8	39.91	54	-14.09	-	-	234	291	V
4	* 2.39	31.39	RMS	32.1	-22.8	40.69	54	-13.31	-	-	234	291	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

LOW CHANNEL RESTRICTED, PEAK & AVERAGE, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (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	40.33	PK	32.1	-22.8	49.63	-	-	74	-24.37	241	291	V
2	* 2.357	43.24	PK	31.9	-22.8	52.34	-	-	74	-21.66	241	291	V
3	* 2.39	31.13	RMS	32.1	-22.8	40.43	54	-13.57	-	-	241	291	V
4	* 2.389	31.48	RMS	32.1	-22.8	40.78	54	-13.22	-	-	241	291	V

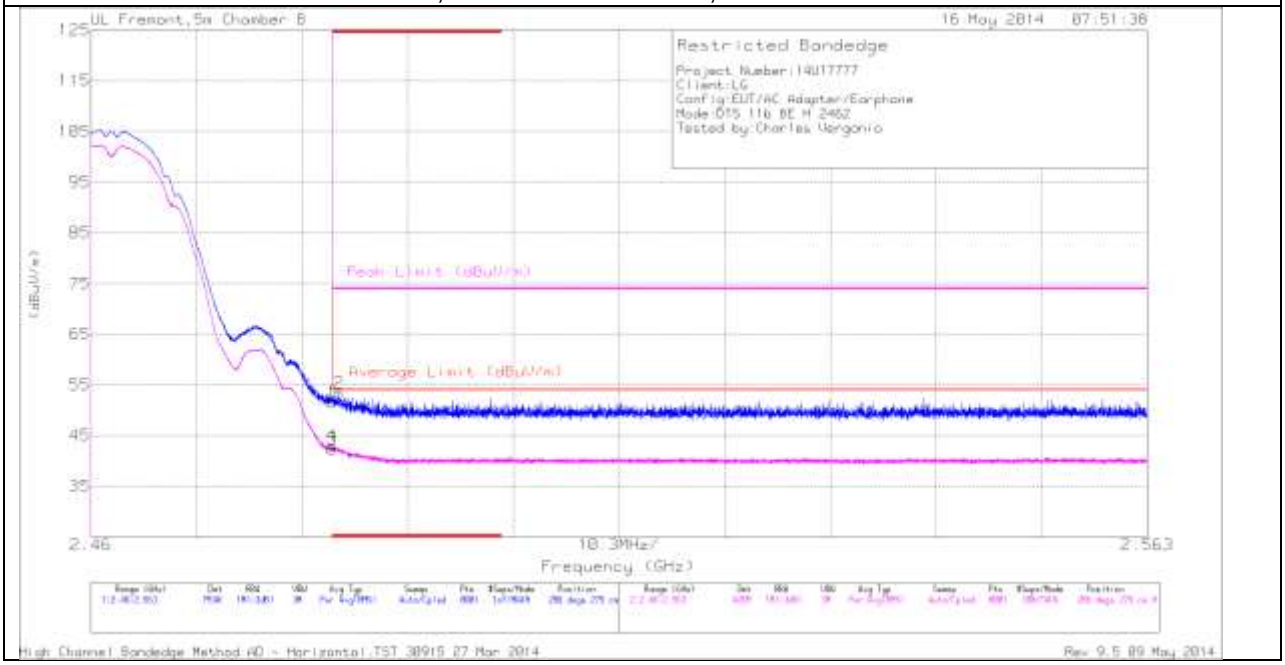
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL RESTRICTED, PEAK & AVERAGE, HORIZ



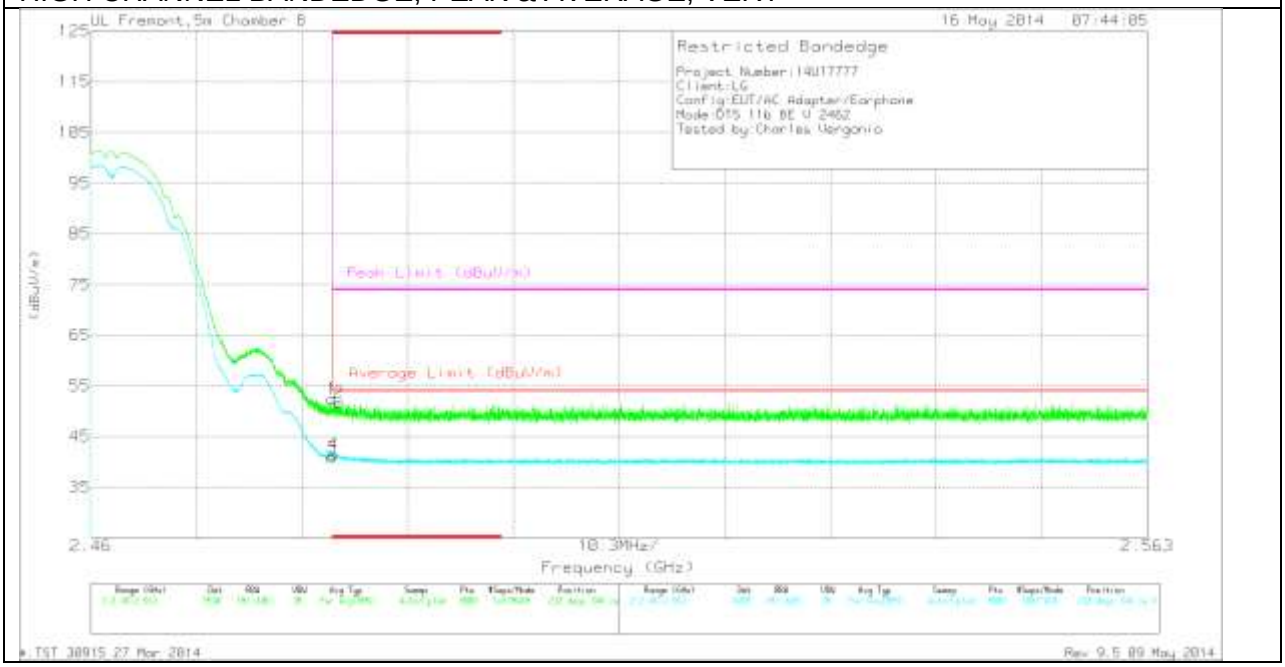
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	41.88	PK	32.4	-22.7	51.58	-	-	74	-22.42	286	275	H
2	* 2.484	43.68	PK	32.4	-22.7	53.38	-	-	74	-20.62	286	275	H
3	* 2.484	32.69	RMS	32.4	-22.7	42.39	54	-11.61	-	-	286	275	H
4	* 2.484	33.22	RMS	32.4	-22.7	42.92	54	-11.08	-	-	286	275	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

HIGH CHANNEL BANDEDGE, PEAK & AVERAGE, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (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	42.76	PK	32.4	-22.7	52.46	-	-	74	-21.54	232	344	V
2	* 2.484	41.97	PK	32.4	-22.7	51.67	-	-	74	-22.33	232	344	V
3	* 2.484	31.21	RMS	32.4	-22.7	40.91	54	-13.09	-	-	232	344	V
4	* 2.484	31.79	RMS	32.4	-22.7	41.49	54	-12.51	-	-	232	344	V

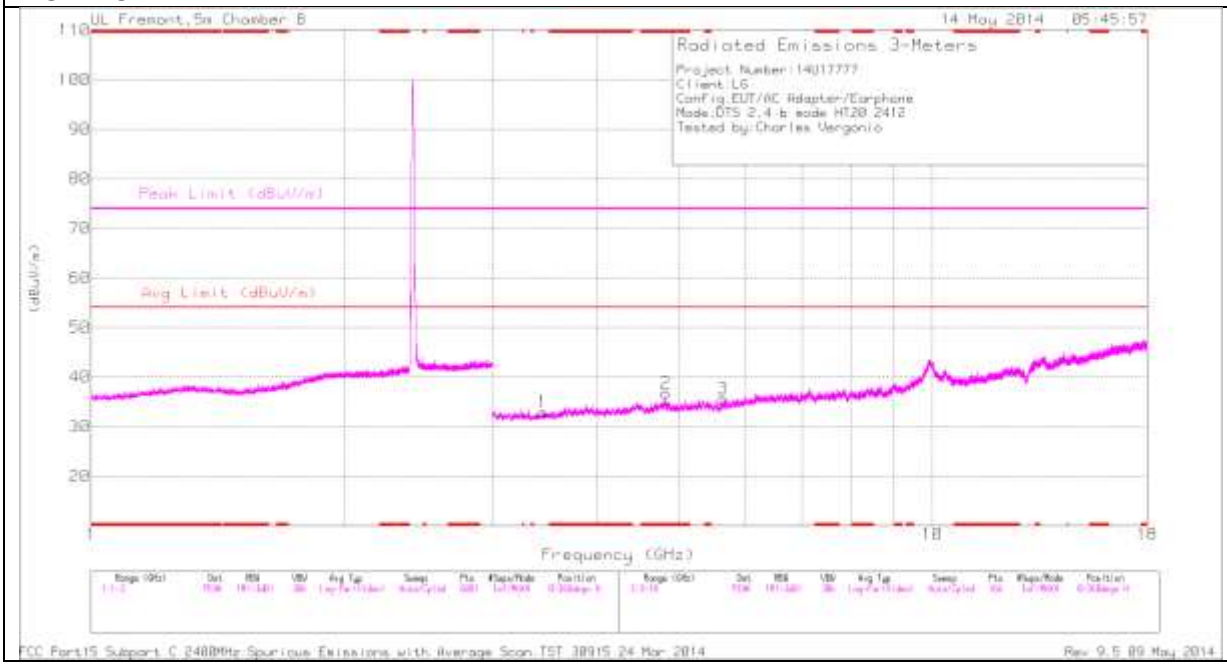
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL
VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.824	32.45	PK	34.2	-29.8	36.85	-	-	74	-37.15	0-360	202	H
1	3.445	31.02	PK	32.8	-30.9	32.92	-	-	-	-	0-360	99	H
3	5.637	30.24	PK	34.5	-29.1	35.64	-	-	-	-	0-360	99	H
4	6.202	30.01	PK	35.4	-28.5	36.91	-	-	-	-	0-360	202	V
5	7.159	29.47	PK	35.6	-27	38.07	-	-	-	-	0-360	202	V
6	9.94	29.92	PK	37	-23.5	43.42	-	-	-	-	0-360	202	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.823	39.49	PK2	34.2	-29.7	43.99	-	-	74	-30.01	359	100	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MID CHANNEL
HORIZONTAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL
VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.874	34.12	PK	34.2	-30.5	37.82	-	-	74	-36.18	0-360	99	H
1	3.25	31.91	PK	32.8	-31.3	33.41	-	-	-	-	0-360	202	H
3	5.978	29.83	PK	35.2	-28.5	36.53	-	-	-	-	0-360	202	H
4	6.61	29.74	PK	35.7	-27.8	37.64	-	-	-	-	0-360	99	V
5	6.857	29.04	PK	35.6	-27.5	37.14	-	-	-	-	0-360	99	V
6	9.94	29.77	PK	37	-23.5	43.27	-	-	-	-	0-360	99	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.872	40.79	PK2	34.2	-30.5	44.49	-	-	74	-29.51	359	100	H

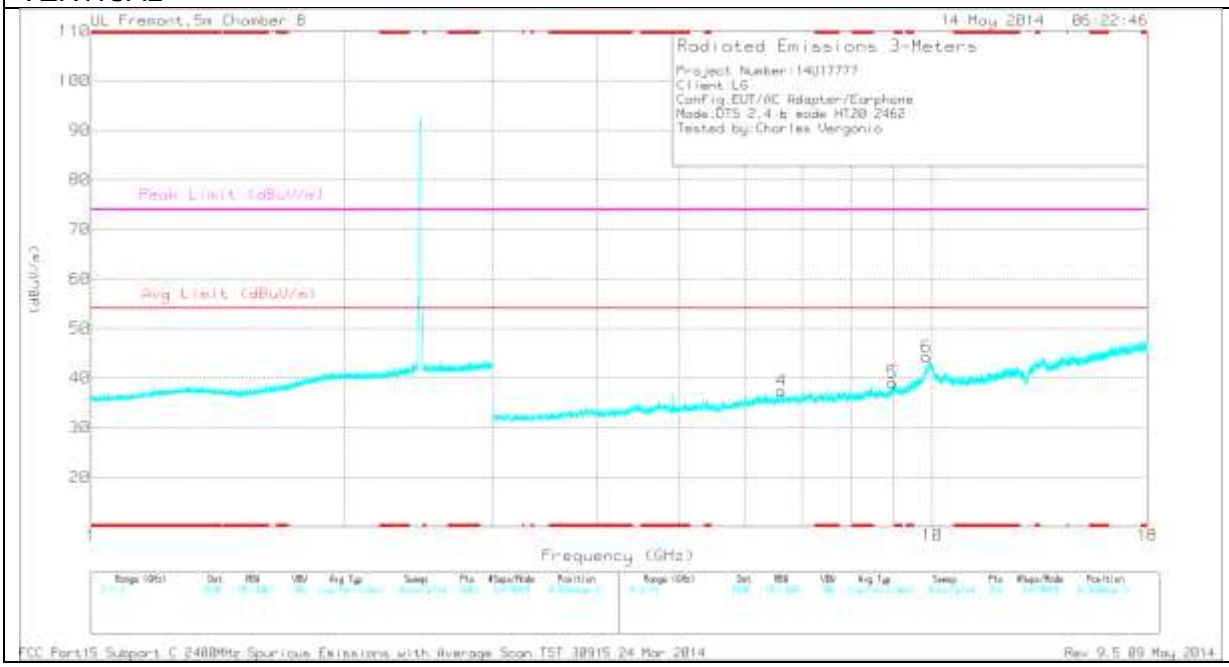
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

HIGH CHANNEL
HORIZONTAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL
VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.924	34.84	PK	34.2	-30.8	38.24	-	-	74	-35.76	0-360	99	H
1	3.112	32.07	PK	32.9	-31.6	33.37	-	-	-	-	0-360	99	H
3	5.842	30.54	PK	34.8	-29.6	35.74	-	-	-	-	0-360	202	H
4	6.611	29.57	PK	35.7	-27.8	37.47	-	-	-	-	0-360	99	V
5	8.972	26.93	PK	36.2	-24.1	39.03	-	-	-	-	0-360	99	V
6	9.847	31.2	PK	37	-23.9	44.3	-	-	-	-	0-360	202	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

Radiated Emissions

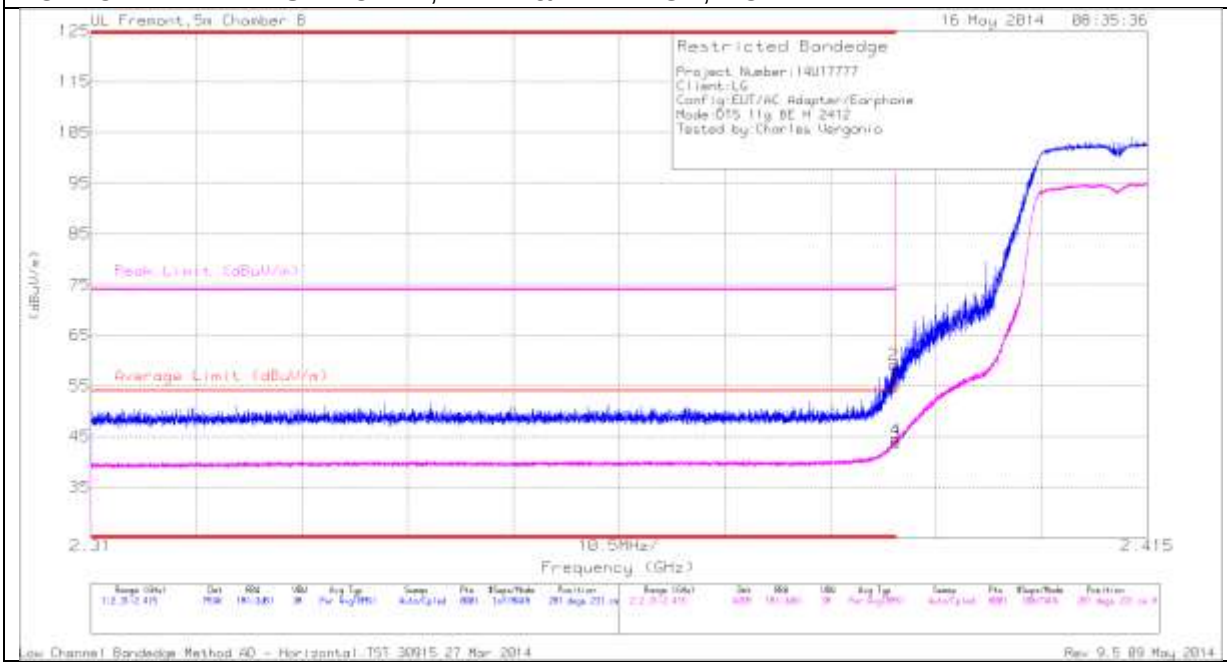
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.923	40.99	PK2	34.2	-30.8	44.39	-	-	74	-29.61	360	100	H
* 4.924	29.96	AD	34.2	-30.8	33.36	54	-20.64	-	-	360	100	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

9.2.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK & AVERAGE, HORIZ



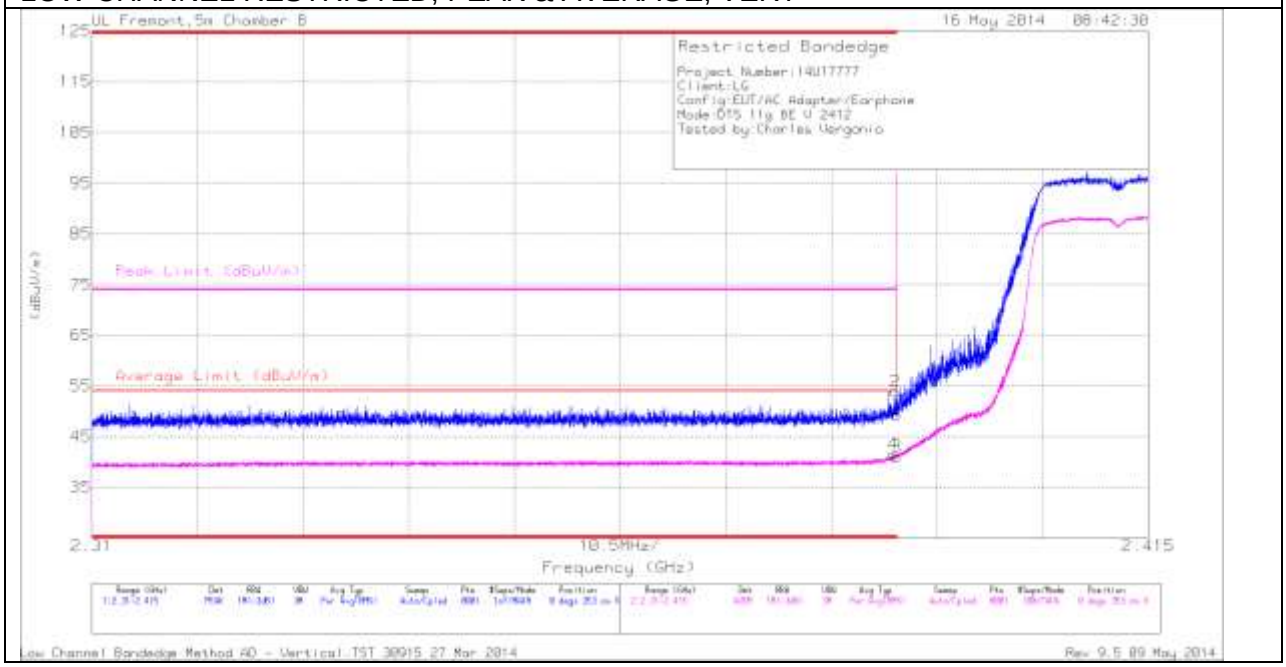
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	45.73	PK	32.1	-22.8	0	55.03	-	-	74	-18.97	281	231	H
2	* 2.39	49.85	PK	32.1	-22.8	0	59.15	-	-	74	-14.85	281	231	H
3	* 2.39	34.17	RMS	32.1	-22.8	.2	43.67	54	-10.33	-	-	281	231	H
4	* 2.39	34.83	RMS	32.1	-22.8	.2	44.33	54	-9.67	-	-	281	231	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

LOW CHANNEL RESTRICTED, PEAK & AVERAGE, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	40.18	PK	32.1	-22.8	0	49.48	-	-	74	-24.52	0	353	V
2	* 2.39	44.63	PK	32.1	-22.8	0	53.93	-	-	74	-20.07	0	353	V
3	* 2.39	31.54	RMS	32.1	-22.8	.2	41.04	54	-12.96	-	-	0	353	V
4	* 2.39	31.96	RMS	32.1	-22.8	.2	41.46	54	-12.54	-	-	0	353	V

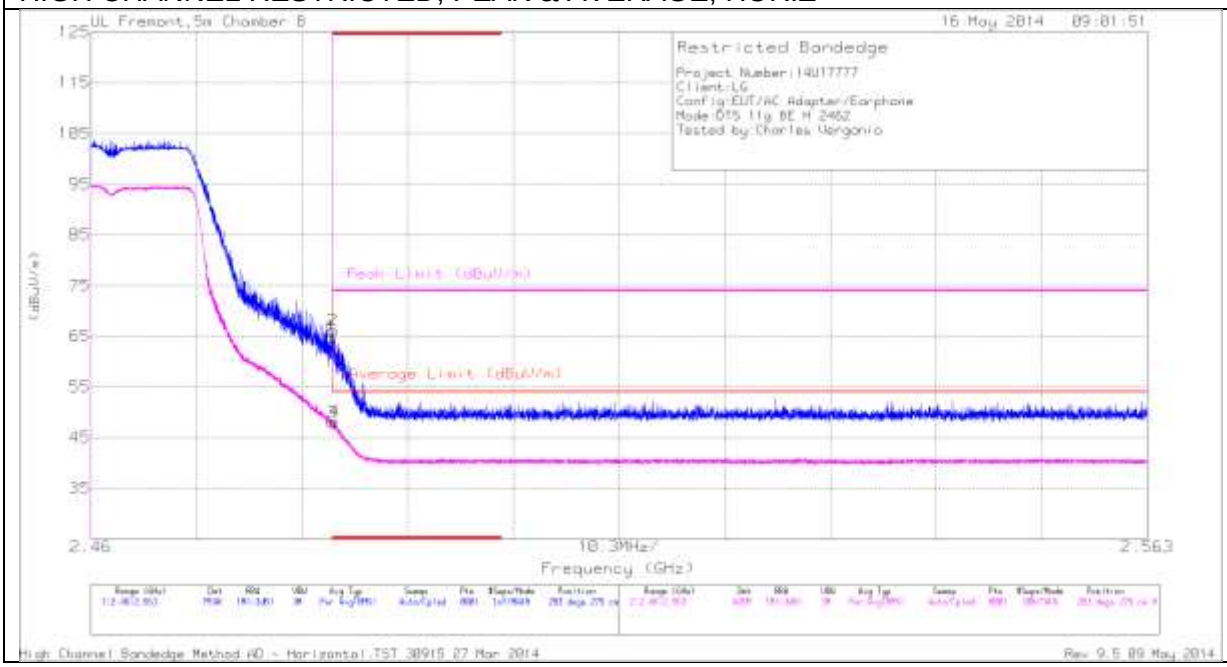
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL RESTRICTED, PEAK & AVERAGE, HORIZ



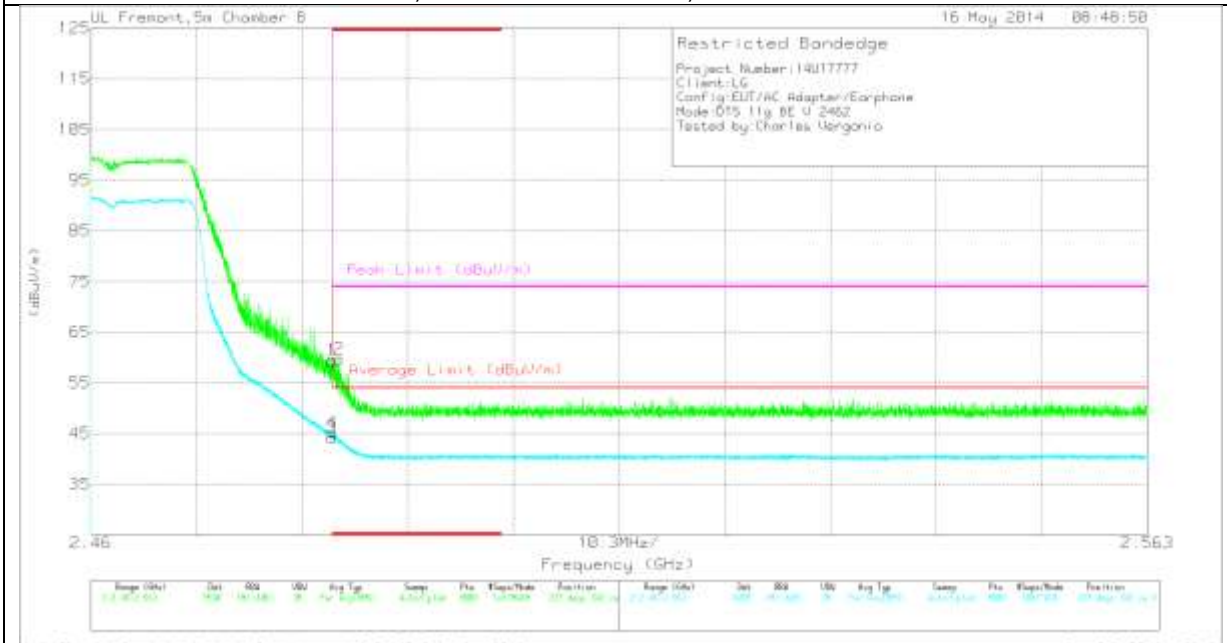
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	54.97	PK	32.4	-22.7	0	64.67	-	-	74	-9.33	283	275	H
2	* 2.484	56.45	PK	32.4	-22.7	0	66.15	-	-	74	-7.85	283	275	H
3	* 2.484	37.99	RMS	32.4	-22.7	.2	47.89	54	-6.11	-	-	283	275	H
4	* 2.484	38.27	RMS	32.4	-22.7	.2	48.17	54	-5.83	-	-	283	275	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

HIGH CHANNEL BANDEDGE, PEAK & AVERAGE, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	49.72	PK	32.4	-22.7	0	59.42	-	-	74	-14.58	237	342	V
2	* 2.484	50.02	PK	32.4	-22.7	0	59.72	-	-	74	-14.28	237	342	V
3	* 2.484	34.36	RMS	32.4	-22.7	.2	44.26	54	-9.74	-	-	237	342	V
4	* 2.484	35.25	RMS	32.4	-22.7	.2	45.15	54	-8.85	-	-	237	342	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL
VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	3.063	32.19	PK	32.8	-31.7	33.29	54	-20.71	74	-40.71	0-360	99	H
2	3.446	31.37	PK	32.8	-30.9	33.27	54	-20.73	74	- 40.73	0-360	202	H
3	5.857	30.02	PK	34.8	-29.3	35.52	54	-18.48	74	- 38.48	0-360	99	H
4	6.674	29.95	PK	35.7	-28.6	37.05	54	-16.95	74	-36.95	0-360	99	V
5	9.647	28.54	PK	36.8	-23.7	41.64	54	-12.36	74	- 32.36	0-360	99	V
6	9.902	29.92	PK	37	-23.6	43.32	54	-10.68	74	- 30.68	0-360	99	V

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.923	40.99	PK2	34.2	-30.8	44.39	-	-	74	-29.61	360	100	H
* 4.924	29.96	AD	34.2	-30.8	33.36	54	-20.64	-	-	360	100	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MID CHANNEL
HORIZONTAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL
VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	3.395	31.81	PK	32.8	-31.3	0	33.31	-	-	-	-	0-360	201	H
2	5.69	29.95	PK	34.5	-29.1	0	35.35	-	-	-	-	0-360	201	H
3	6.201	29.93	PK	35.4	-28.5	0	36.83	-	-	-	-	0-360	201	H
4	6.53	29.1	PK	35.7	-27.8	0	37	-	-	-	-	0-360	202	V
5	8.646	28.16	PK	35.8	-25.5	0	38.46	-	-	-	-	0-360	99	V
6	9.907	30.09	PK	37	-23.6	0	43.49	-	-	-	-	0-360	202	V

PK - Peak detector

Radiated Emissions

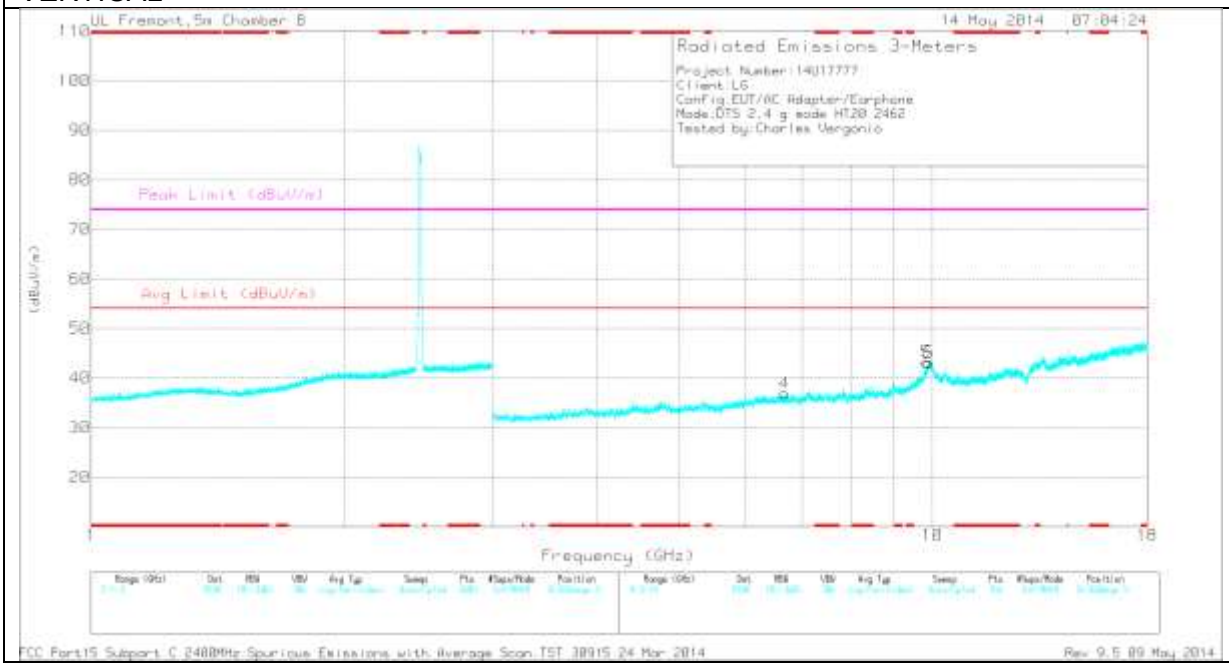
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
9.906	38.9	PK2	37	-23.6	0	52.3	54	-1.7	-	-	359	100	V
9.908	27.57	AD	37	-23.6	.2	41.17	54	-12.83	-	-	359	100	V

PK2 - KDB558074 Method: Maximum Peak

HIGH CHANNEL
HORIZONTAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL
VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	3.074	31.77	PK	32.8	-31.7	0	32.87	-	-	-	-	0-360	99	H
2	5.666	30.78	PK	34.5	-29.3	0	35.98	-	-	-	-	0-360	99	H
3	6.286	29.8	PK	35.5	-28.5	0	36.8	-	-	-	-	0-360	202	H
4	6.675	29.96	PK	35.7	-28.7	0	36.96	-	-	-	-	0-360	99	V
5	9.847	30.13	PK	37	-23.9	0	43.23	-	-	-	-	0-360	202	V
6	9.916	29.72	PK	37	-23.6	0	43.12	-	-	-	-	0-360	99	V

PK - Peak detector

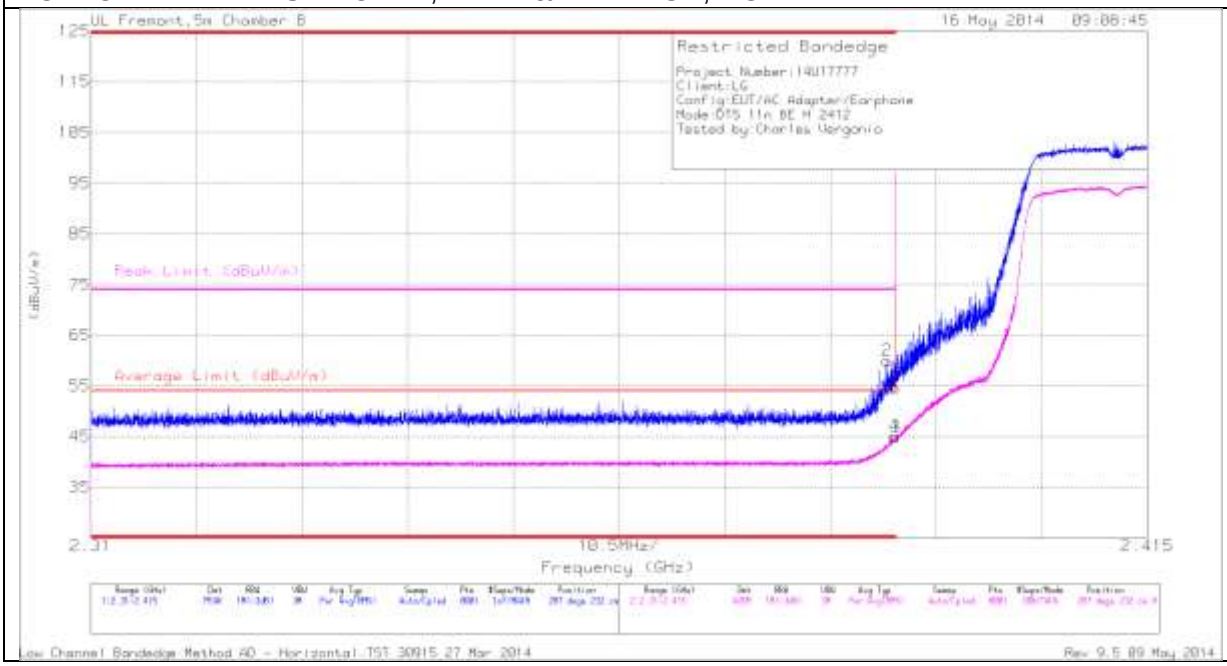
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
9.848	39.13	PK2	37	-23.9	0	52.23	54	-1.77	-	-	360	100	V
9.848	27.89	AD	37	-23.9	.2	41.19	54	-12.81	-	-	360	100	V

PK2 - KDB558074 Method: Maximum Peak

9.2.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK & AVERAGE, HORIZ



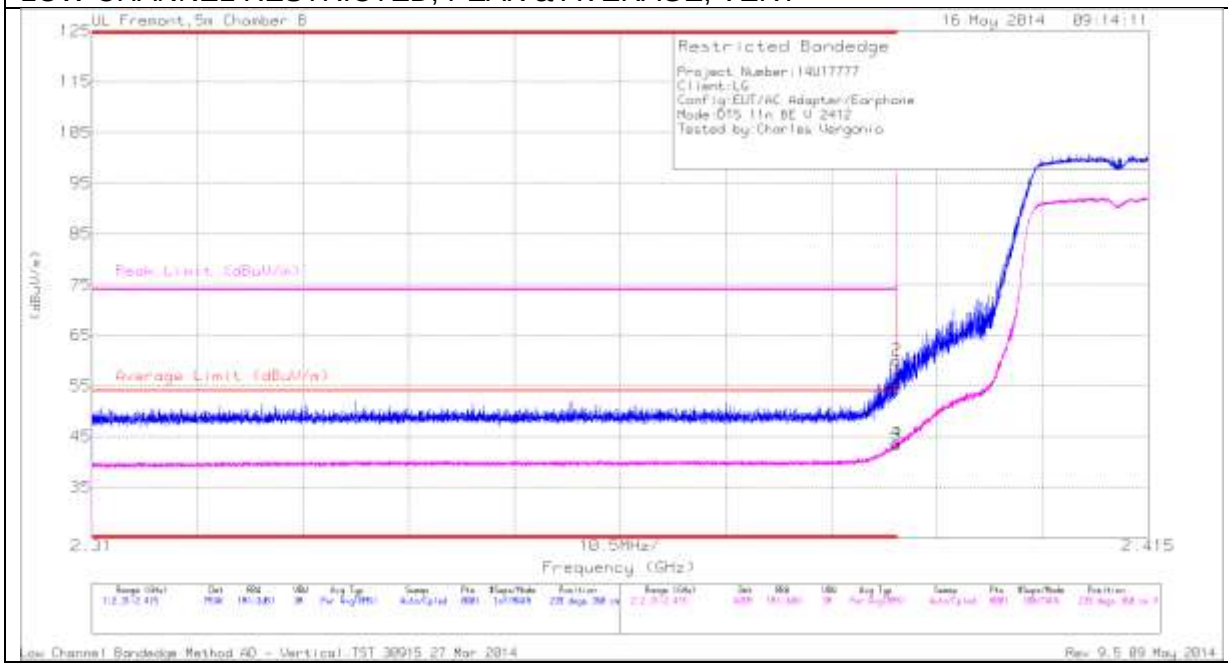
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	45.29	PK	32.1	-22.8	0	54.59	-	-	74	-19.41	287	232	H
2	* 2.389	50.67	PK	32.1	-22.8	0	59.97	-	-	74	-14.03	287	232	H
3	* 2.39	35.41	RMS	32.1	-22.8	.2	44.91	54	-9.09	-	-	287	232	H
4	* 2.39	35.5	RMS	32.1	-22.8	.2	45	54	-9	-	-	287	232	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

LOW CHANNEL RESTRICTED, PEAK & AVERAGE, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	45.13	PK	32.1	-22.8	0	54.43	-	-	74	-19.57	239	360	V
2	* 2.39	50.84	PK	32.1	-22.8	0	60.14	-	-	74	-13.86	239	360	V
3	* 2.39	33.92	RMS	32.1	-22.8	.2	43.42	54	-10.58	-	-	239	360	V
4	* 2.39	34.19	RMS	32.1	-22.8	.2	43.69	54	-10.31	-	-	239	360	V

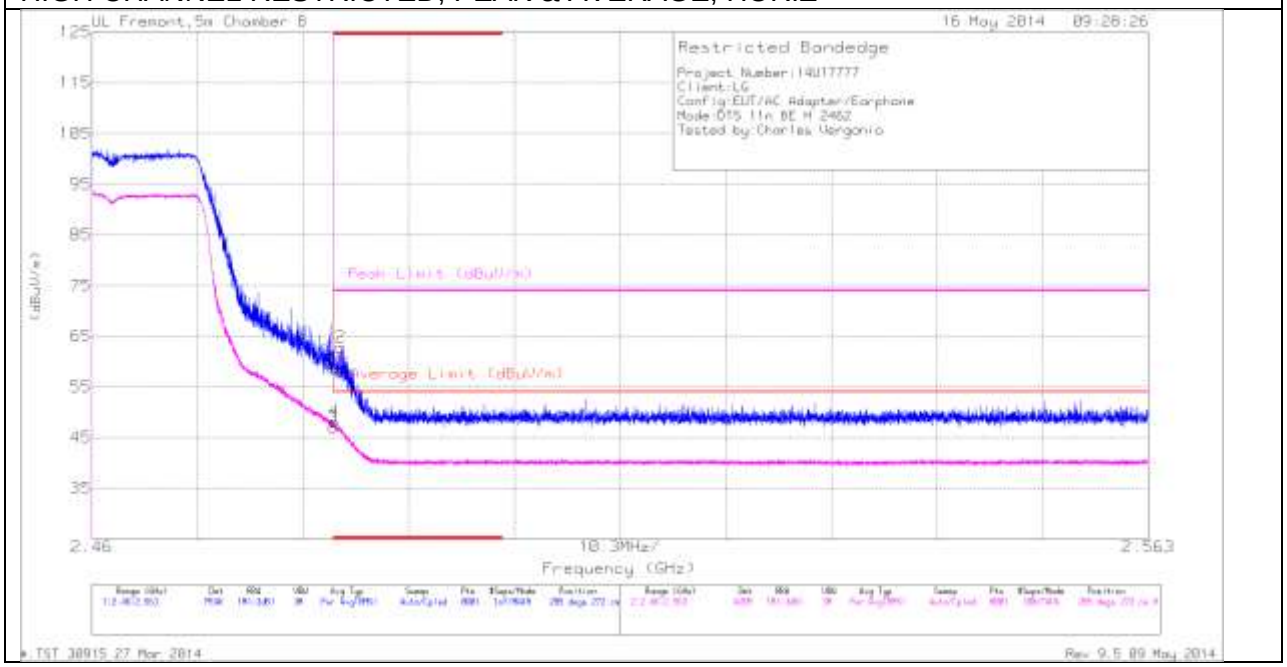
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL RESTRICTED, PEAK & AVERAGE, HORIZ



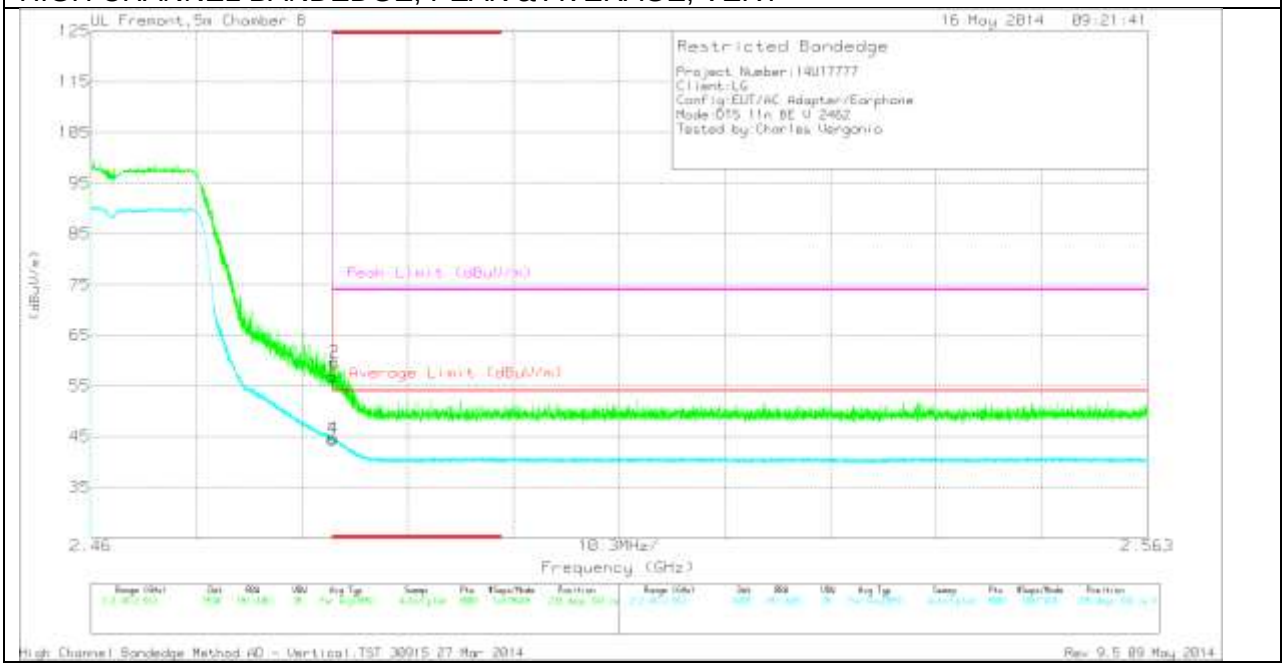
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	48.96	PK	32.4	-22.7	58.66	-	-	74	-15.34	285	272	H
2	* 2.484	53.09	PK	32.4	-22.7	62.79	-	-	74	-11.21	285	272	H
3	* 2.484	37.41	RMS	32.4	-22.7	47.11	54	-6.89	-	-	285	272	H
4	* 2.484	38.44	RMS	32.4	-22.7	48.14	54	-5.86	-	-	285	272	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

HIGH CHANNEL BANDEDGE, PEAK & AVERAGE, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	47.09	PK	32.4	-22.7	0	56.79	-	-	74	-17.21	235	343	V
2	* 2.484	50.01	PK	32.4	-22.7	0	59.71	-	-	74	-14.29	235	343	V
3	* 2.484	34.47	RMS	32.4	-22.7	.2	44.37	54	-9.63	-	-	235	343	V
4	* 2.484	34.81	RMS	32.4	-22.7	.2	44.71	54	-9.29	-	-	235	343	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL
VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	3.231	31.66	PK	32.8	-31.2	0	33.26	-	-	-	-	0-360	99	H
2	5.735	30.35	PK	34.6	-29.4	0	35.55	-	-	-	-	0-360	99	H
3	6.155	30.28	PK	35.4	-29.2	0	36.48	-	-	-	-	0-360	202	H
4	6.68	30.03	PK	35.7	-28.7	0	37.03	-	-	-	-	0-360	202	V
5	9.664	27.49	PK	36.8	-23.6	0	40.69	-	-	-	-	0-360	202	V
6	9.891	30.08	PK	37	-23.7	0	43.38	-	-	-	-	0-360	202	V

PK - Peak detector

Radiated Emissions

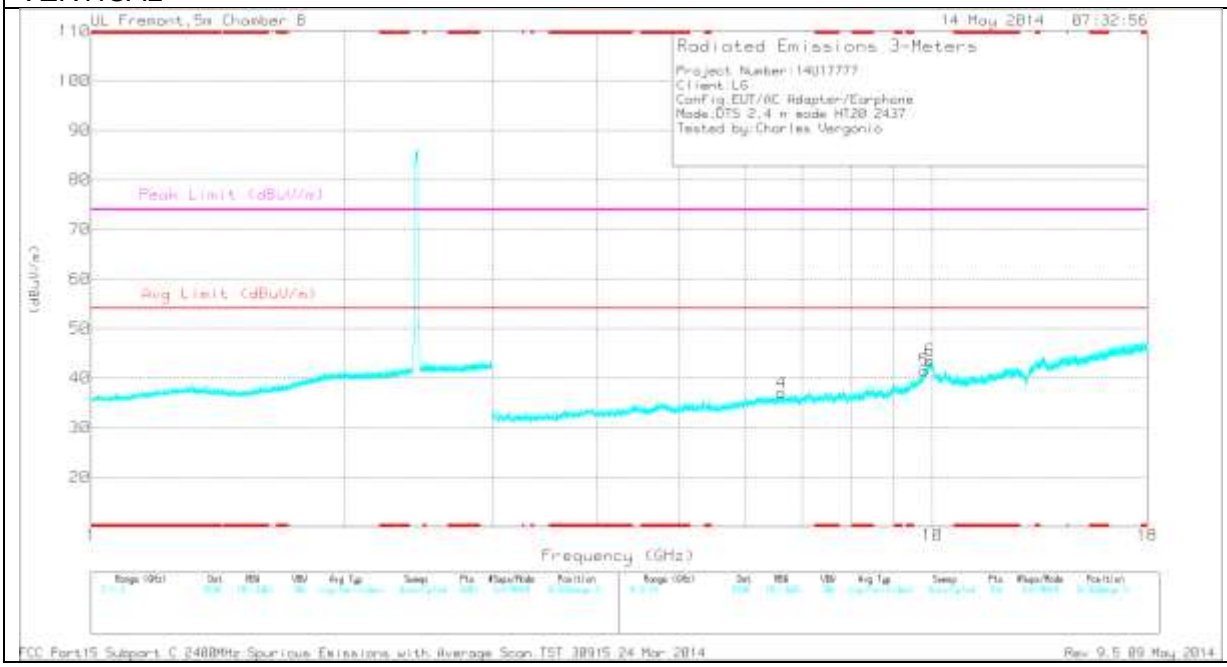
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
9.892	38.67	PK2	37	-23.6	0	52.07	54	-1.93	-	-	360	100	V
9.893	27.51	AD	37	-23.6	.22	41.11	54	-12.89	-	-	360	100	V

PK2 - KDB558074 Method: Maximum Peak

MID CHANNEL
HORIZONTAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL
VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	3.061	31.84	PK	32.8	-31.6	0	33.04	-	-	-	-	0-360	99	H
2	3.493	31.46	PK	32.8	-31.1	0	33.16	-	-	-	-	0-360	99	H
3	5.627	29.9	PK	34.5	-29.1	0	35.3	-	-	-	-	0-360	99	H
4	6.618	29.3	PK	35.7	-28	0	37	-	-	-	-	0-360	99	V
5	9.767	28.28	PK	36.9	-23.7	0	41.48	-	-	-	-	0-360	202	V
6	9.918	30.02	PK	37	-23.5	0	43.52	-	-	-	-	0-360	99	V

PK - Peak detector

Radiated Emissions

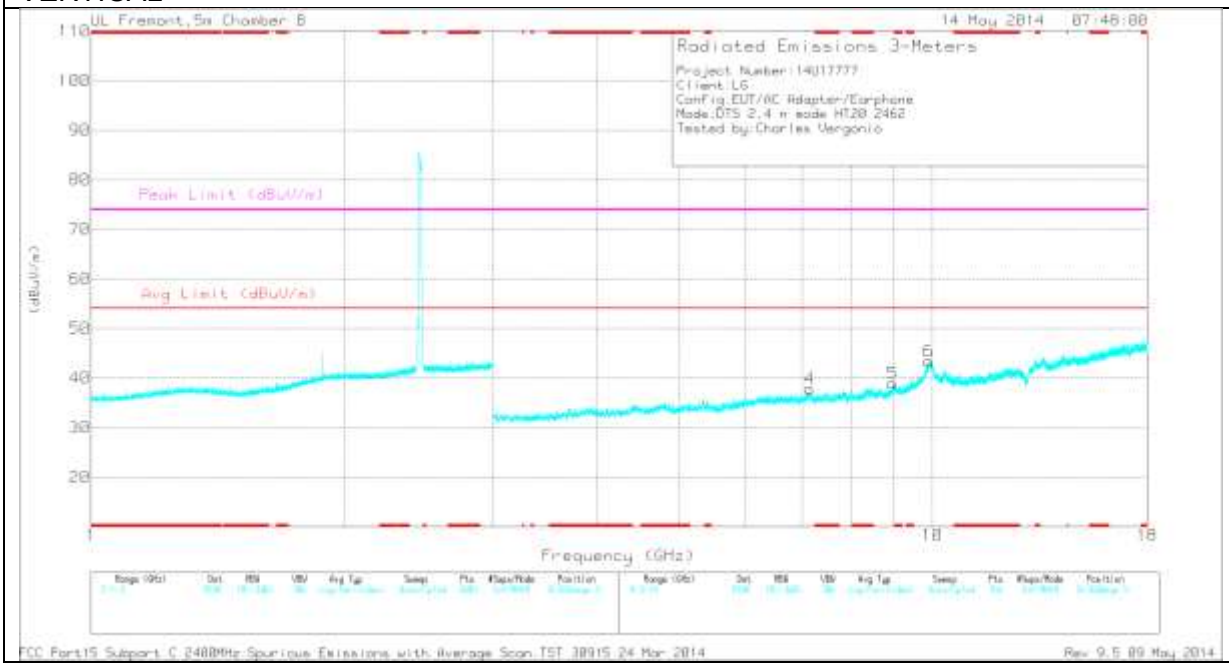
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
9.917	38.44	PK2	37	-23.6	0	51.84	54	-2.16	-	-	360	100	V
9.921	27.27	AD	37	-23.5	.22	40.97	54	-13.03	-	-	360	100	V

PK2 - KDB558074 Method: Maximum Peak

HIGH CHANNEL
HORIZONTAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL
VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	3.129	32.15	PK	32.8	-31.3	0	33.65	-	-	-	-	0-360	99	H
2	5.928	29.28	PK	35	-28.4	0	35.88	-	-	-	-	0-360	99	H
3	6.259	29.83	PK	35.5	-28.5	0	36.83	-	-	-	-	0-360	99	H
4	7.146	29.01	PK	35.6	-26.8	0	37.81	-	-	-	-	0-360	202	V
5	8.969	26.99	PK	36.2	-24.2	0	38.99	-	-	-	-	0-360	99	V
6	9.901	29.99	PK	37	-23.6	0	43.39	-	-	-	-	0-360	99	V

PK - Peak detector

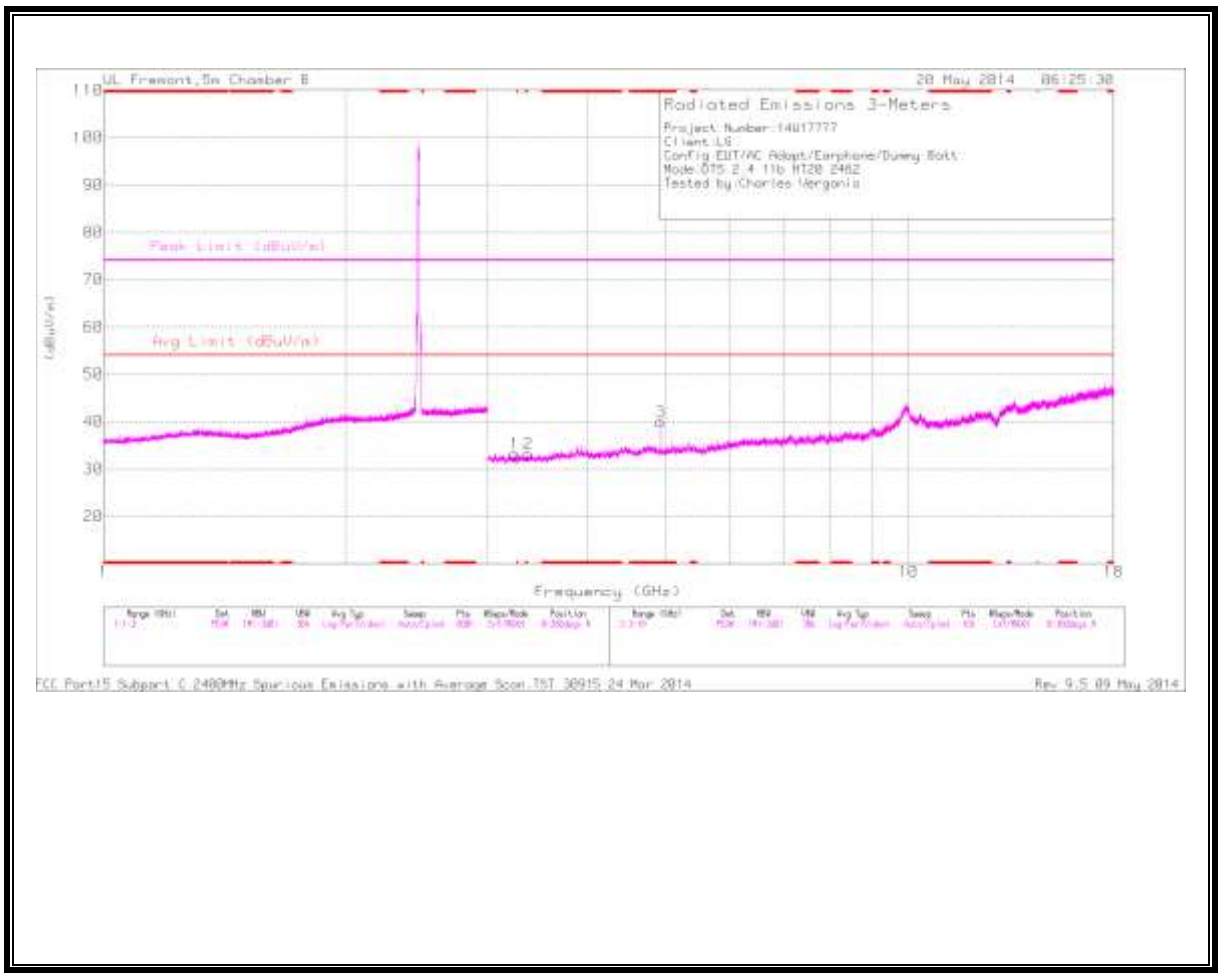
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
9.9	38.77	PK2	37	-23.6	0	52.17	54	-1.83	-	-	360	100	V
9.902	27.76	AD	37	-23.6	.22	41.36	54	-12.64	-	-	360	100	V

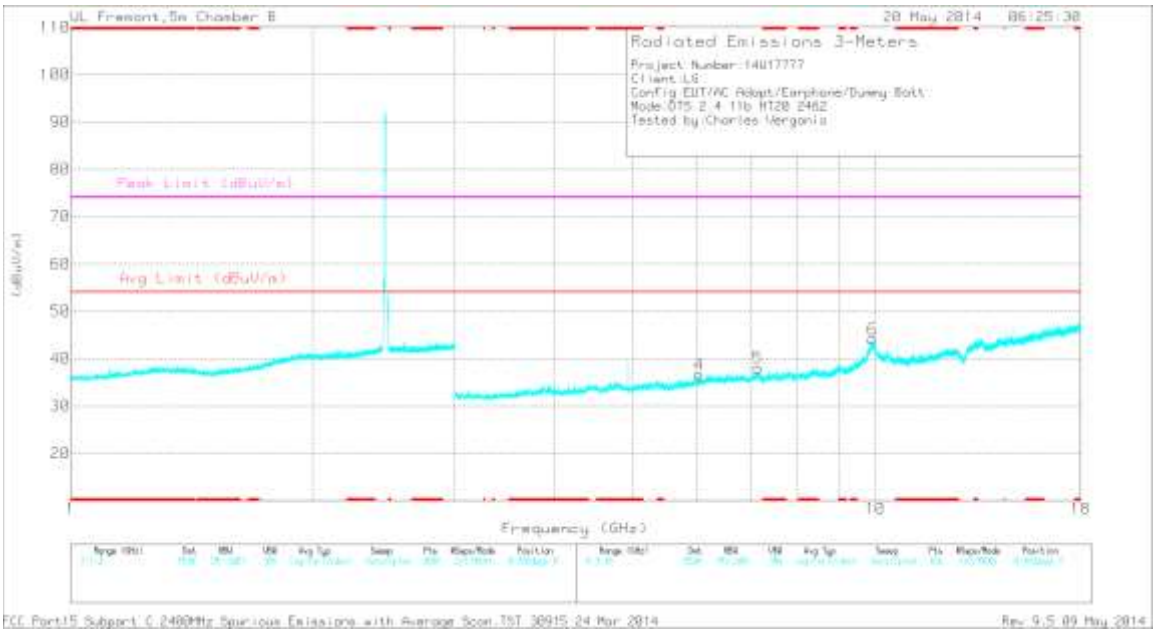
PK2 - KDB558074 Method: Maximum Peak

WORST CASE HARMONICS AND SPURIOUS EMISSIONS WITH SMART COVER

HORIZONTAL



VERTICAL



CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.924	36.58	PK	34.2	-30.8	39.98	-	-	74	-34.02	0-360	99	H
1	3.239	31.68	PK	32.8	-31.3	33.18	-	-	-	-	0-360	202	H
2	3.373	31.87	PK	32.8	-31.4	33.27	-	-	-	-	0-360	99	H
4	6.036	30.53	PK	35.3	-29.2	36.63	-	-	-	-	0-360	99	V
5	7.15	29.3	PK	35.6	-26.9	38	-	-	-	-	0-360	202	V
6	9.927	30.59	PK	37	-23.4	44.19	-	-	-	-	0-360	202	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.924	44.45	PK2	34.2	-30.8	47.85	-	-	74	-26.15	2	213	H
* 4.924	37.75	MAv1	34.2	-30.8	41.15	54	-12.85	-	-	2	213	H
9.928	38.88	PK2	37	-23.4	52.48	-	-	-	-	2	201	V
9.929	27.55	MAv1	37	-23.4	41.15	-	-	-	-	2	201	V

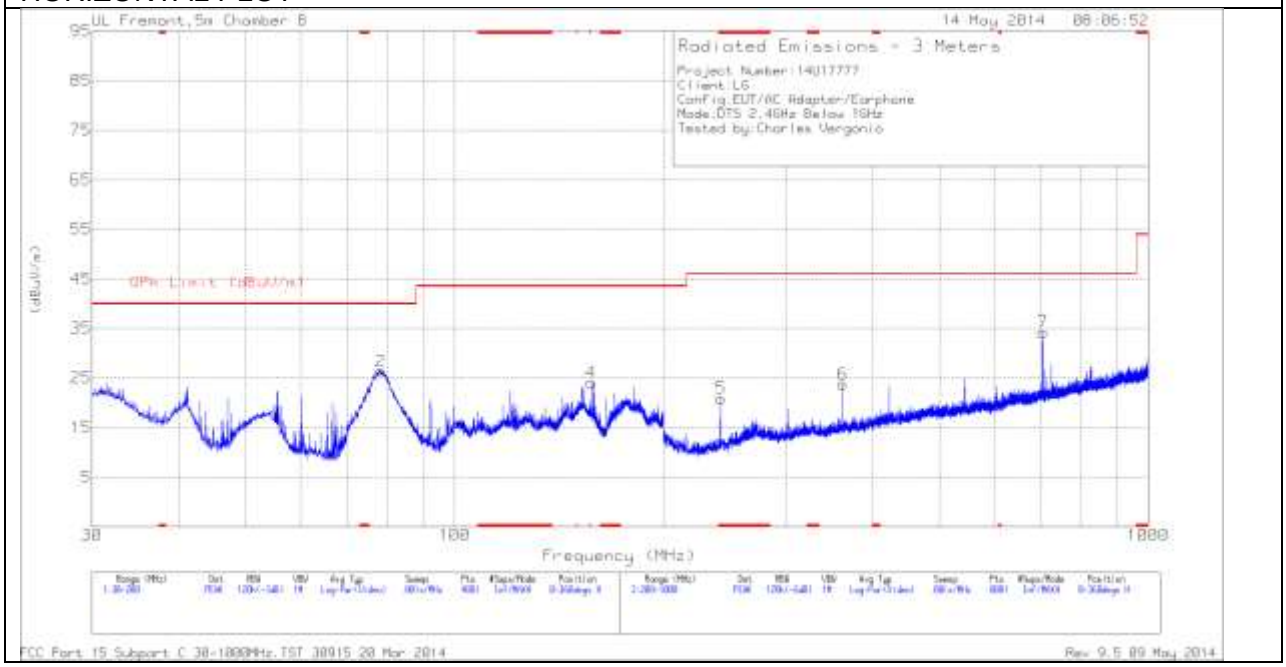
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

9.3. WORST-CASE BELOW 1 GHz

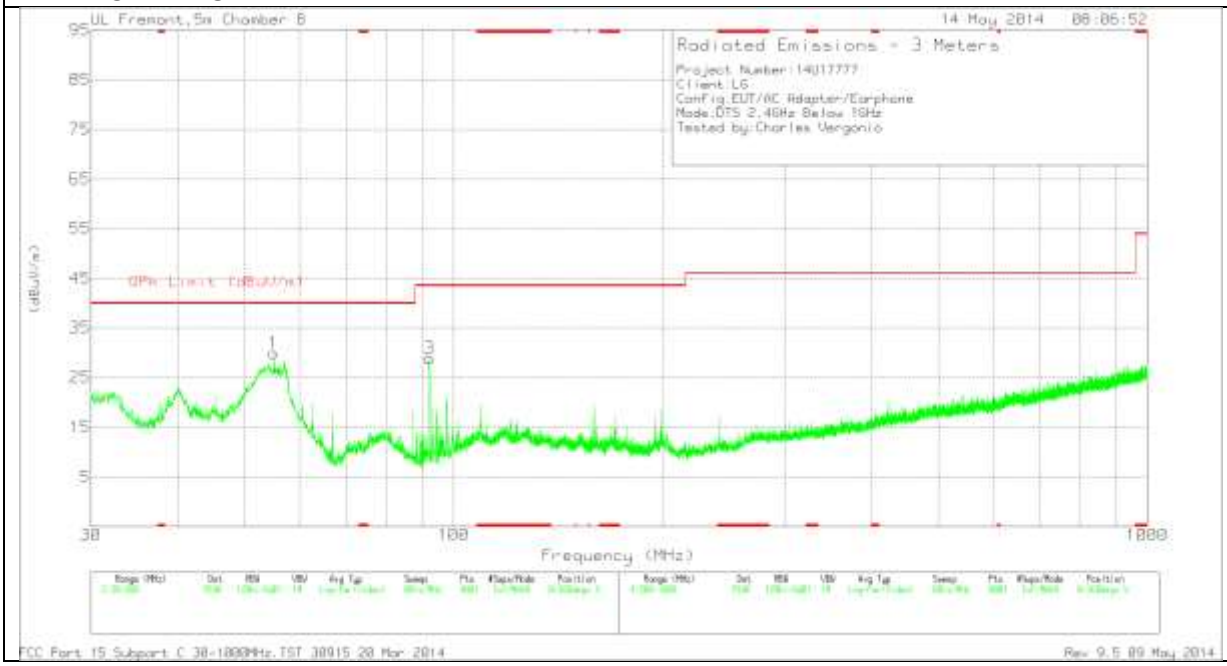
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



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

VERTICAL PLOT



Below 1G Data

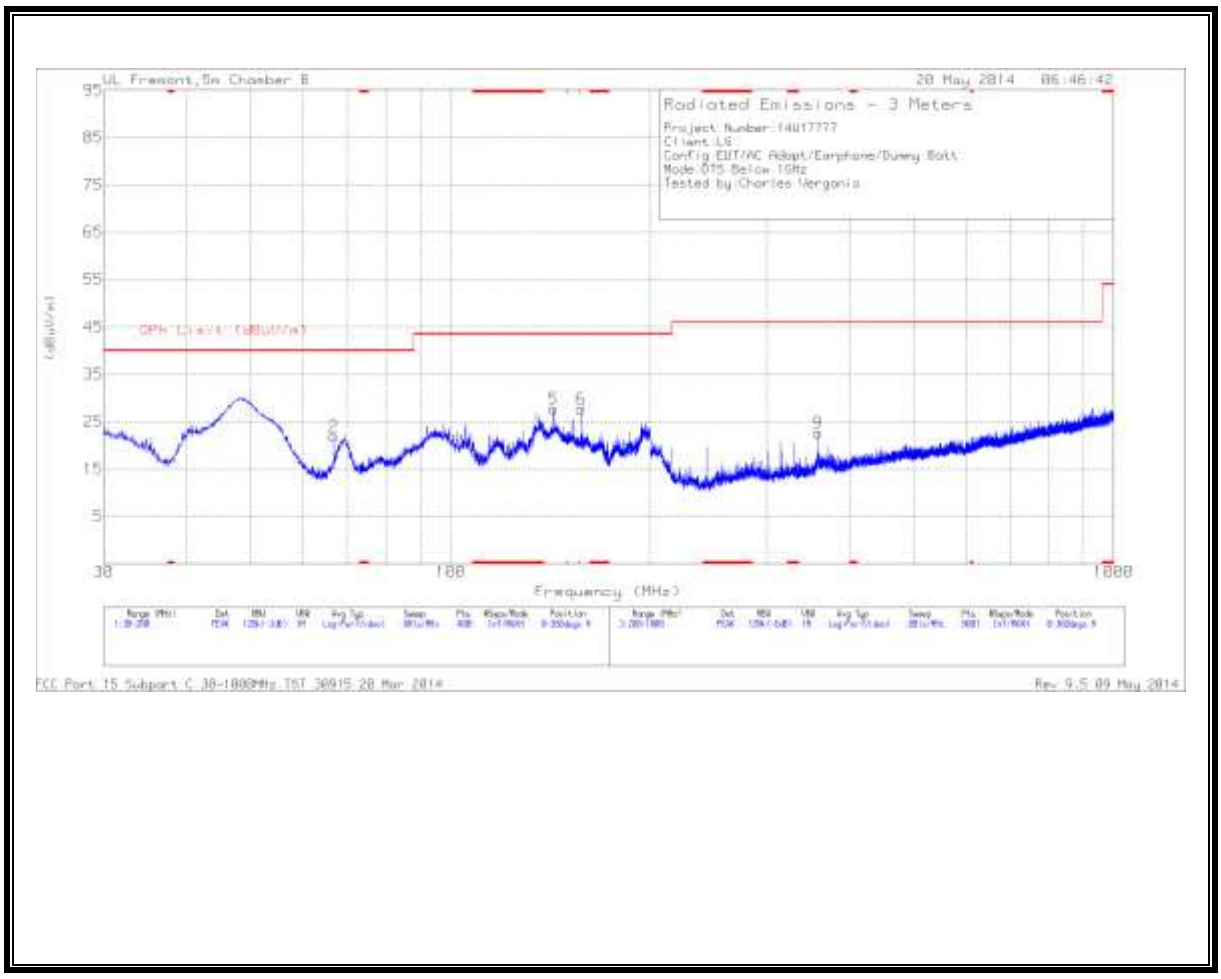
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 241.9	35.65	PK	11.7	-26.4	20.95	46.02	-25.07	0-360	101	H
1	55.0325	51.28	PK	7.2	-28.5	29.98	40	-10.02	0-360	101	V
2	78.365	46.88	PK	7.8	-28.3	26.38	40	-13.62	0-360	200	H
3	92.3263	48.86	PK	8.2	-28.1	28.96	43.52	-14.56	0-360	101	V
4	157.5425	39.26	PK	12.2	-27.4	24.06	43.52	-19.46	0-360	200	H
6	362.8	34.82	PK	14.8	-25.8	23.82	46.02	-22.2	0-360	101	H
7	704.9	38.61	PK	20.2	-24.6	34.21	46.02	-11.81	0-360	200	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

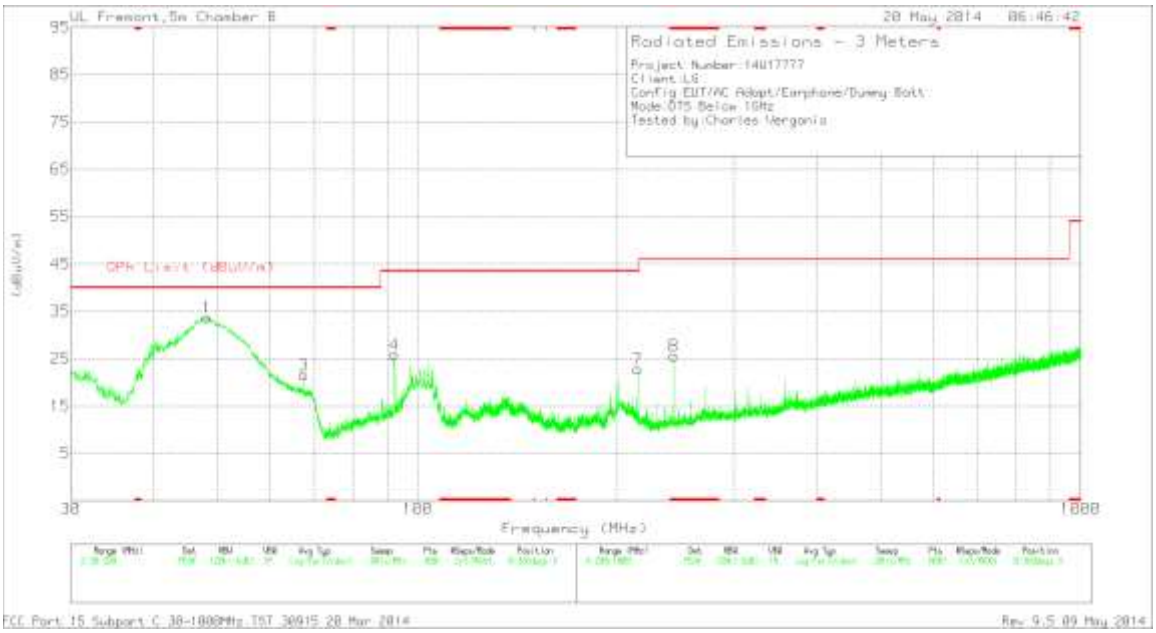
PK - Peak detector

WORST CASE HARMONICS AND SPURIOUS EMISSIONS WITH SMART COVER

HORIZONTAL



VERTICAL



CHANNEL 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
8	* 243.4	40.36	PK	11.7	-26.4	25.66	46.02	-20.36	0-360	200	V
1	48.1475	53.48	PK	8.7	-28.5	33.68	40	-6.32	0-360	101	V
2	66.72	42.35	PK	8	-28.4	21.95	40	-18.05	0-360	400	H
3	67.4	41.96	PK	8	-28.4	21.56	40	-18.44	0-360	101	V
4	92.3475	45.79	PK	8.2	-28.1	25.89	43.52	-17.63	0-360	101	V
5	143.1775	42.6	PK	12.7	-27.5	27.8	43.52	-15.72	0-360	200	H
6	157.5	42.91	PK	12.2	-27.4	27.71	43.52	-15.81	0-360	200	H
7	214.8	39	PK	10.6	-26.8	22.8	43.52	-20.72	0-360	200	V
9	357.9	33.92	PK	14.6	-25.8	22.72	46.02	-23.3	0-360	300	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector