FCC CFR47 PART 15 SUBPART C

C2PC CERTIFICATION TEST REPORT

FOR

CDMA/LTE PHONE + BLUETOOTH, & 2.4GHz DTS b/g/n

MODEL NUMBER: LG-VW820, VW820, LGVW820

FCC ID: ZNFVW820

REPORT NUMBER: 15I20187-E4

ISSUE DATE: MARCH 18, 2015

Prepared for

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Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
--	03/18/15	Initial Issue	D. Coronia

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	LG ELECTRONICS MOBILECOMM U.S.A., INC
EUT DESCRIPTION:	CDMA/LTE PHONE + BLUETOOTH, & 2.4GHz DTS b/g/n
MODEL:	LG-VW820, VW820, LGVW820
SERIAL NUMBER:	2064709 (Radiated) 2064704 (Conducted)
DATE TESTED:	March 4 & 10, 2015

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	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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WiSE LABORATORY TECHNICIAN
UL VERIFICATION SERVICES INC

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2009, FCC CFR 47 Part 2, and FCC CFR 47 Part 15C.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☒ Chamber A(IC: 2324B-1)	☐ Chamber D(IC: 2324B-4)
☐ Chamber B(IC: 2324B-2)	☐ Chamber E(IC: 2324B-5)
☐ Chamber C(IC: 2324B-3)	☐ Chamber F(IC: 2324B-6)
	☒ Chamber G(IC: 2324B-7)
	☐ Chamber H(IC: 2324B-8)

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

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 CDMA/LTE PHONE + BLUETOOTH, & 2.4GHz DTS b/g/n.

5.1. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:
See original report for details.

5.2. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -2.14dBi.

5.3. 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

5.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Adapter	LG	MCS-02WR	RA4Y1031433	N/A
Earphone	LG	N/A	N/A	N/A

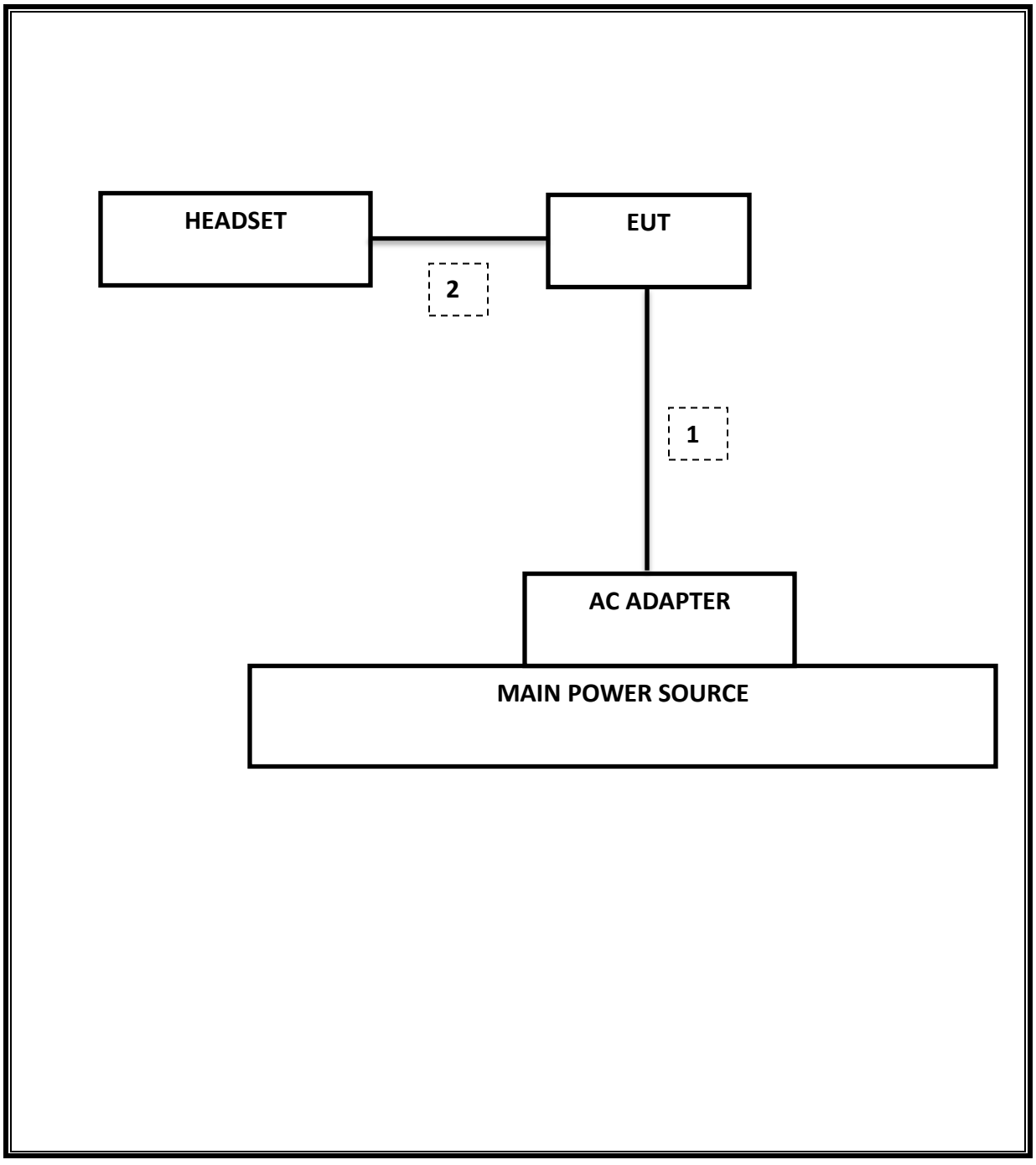
I/O CABLES

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	12/20/15
Spectrum Analyzer,9KHz-40GHz	HP	8564E	C00986	04/01/15
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	08/13/15
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/18/15
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/15
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/15
Antenna, Horn, 1-18 GHz	ETS	3117	C01022	01/15/16
Antenna, Horn,18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/15
Antenna, Horn, 26-40 GHz	ARA	MWH-2640	C00891	06/28/15
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/15
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/15
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/15
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	F00351	06/27/15
AC Power Supply, 2,500VA 45-500Hz	Elgar-Ametek	CW2501M	F00013	CNR
RF Preamplifier, 1GHz - 40GHz	Miteq	NSP4000-SP2	C00990	08/20/15
Attenuator / Switch driver	HP	11713A	F00204	CNR
Low Pass Filter 3GHz	Micro-Tronics	LPS17541	F00219	05/23/15
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/15
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/15

Test Software List			
Description	**Manufacturer**	**Model**	**Version**
Radiated Software	UL	UL EMC	Version 9.5, 07/22/14
Conducted Software	UL	UL EMC	Version 9.5, 05/17/14
CLT Software	UL	UL RF	Version 1.0, 02/02/15
Antenna Port Software	UL	UL RF	Version 2.1.1.1, 1/20/15

7. MEASUREMENT METHODS

KDB 558074 D01 DTS Meas Guidance v03r02: Measurement Procedure AVGPM-G is used for power and AVGPSD-3 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

C2PC reason: Please see LG FCC Class II cover letter for details.

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	39.78 dBuV/m

9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

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 = 0.3dB; N mode = 0.32dB.

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.

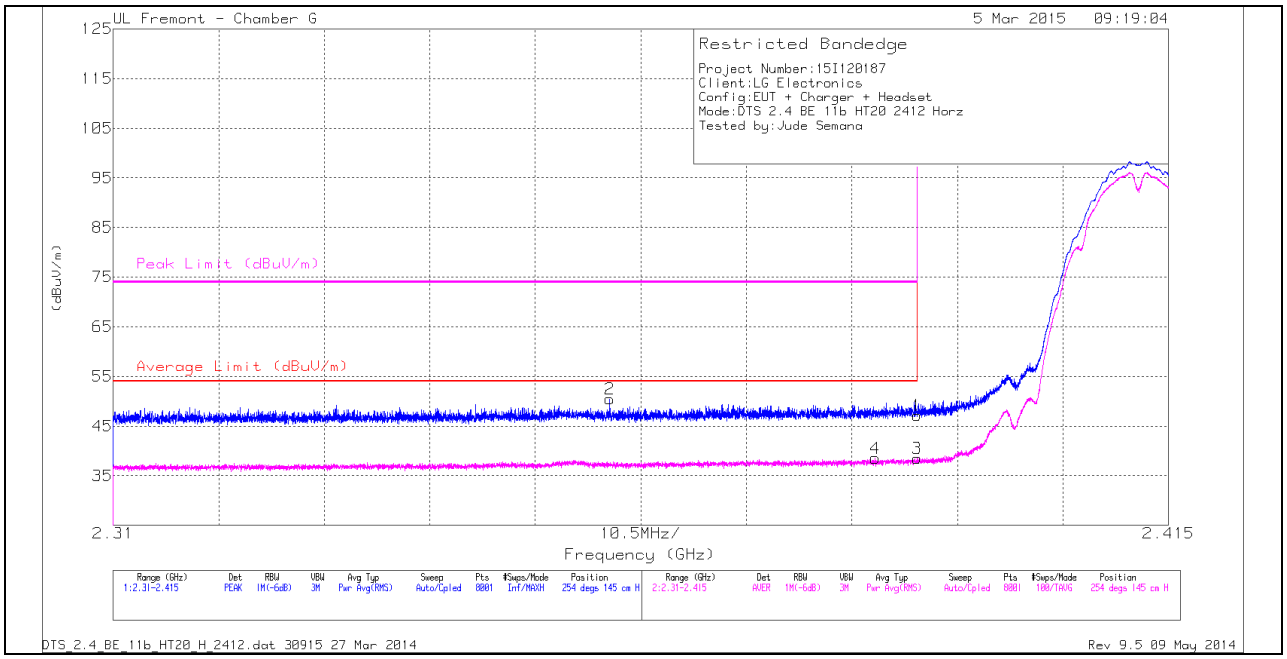
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

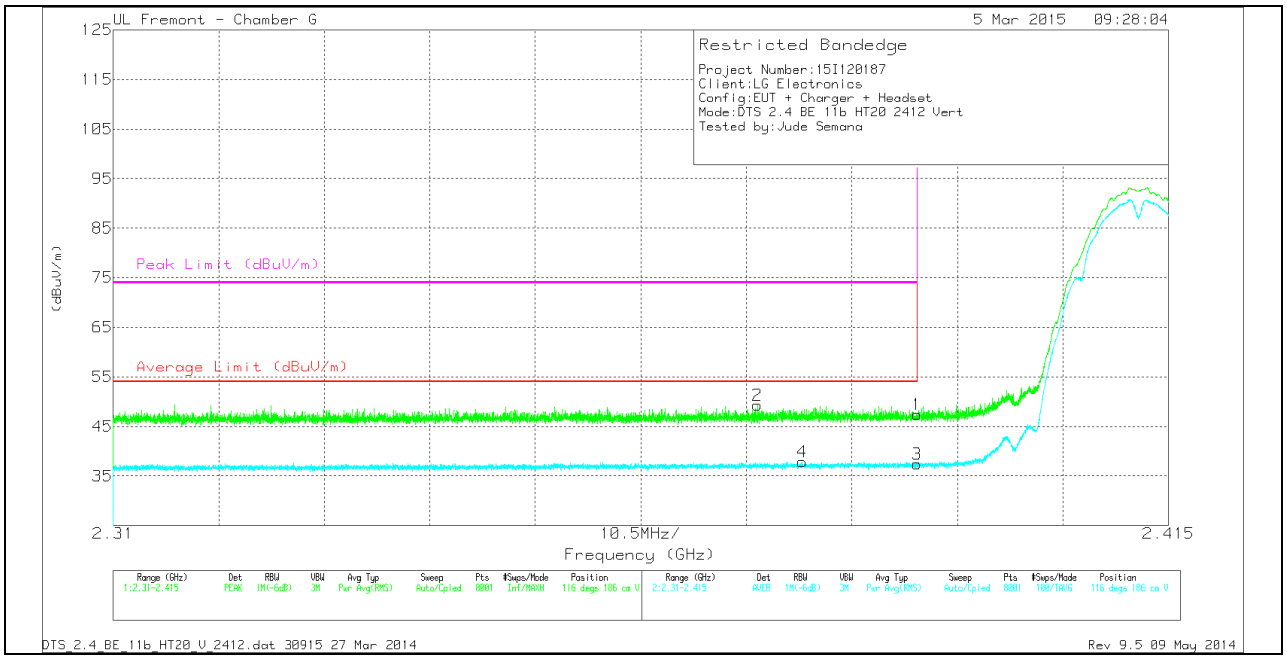
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Flt r/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	40.25	PK	31.8	-24.9	0	47.15	-	-	74	-26.85	254	145	H
2	* 2.359	43.74	PK	31.7	-25	0	50.44	-	-	74	-23.56	254	145	H
3	* 2.39	31.59	RMS	31.8	-24.9	0	38.49	54	-15.51	-	-	254	145	H
4	* 2.386	31.63	RMS	31.8	-24.9	0	38.53	54	-15.47	-	-	254	145	H

VERTICAL PEAK AND AVERAGE PLOT

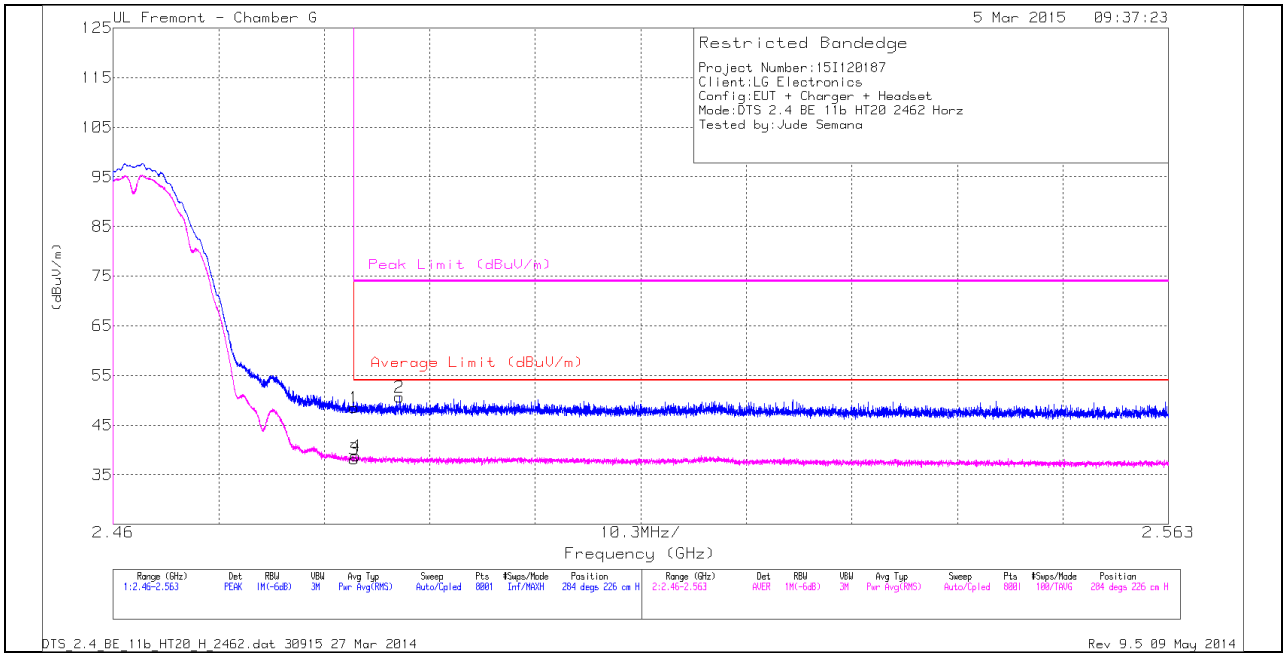


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	40.53	PK	31.8	-24.9	0	47.43	-	-	74	-26.57	116	186	V
2	* 2.374	42.49	PK	31.7	-24.9	0	49.29	-	-	74	-24.71	116	186	V
3	* 2.39	30.51	RMS	31.8	-24.9	0	37.41	54	-16.59	-	-	116	186	V
4	* 2.379	30.94	RMS	31.8	-24.9	0	37.84	54	-16.16	-	-	116	186	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

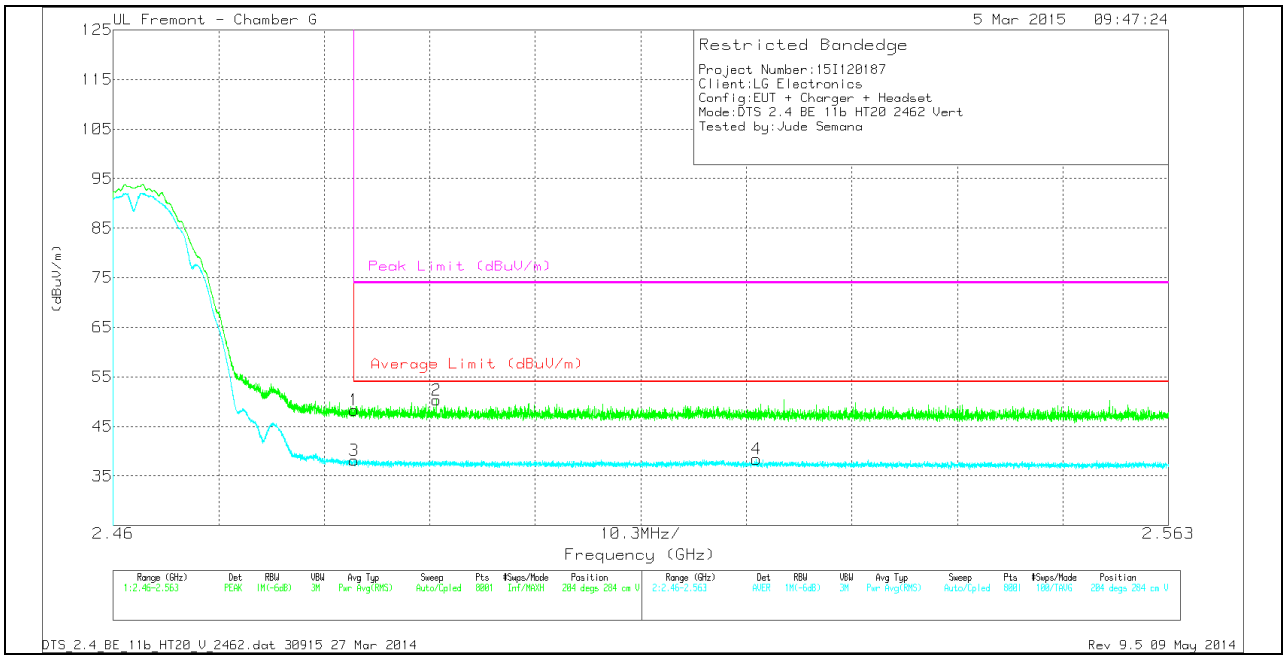
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	41.4	PK	32	-24.9	0	48.5	-	-	74	-25.5	284	226	H
2	* 2.488	43.54	PK	32	-24.9	0	50.64	-	-	74	-23.36	284	226	H
3	* 2.484	31.02	RMS	32	-24.9	0	38.12	54	-15.88	-	-	284	226	H
4	* 2.484	31.73	RMS	32	-24.9	0	38.83	54	-15.17	-	-	284	226	H

VERTICAL PEAK AND AVERAGE PLOT

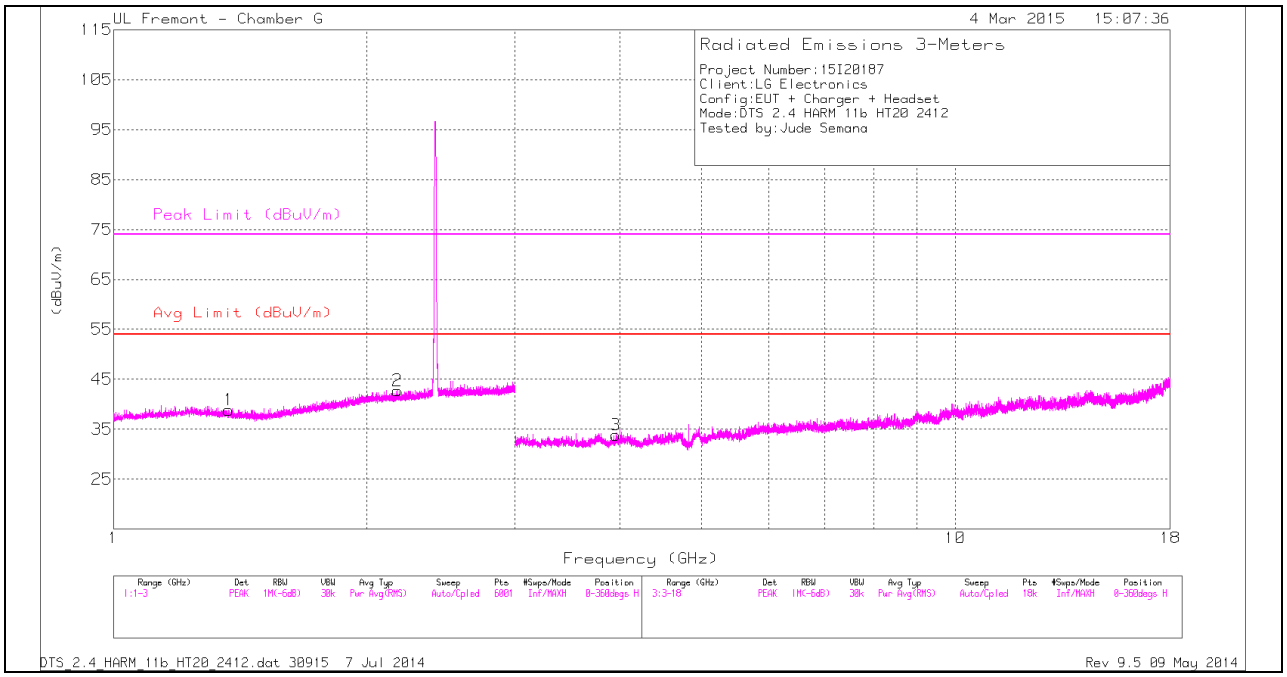


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	41.17	PK	32	-24.9	0	48.27	-	-	74	-25.73	204	284	V
2	* 2.492	43.24	PK	32	-24.9	0	50.34	-	-	74	-23.66	204	284	V
3	* 2.484	31.03	RMS	32	-24.9	0	38.13	54	-15.87	-	-	204	284	V
4	2.523	31.3	RMS	32	-24.9	0	38.4	54	-15.6	-	-	204	284	V

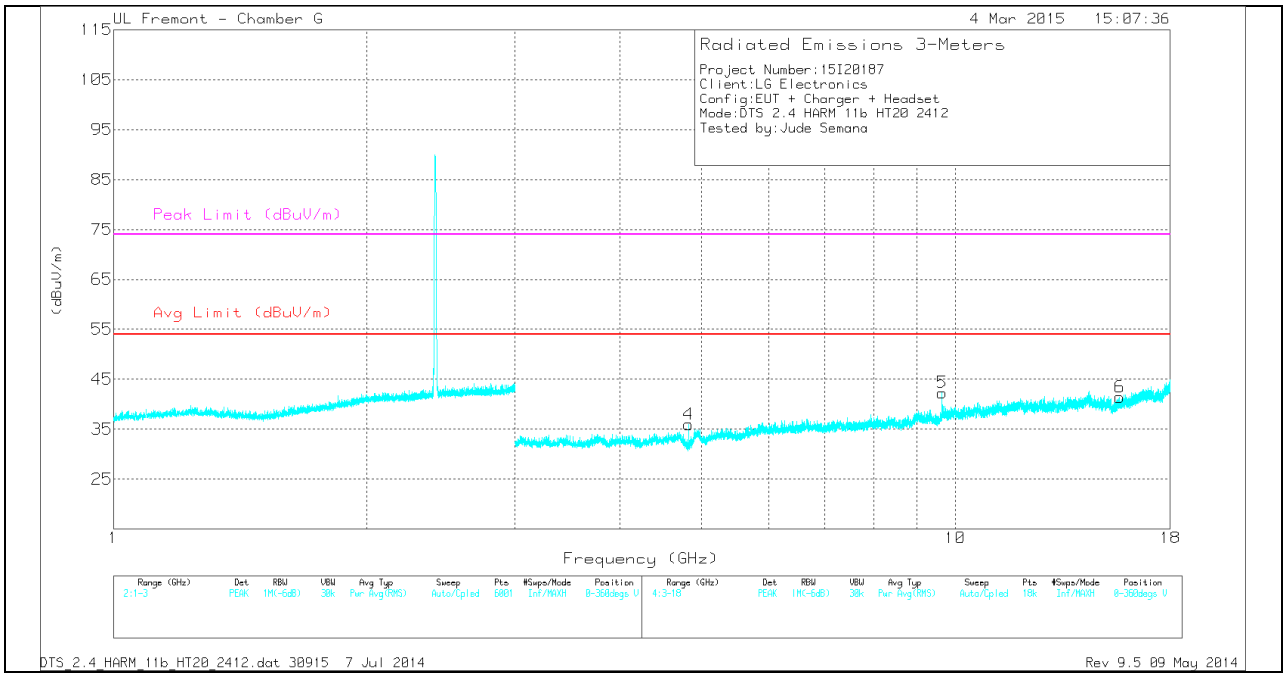
HARMONICS AND SPURIOUS EMISSIONS

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.

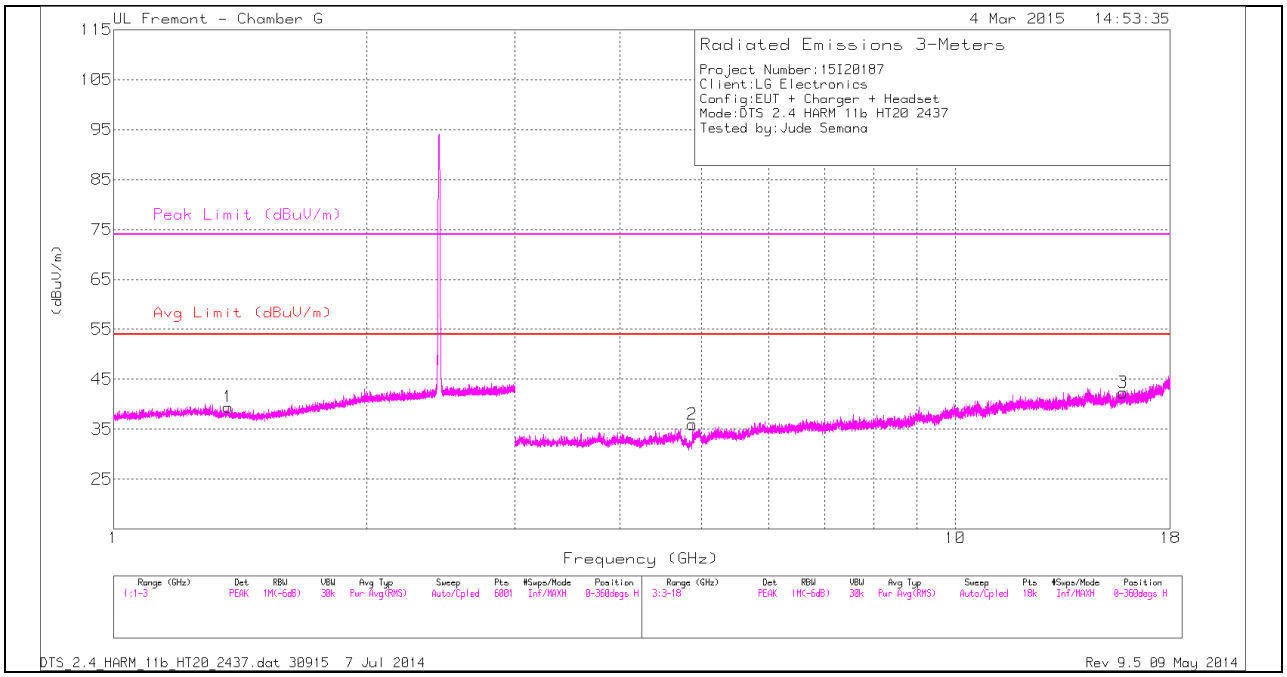
LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	* 1.371	36.05	PK	28.6	-25.8	0	38.85	-	-	74	-35.15	0-360	201	H
3	* 3.953	33.73	PK	33.3	-33.2	0	33.83	-	-	74	-40.17	0-360	201	H
4	* 4.824	34.91	PK	34.1	-33	0	36.01	-	-	74	-37.99	0-360	101	V
6	* 15.673	28.83	PK	40.1	-27.5	0	41.43	-	-	74	-32.57	0-360	101	V
2	2.175	36.42	PK	31.4	-25.1	0	42.72	-	-	-	-	0-360	101	H
5	9.647	33.4	PK	36.9	-28	0	42.3	-	-	-	-	0-360	101	V

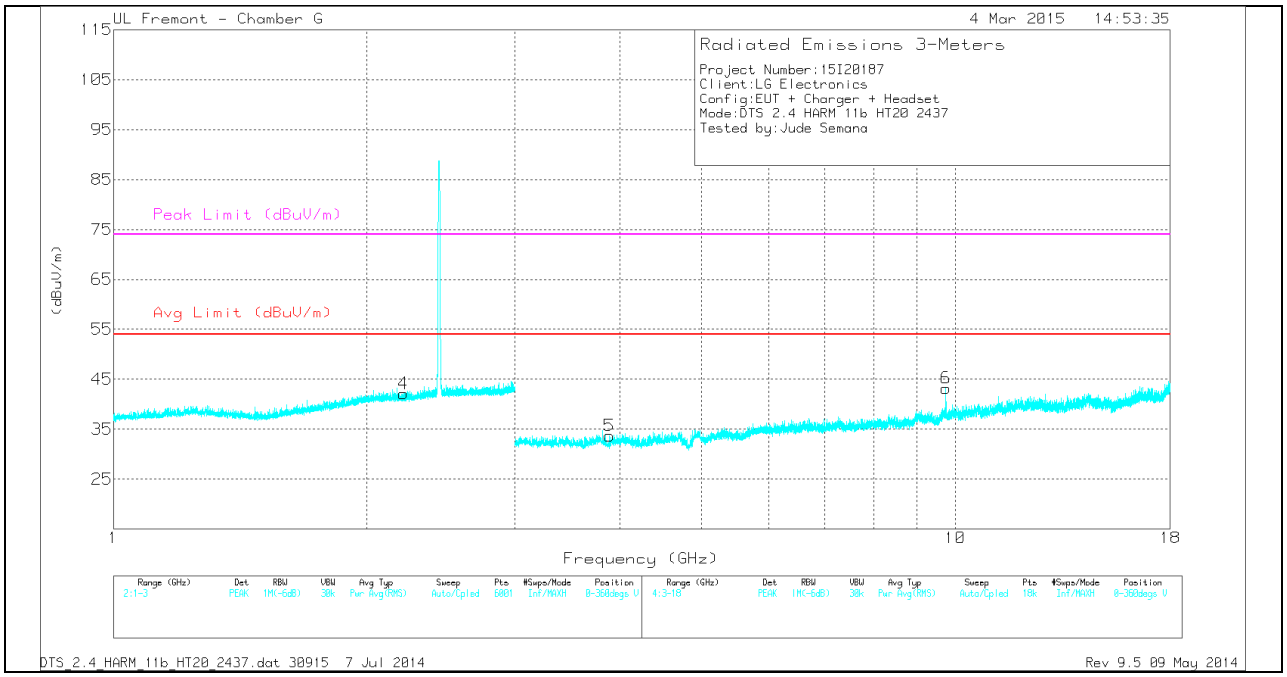
PK - Peak detector

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.

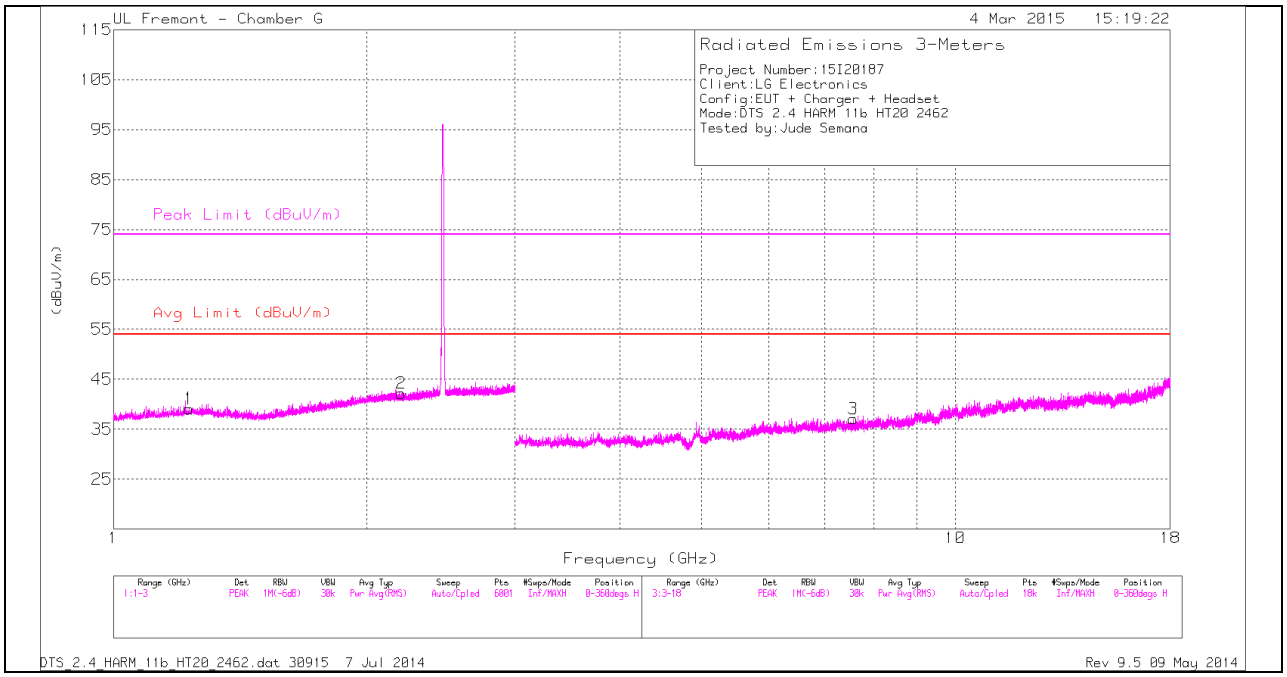
MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	* 1.369	36.72	PK	28.6	-25.9	0	39.42	-	-	74	-34.58	0-360	100	H
3	* 15.826	29.48	PK	40.3	-27.4	0	42.38	-	-	74	-31.62	0-360	101	H
4	* 2.211	35.73	PK	31.5	-25.1	0	42.13	-	-	74	-31.87	0-360	101	V
5	* 3.885	34.38	PK	33.2	-33.9	0	33.68	-	-	74	-40.32	0-360	201	V
2	* 4.874	34.99	PK	34.1	-33.1	0	35.99	-	-	74	-38.01	0-360	101	H
6	9.748	34.01	PK	37	-27.8	0	43.21	-	-	-	-	0-360	101	V

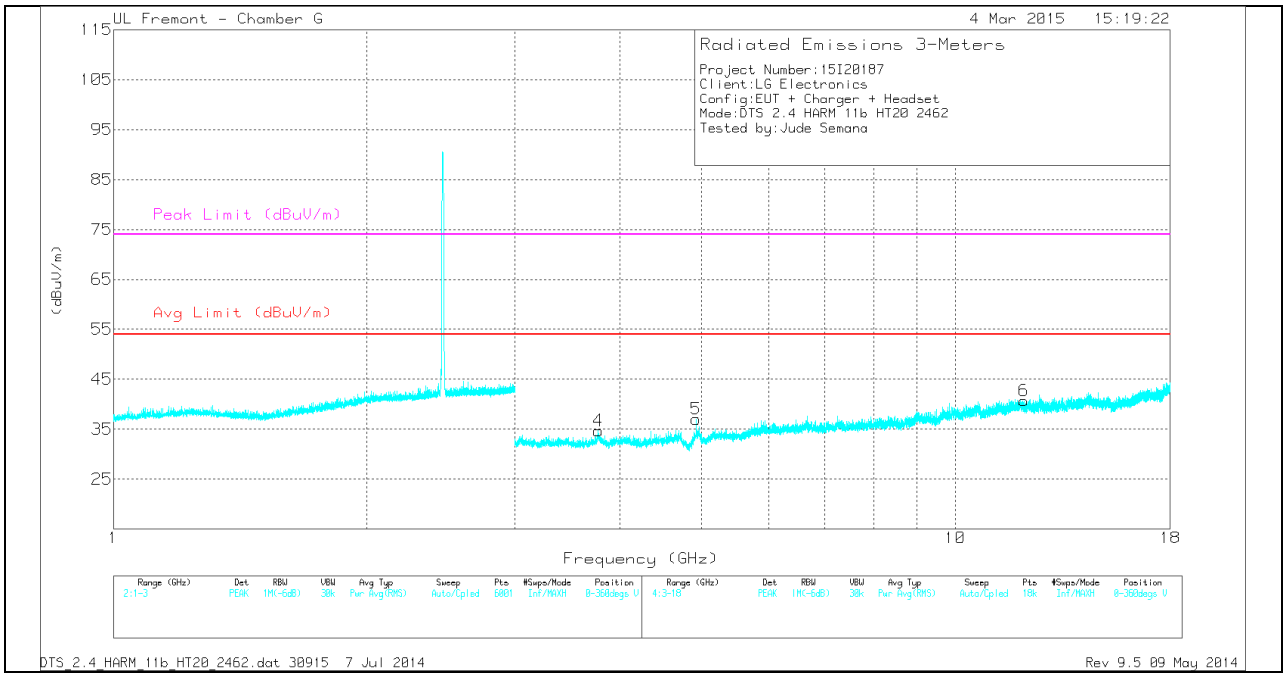
PK - Peak detector

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

TRACE MARKERS

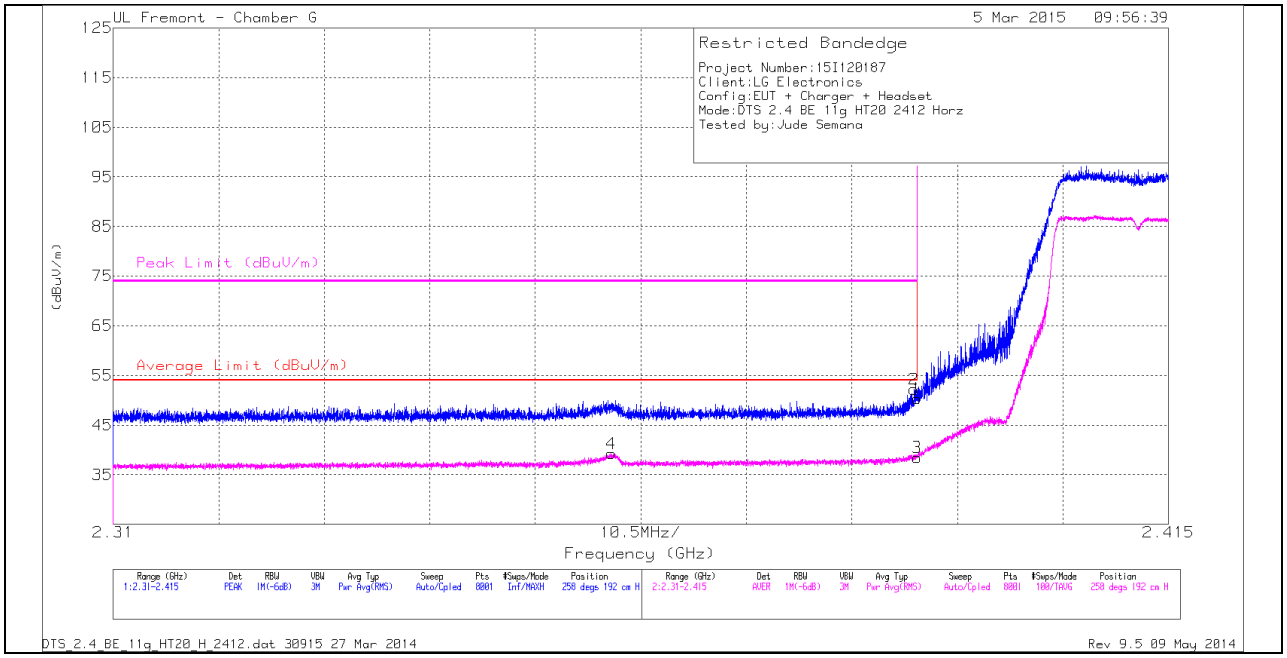
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.231	36	PK	29.1	-26	0	39.1	-	-	74	-34.9	0-360	100	H
3	* 7.566	31.79	PK	35.6	-30.3	0	37.09	-	-	74	-36.91	0-360	201	H
4	* 3.767	34.19	PK	32.9	-32.4	0	34.69	-	-	74	-39.31	0-360	201	V
5	* 4.924	36.07	PK	34.1	-33.1	0	37.07	-	-	74	-36.93	0-360	201	V
6	* 12.064	28.93	PK	38.8	-27	0	40.73	-	-	74	-33.27	0-360	101	V
2	2.198	35.76	PK	31.5	-25.1	0	42.16	-	-	-	-	0-360	100	H

PK - Peak detector

9.2.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

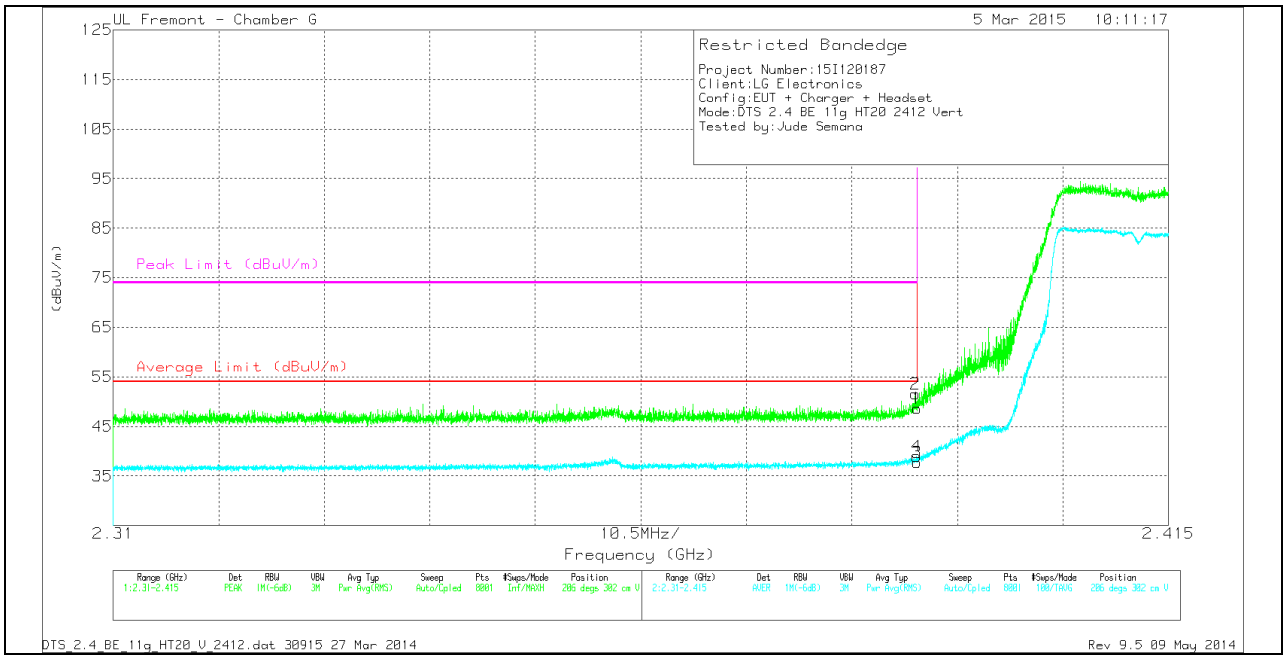
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	43.44	PK	31.8	-24.9	0	50.34	-	-	74	-23.66	258	192	H
2	* 2.39	45.31	PK	31.8	-24.9	0	52.21	-	-	74	-21.79	258	192	H
3	* 2.39	31.52	RMS	31.8	-24.9	0	38.42	54	-15.58	-	-	258	192	H
4	* 2.36	32.57	RMS	31.7	-25	0	39.27	54	-14.73	-	-	258	192	H

VERTICAL PEAK AND AVERAGE PLOT

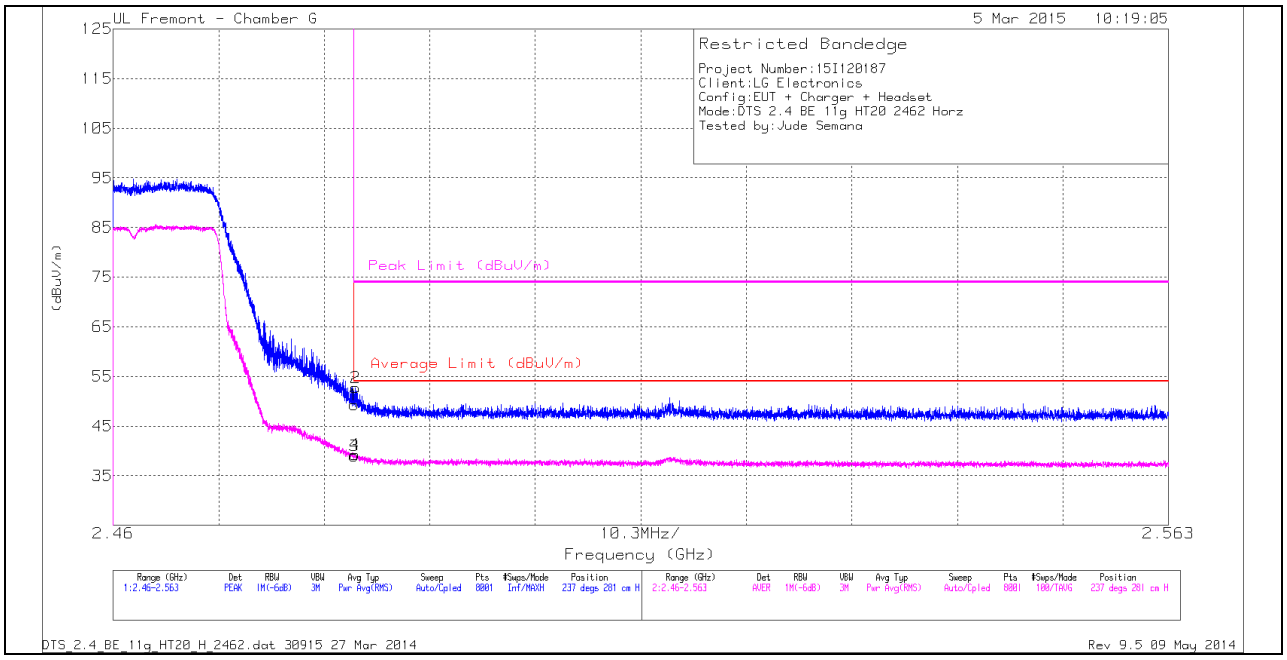


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	41.74	PK	31.8	-24.9	0	48.64	-	-	74	-25.36	206	302	V
2	* 2.39	44.69	PK	31.8	-24.9	0	51.59	-	-	74	-22.41	206	302	V
3	* 2.39	30.84	RMS	31.8	-24.9	0	37.74	54	-16.26	-	-	206	302	V
4	* 2.39	32.1	RMS	31.8	-24.9	0	39	54	-15	-	-	206	302	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

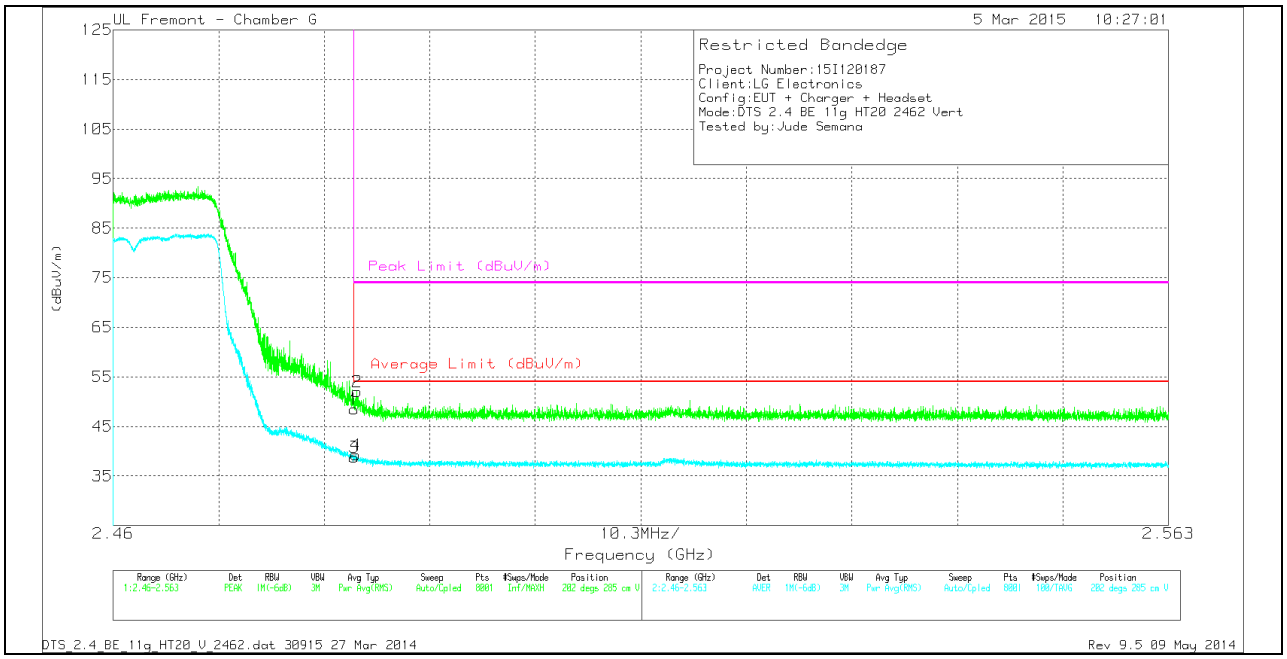
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	42.21	PK	32	-24.9	0	49.31	-	-	74	-24.69	237	281	H
2	* 2.484	45.62	PK	32	-24.9	0	52.72	-	-	74	-21.28	237	281	H
3	* 2.484	31.89	RMS	32	-24.9	0	38.99	54	-15.01	-	-	237	281	H
4	* 2.484	32.15	RMS	32	-24.9	0	39.25	54	-14.75	-	-	237	281	H

VERTICAL PEAK AND AVERAGE PLOT

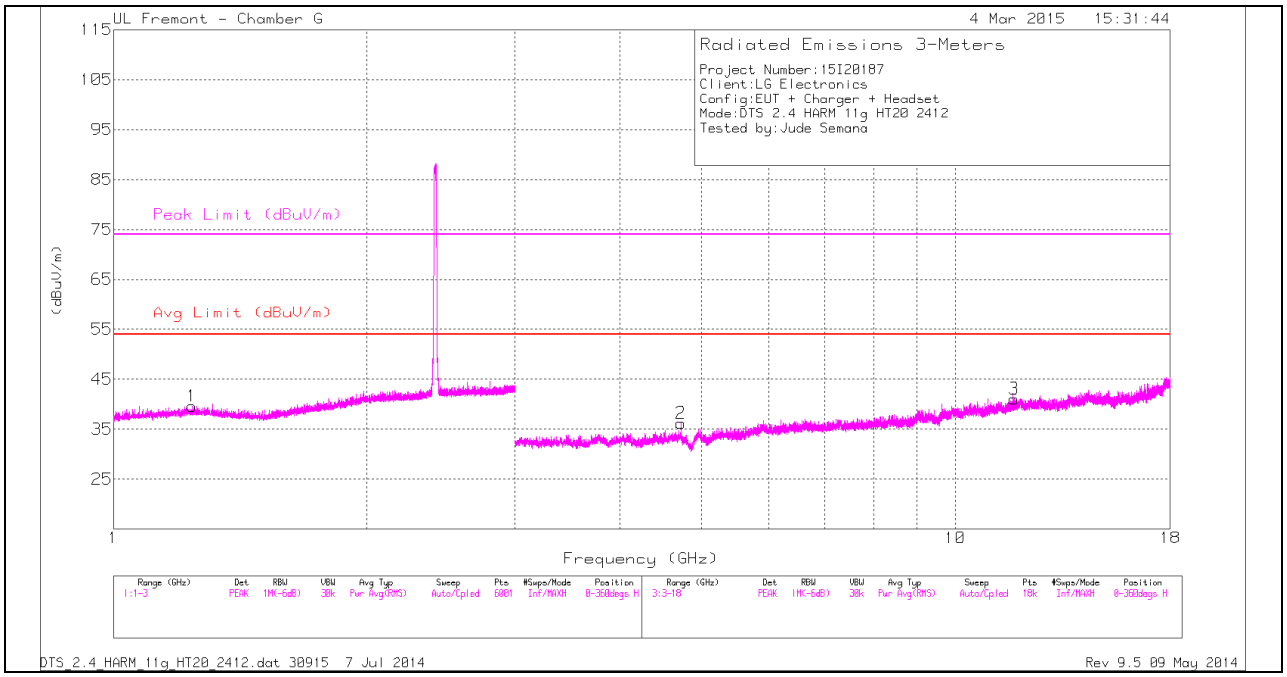


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	41.35	PK	32	-24.9	0	48.45	-	-	74	-25.55	202	285	V
2	* 2.484	44.94	PK	32	-24.9	0	52.04	-	-	74	-21.96	202	285	V
3	* 2.484	31.65	RMS	32	-24.9	0	38.75	54	-15.25	-	-	202	285	V
4	* 2.484	32.17	RMS	32	-24.9	0	39.27	54	-14.73	-	-	202	285	V

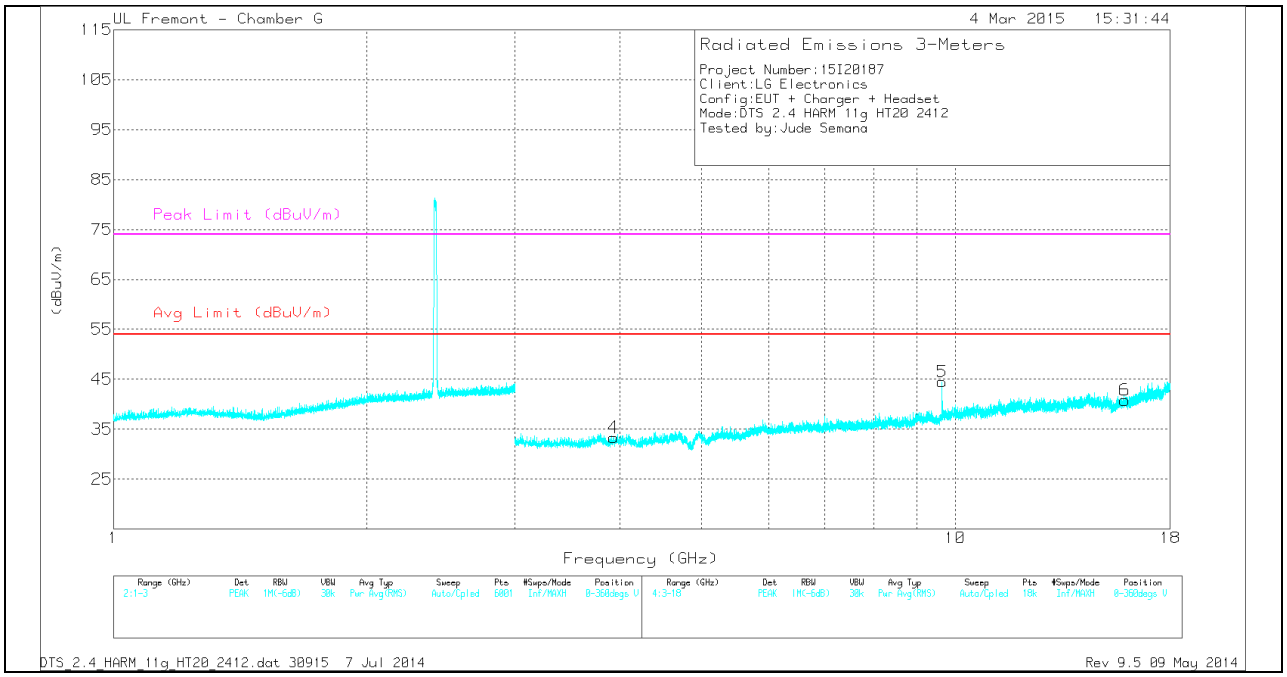
HARMONICS AND SPURIOUS EMISSIONS

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

TRACE MARKERS

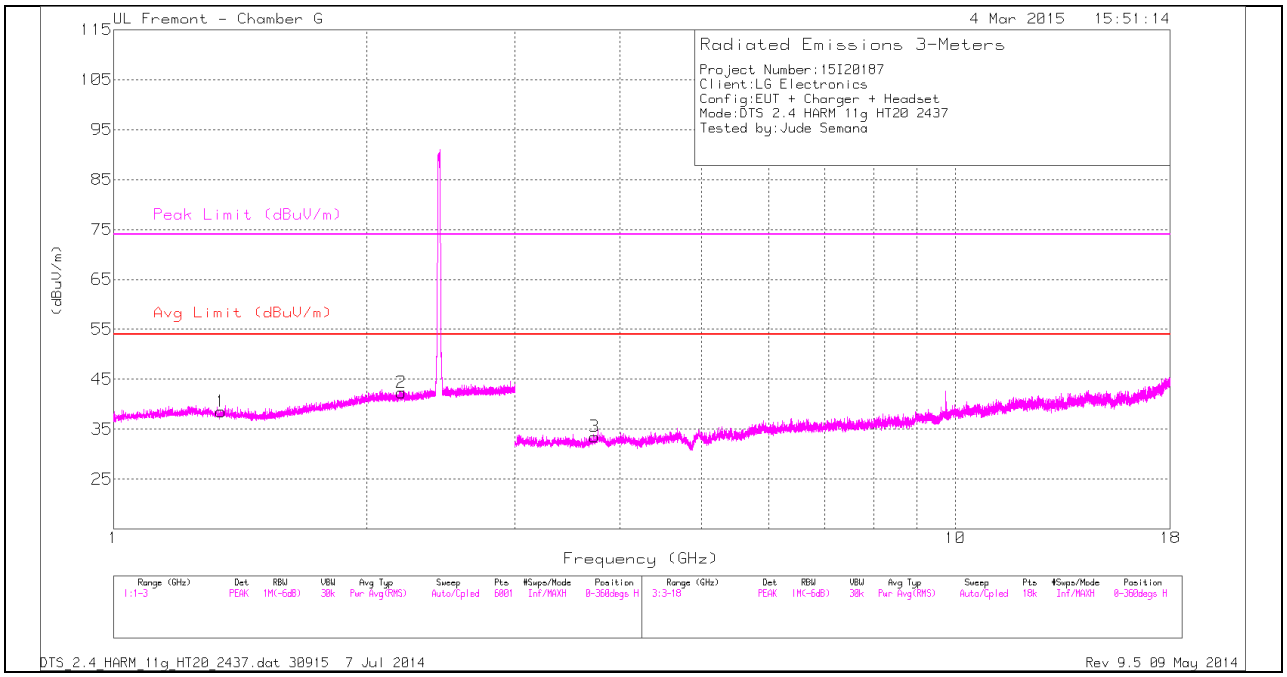
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.24	36.53	PK	29.2	-26.1	0	39.63	-	-	74	-34.37	0-360	201	H
2	* 4.723	35.31	PK	34.1	-33.2	0	36.21	-	-	74	-37.79	0-360	201	H
3	* 11.751	29.66	PK	38.7	-27.3	0	41.06	-	-	74	-32.94	0-360	201	H
4	* 3.928	33.52	PK	33.3	-33.5	0	33.32	-	-	74	-40.68	0-360	201	V
6	* 15.898	27.82	PK	40.4	-27.4	0	40.82	-	-	74	-33.18	0-360	201	V
5	9.648	35.51	PK	36.9	-27.9	0	44.51	-	-	-	-	0-360	101	V

PK - Peak detector

RADIATED EMISSIONS

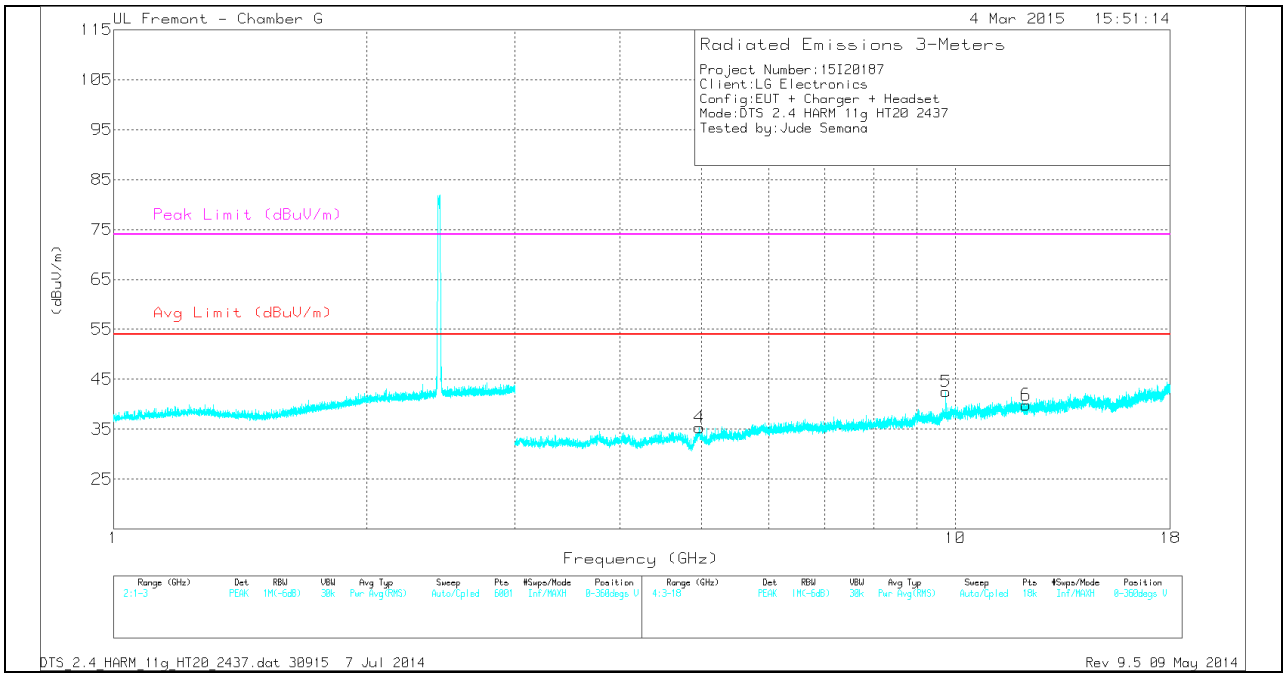
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
9.648	39.39	PK2	36.9	-27.9	0	48.39	-	-	-	-	114	132	V
9.648	31.49	MAv1	36.9	-27.9	0	40.49	-	-	-	-	114	132	V
9.648	39.61	PK2	36.9	-27.9	0	48.61	-	-	-	-	301	164	V
9.648	32.89	MAv1	36.9	-27.9	0	41.89	-	-	-	-	301	164	V

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.

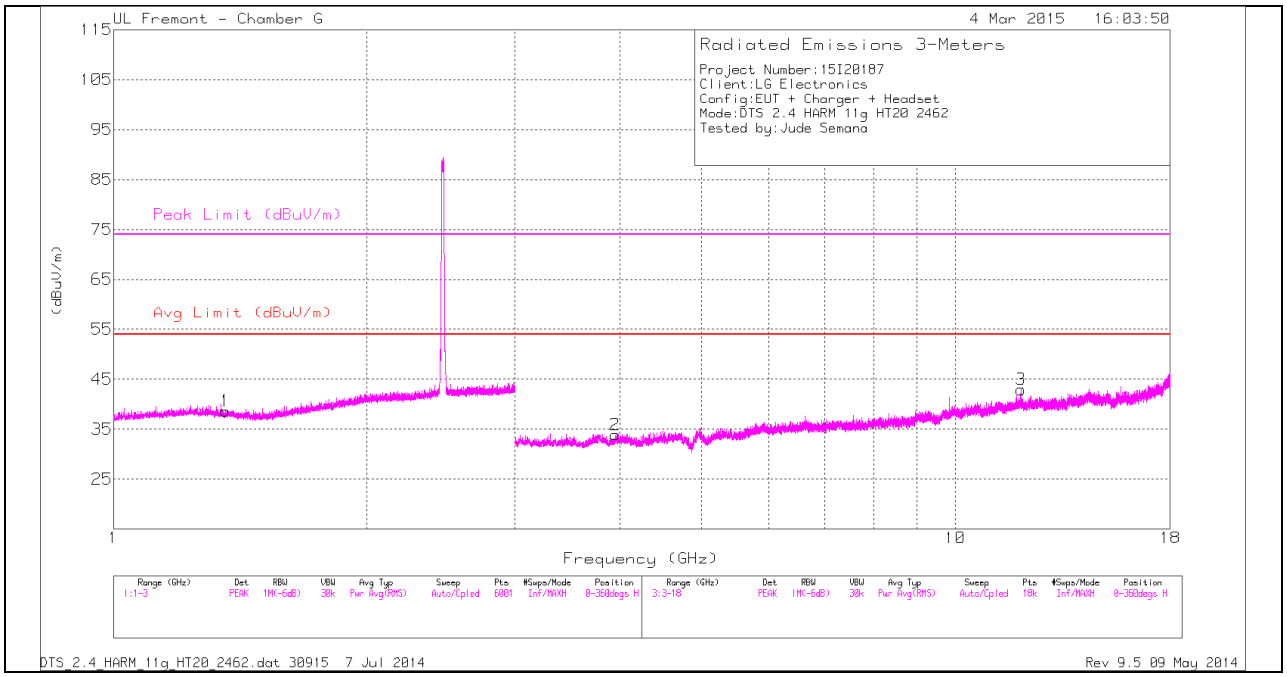
MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	* 1.343	35.76	PK	28.7	-25.9	0	38.56	-	-	74	-35.44	0-360	201	H
3	* 3.728	32.81	PK	32.9	-32.2	0	33.51	-	-	74	-40.49	0-360	201	H
4	* 4.967	34.23	PK	34.1	-33	0	35.33	-	-	74	-38.67	0-360	101	V
6	* 12.136	27.96	PK	38.8	-26.9	0	39.86	-	-	74	-34.14	0-360	101	V
2	2.199	35.98	PK	31.5	-25.1	0	42.38	-	-	-	-	0-360	201	H
5	9.748	33.35	PK	37	-27.8	0	42.55	-	-	-	-	0-360	201	V

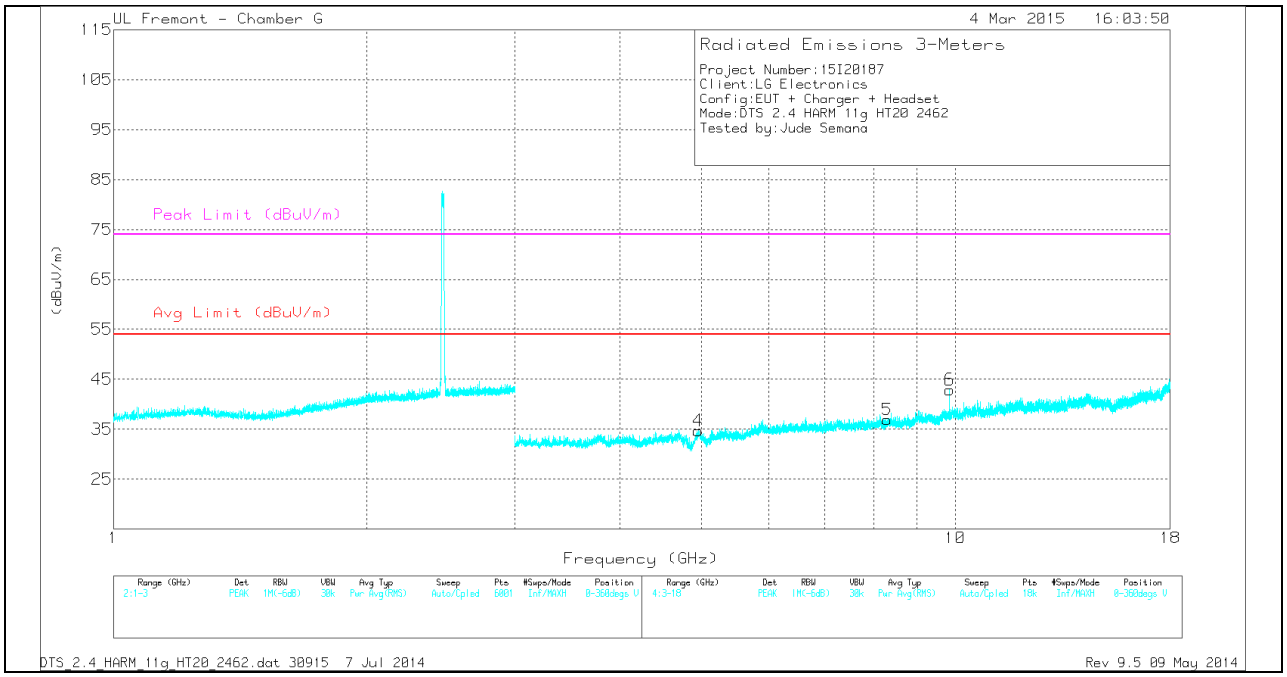
PK - Peak detector

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

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	* 1.359	35.94	PK	28.6	-25.9	0	38.64	-	-	74	-35.36	0-360	201	H
2	* 3.947	34.01	PK	33.3	-33.4	0	33.91	-	-	74	-40.09	0-360	100	H
3	* 11.969	30.28	PK	38.8	-26.1	0	42.98	-	-	74	-31.02	0-360	100	H
4	* 4.952	33.49	PK	34.1	-32.9	0	34.69	-	-	74	-39.31	0-360	101	V
5	* 8.299	31.74	PK	35.8	-30.6	0	36.94	-	-	74	-37.06	0-360	201	V
6	9.847	34.5	PK	37.2	-28.8	0	42.9	-	-	-	-	0-360	101	V

PK - Peak detector

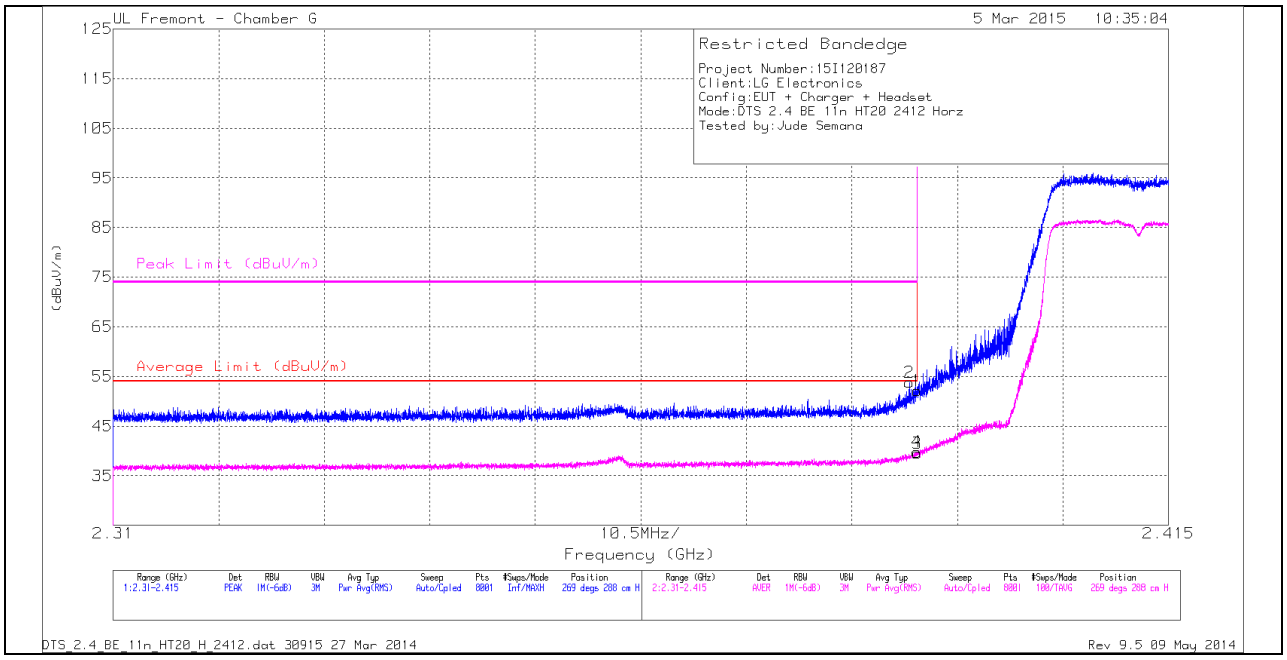
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	39.46	PK2	37.2	-28.8	0	47.86	-	-	-	-	120	140	V
9.848	30.49	MAv1	37.2	-28.8	0	38.89	-	-	-	-	120	140	V

9.2.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

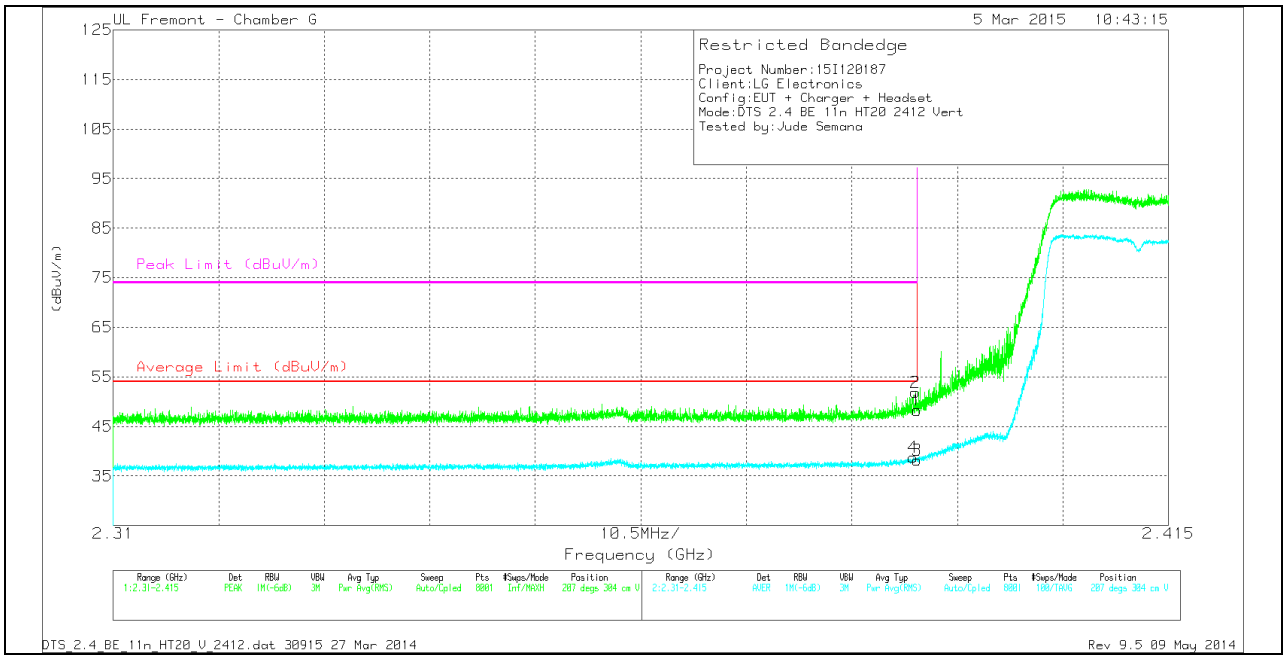
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	45.21	PK	31.8	-24.9	0	52.11	-	-	74	-21.89	269	288	H
2	* 2.389	46.87	PK	31.8	-24.9	0	53.77	-	-	74	-20.23	269	288	H
3	* 2.39	32.59	RMS	31.8	-24.9	0	39.49	54	-14.51	-	-	269	288	H
4	* 2.39	32.88	RMS	31.8	-24.9	0	39.78	54	-14.22	-	-	269	288	H

VERTICAL PEAK AND AVERAGE PLOT

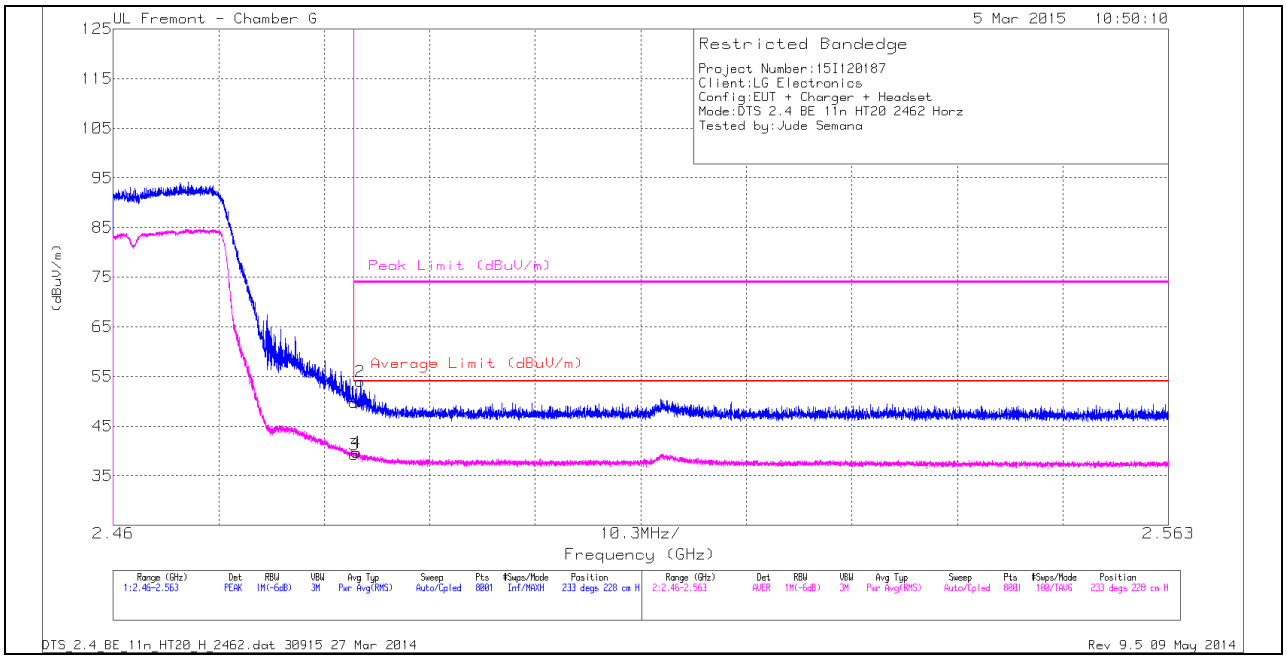


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	41.38	PK	31.8	-24.9	0	48.28	-	-	74	-25.72	207	304	V
2	* 2.39	44.97	PK	31.8	-24.9	0	51.87	-	-	74	-22.13	207	304	V
3	* 2.39	31.3	RMS	31.8	-24.9	0	38.2	54	-15.8	-	-	207	304	V
4	* 2.39	31.84	RMS	31.8	-24.9	0	38.74	54	-15.26	-	-	207	304	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

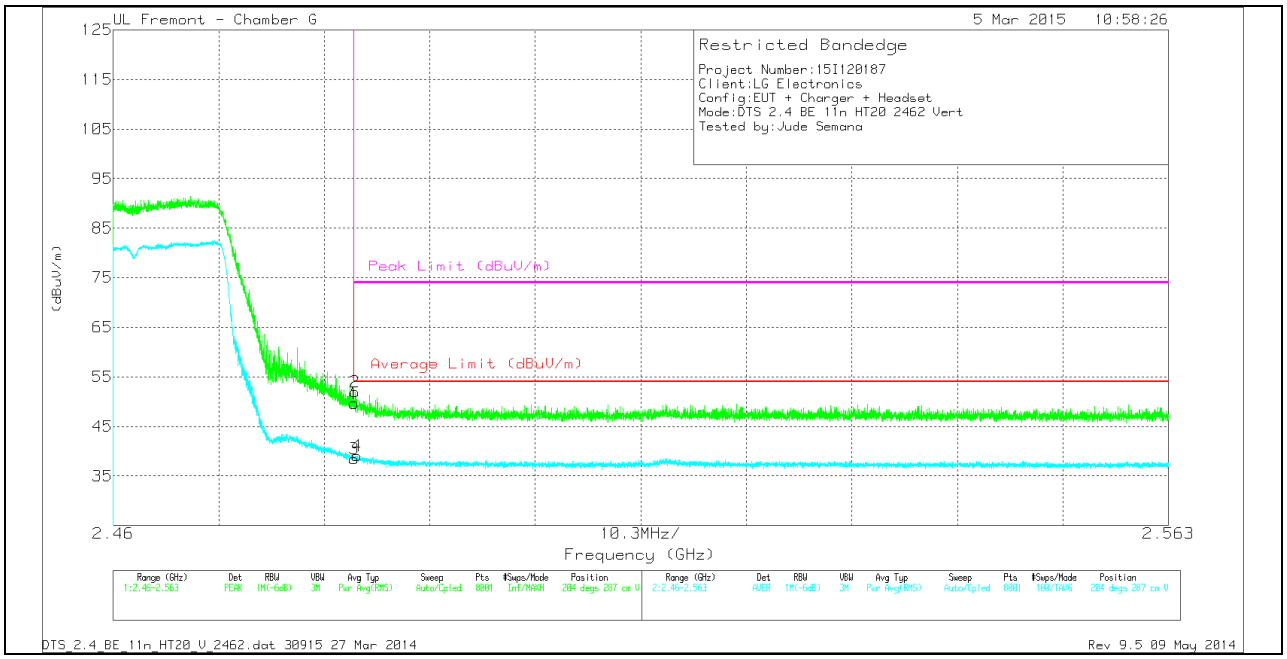
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	42.66	PK	32	-24.9	0	49.76	-	-	74	-24.24	233	228	H
2	* 2.484	46.87	PK	32	-24.9	0	53.97	-	-	74	-20.03	233	228	H
3	* 2.484	32.17	RMS	32	-24.9	0	39.27	54	-14.73	-	-	233	228	H
4	* 2.484	32.62	RMS	32	-24.9	0	39.72	54	-14.28	-	-	233	228	H

VERTICAL PEAK AND AVERAGE PLOT

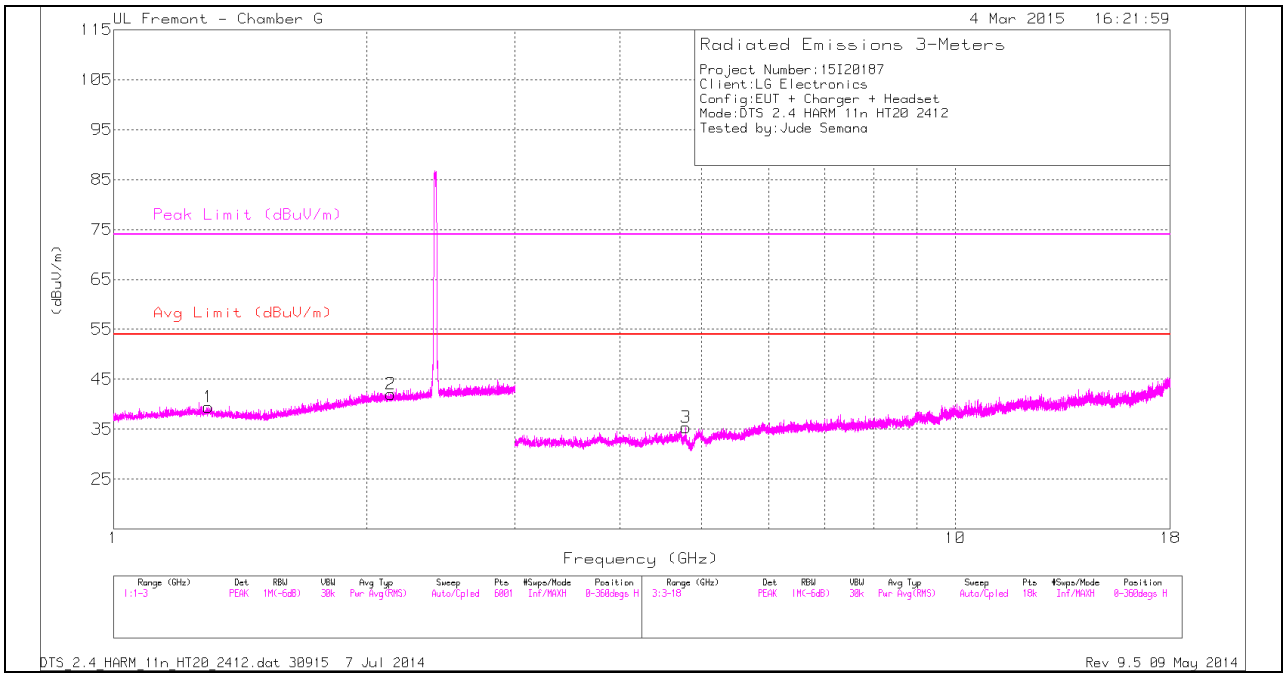


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	42.55	PK	32	-24.9	0	49.65	-	-	74	-24.35	204	287	V
2	* 2.484	44.85	PK	32	-24.9	0	51.95	-	-	74	-22.05	204	287	V
3	* 2.484	31.34	RMS	32	-24.9	0	38.44	54	-15.56	-	-	204	287	V
4	* 2.484	31.96	RMS	32	-24.9	0	39.06	54	-14.94	-	-	204	287	V

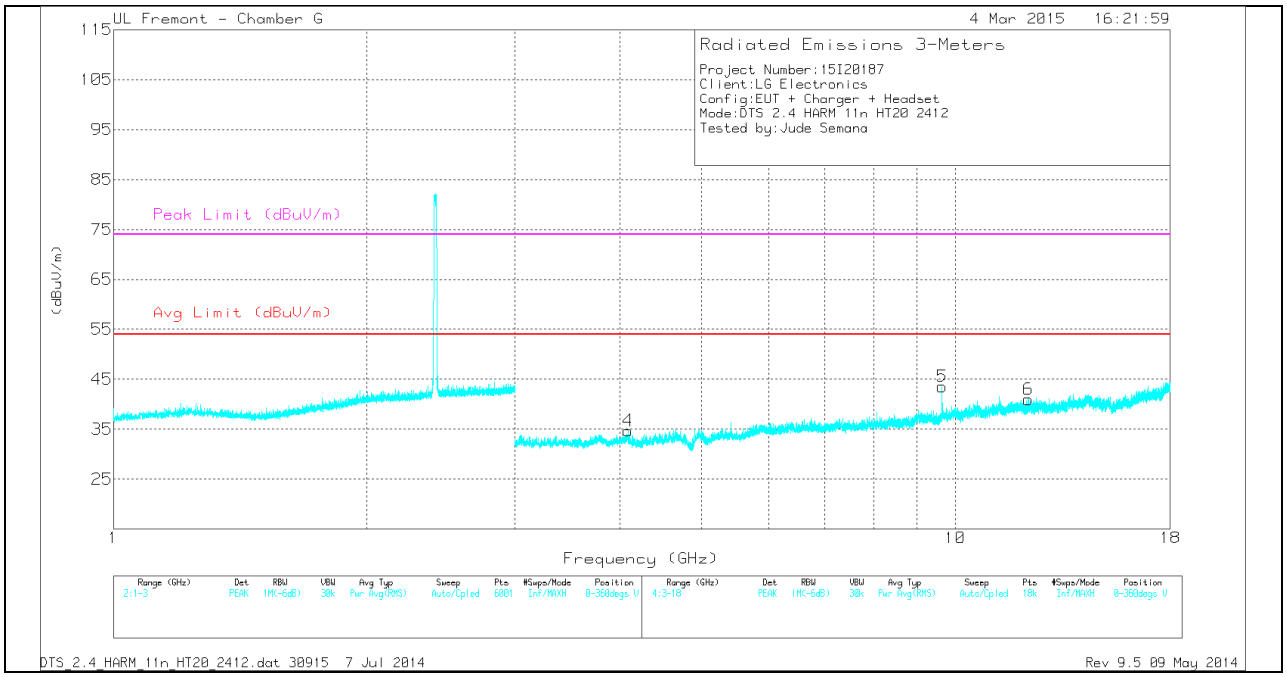
HARMONICS AND SPURIOUS EMISSIONS

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.

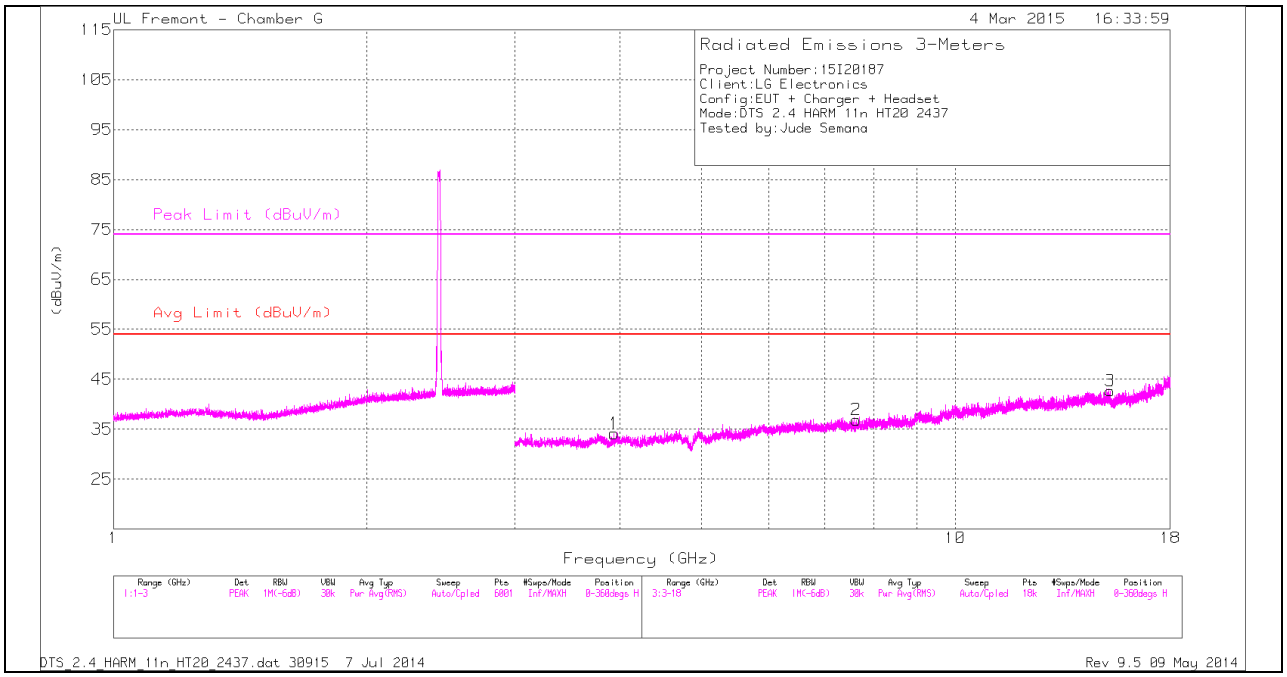
LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	* 1.297	36.43	PK	29	-26	0	39.43	-	-	74	-34.57	0-360	101	H
3	* 4.787	34.6	PK	34.1	-33.3	0	35.4	-	-	74	-38.6	0-360	100	H
4	* 4.089	34.29	PK	33.4	-33	0	34.69	-	-	74	-39.31	0-360	101	V
6	* 12.209	28.59	PK	38.8	-26.4	0	40.99	-	-	74	-33.01	0-360	201	V
2	2.136	35.76	PK	31.4	-25.1	0	42.06	-	-	-	-	0-360	101	H
5	9.648	34.56	PK	36.9	-27.9	0	43.56	-	-	-	-	0-360	101	V

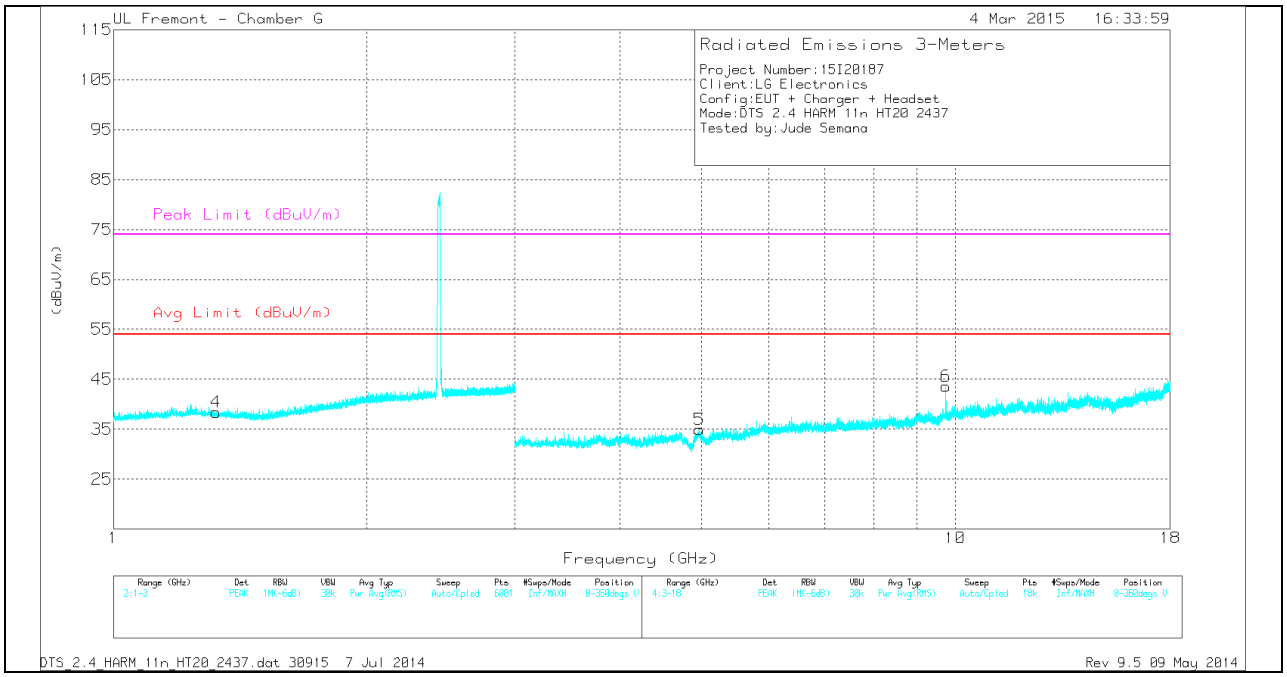
PK - Peak detector

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

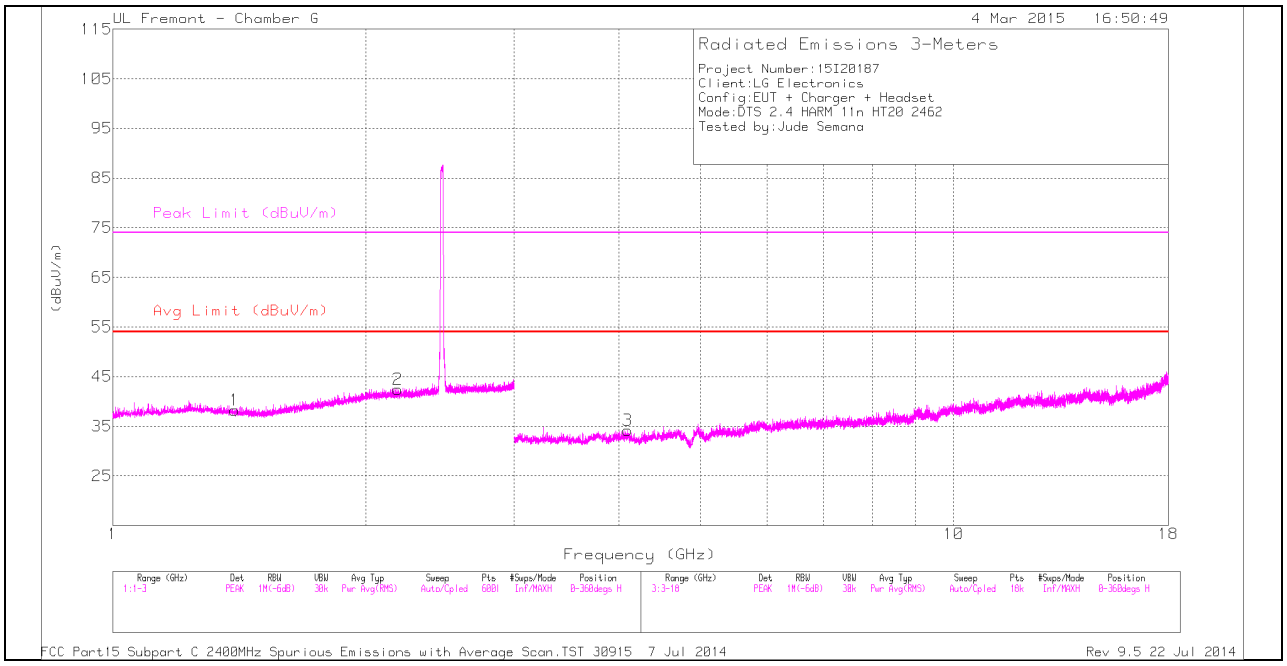
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 1.325	35.59	PK	28.8	-26	0	38.39	-	-	74	-35.61	0-360	101	V
1	* 3.934	34.23	PK	33.3	-33.4	0	34.13	-	-	74	-39.87	0-360	101	H
2	* 7.632	32.11	PK	35.7	-30.9	0	36.91	-	-	74	-37.09	0-360	201	H
5	* 4.967	33.86	PK	34.1	-33	0	34.96	-	-	74	-39.04	0-360	201	V
6	9.748	34.42	PK	37	-27.8	0	43.62	-	-	-	-	0-360	101	V
3	15.274	30.39	PK	39.8	-27.5	0	42.69	-	-	-	-	0-360	201	H

PK - Peak detector

RADIATED EMISSIONS

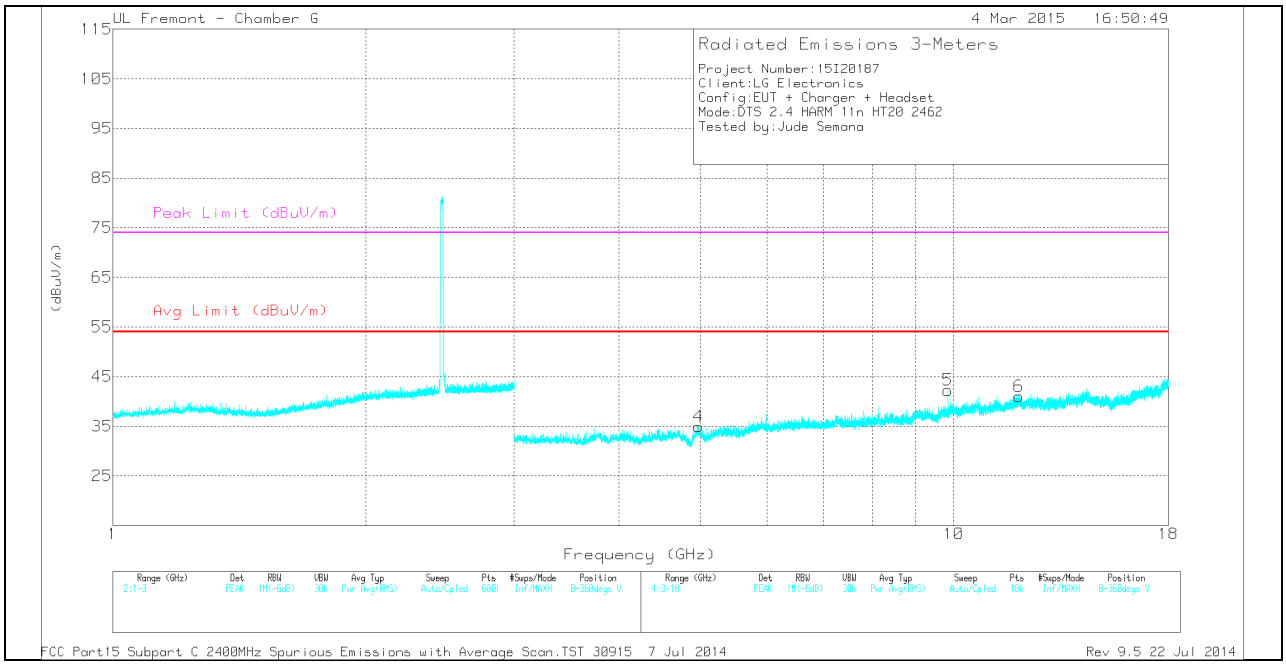
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
9.748	39.81	PK2	37	-27.8	0	49.01	-	-	-	-	114	143	V
9.748	30.48	MAv1	37	-27.8	0	39.68	-	-	-	-	114	143	V

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

TRACE MARKERS

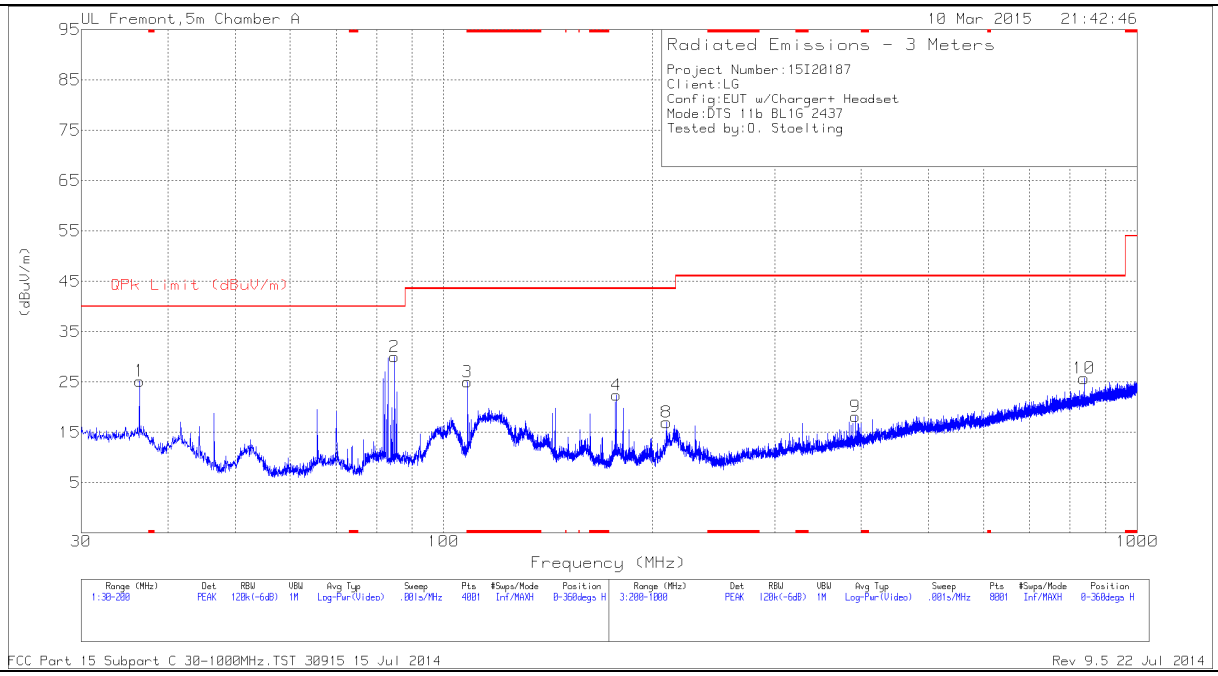
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.396	35.59	PK	28.4	-25.8	0	38.19	-	-	74	-35.81	0-360	201	H
3	* 4.097	33.92	PK	33.4	-33.2	0	34.12	-	-	74	-39.88	0-360	101	H
4	* 4.972	33.88	PK	34.1	-33	0	34.98	-	-	74	-39.02	0-360	201	V
6	* 11.959	28.28	PK	38.8	-26	0	41.08	-	-	74	-32.92	0-360	101	V
2	2.181	36.15	PK	31.4	-25.1	0	42.45	-	-	-	-	0-360	201	H
5	9.847	33.84	PK	37.2	-28.8	0	42.24	-	-	-	-	0-360	101	V

PK - Peak detector

9.3. TRANSMITTER BELOW 1 GHz

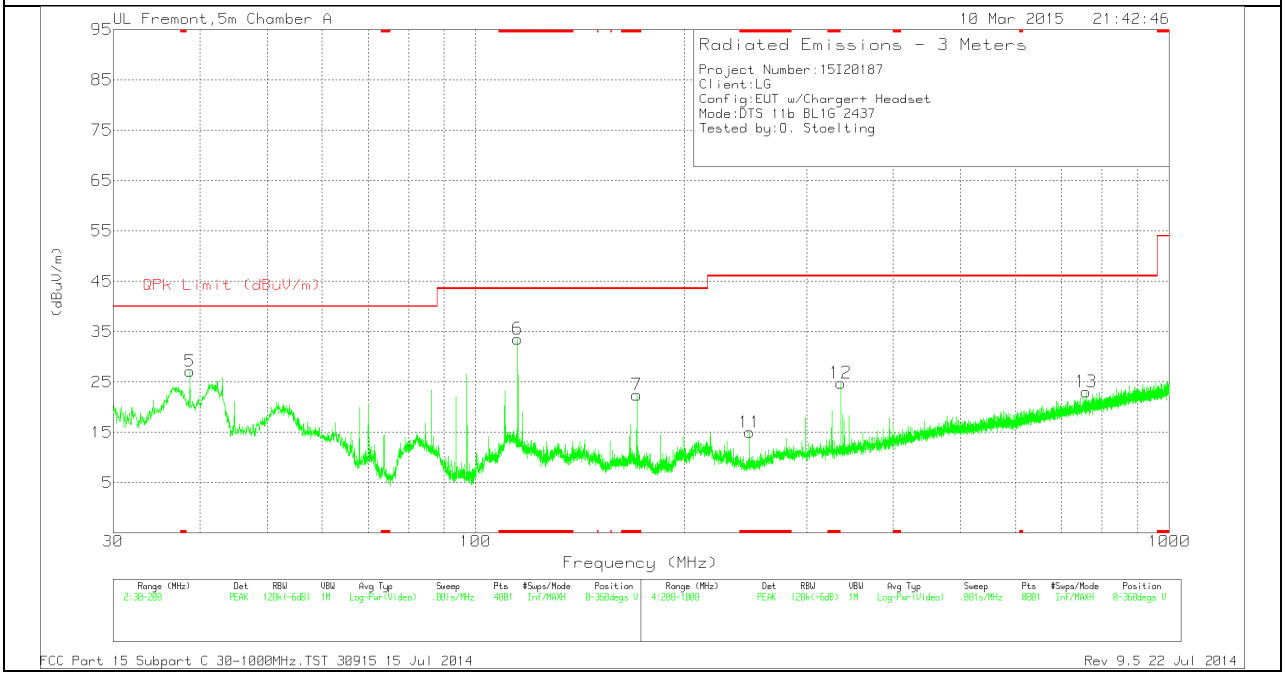
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



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

VERTICAL PLOT



Below 1GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T130 (dB/m)	Amp/Cbl (dB/m)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 108.2425	43.32	PK	12.2	-30.5	25.02	43.52	-18.5	0-360	200	H
6	* 114.8725	50.77	PK	13.3	-30.5	33.57	43.52	-9.95	0-360	101	V
7	* 170.7175	40.86	PK	11.7	-30.1	22.46	43.52	-21.06	0-360	101	V
11	* 248.2	33.31	PK	11.4	-29.7	15.01	46.02	-31.01	0-360	200	V
1	36.4175	39.69	PK	16.7	-31.2	25.19	40	-14.81	0-360	200	H
5	38.7125	43.16	PK	15.1	-31.1	27.16	40	-12.84	0-360	101	V
2	84.9525	53.43	PK	7.3	-30.7	30.03	40	-9.97	0-360	200	H
4	177.3475	41	PK	11.5	-30.1	22.4	43.52	-21.12	0-360	200	H
8	209.5	36.49	PK	10.4	-29.9	16.99	43.52	-26.53	0-360	101	H
12	335.9	40.11	PK	13.9	-29.2	24.81	46.02	-21.21	0-360	200	V
9	392	32.25	PK	15	-29.1	18.15	46.02	-27.87	0-360	101	H
13	758.6	30.36	PK	20.8	-28.1	23.06	46.02	-22.96	0-360	300	V
10	838.1	31.93	PK	21.6	-27.8	25.73	46.02	-20.29	0-360	101	H