FCC CFR47 PART 15 SUBPART C

C2PC CERTIFICATION TEST REPORT

FOR

CDMA/LTE PHONE WITH BT & DTS WLAN b/g/n

MODEL NUMBER: LGV62VL, L62VL, LG-L62VL

FCC ID: ZNFL62VL

REPORT NUMBER: 16I22653-E4V1

ISSUE DATE: 1/29/2016

Prepared for
LG ELECTRONICS MOBILECOMM U.S.A., INC
1000 SYLVAN AVENUE
ENGLEWOOD CLIFFS,
NEW JERSEY, 07632, U.S.A

Prepared by
UL VERIFICATION SERVICES INC.
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888

NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	1/29/2016	Initial Revision	D. CORONIA

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS 4

2. TEST METHODOLOGY 5

3. FACILITIES AND ACCREDITATION 5

4. CALIBRATION AND UNCERTAINTY 5

4.1. MEASURING INSTRUMENT CALIBRATION 5

4.2. SAMPLE CALCULATION 5

4.3. MEASUREMENT UNCERTAINTY 6

5. EQUIPMENT UNDER TEST 7

5.1. DESCRIPTION OF EUT 7

5.1. MAXIMUM OUTPUT POWER 7

5.2. DESCRIPTION OF AVAILABLE ANTENNAS 7

5.3. WORST-CASE CONFIGURATION AND MODE 7

5.4. DESCRIPTION OF TEST SETUP 8

6. TEST AND MEASUREMENT EQUIPMENT 10

7. MEASUREMENT METHODS 11

8. SUMMARY TABLE 12

9. ANTENNA PORT TEST RESULTS 13

9.1. ON TIME, DUTY CYCLE 13

10. RADIATED TEST RESULTS 14

10.1. TRANSMITTER ABOVE 1 GHz 15

10.1.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND 15

10.1.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND 25

10.1.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND 35

10.2. WORST-CASE BELOW 1 GHz 45

11. SETUP PHOTOS 47

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: CDMA/LTE PHONE WITH BT & DTS WLAN b/g/n

MODEL: LGL62VL, L62VL, LG-L62VL

SERIAL NUMBER: 601KPQJ000748

DATE TESTED: JANUARY 12-25, 2016

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.

Approved & Released
For UL Verification Services Inc. By:

DAN CORONIA
WiSE PROJECT LEAD
CONSUMER TECHNOLOGY DIVISION
UL VERIFICATION SERVICES INC

Tested By:

GLENN ESCANO
WiSE LAB ENGINEER
CONSUMER TECHNOLOGY DIVISION
UL VERIFICATION SERVICES INC

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013.

3. FACILITIES AND ACCREDITATION

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

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

The above test sites and facilities are covered under FCC Test Firm Registration # 208313.

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

Chambers A through H are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-8, respectively.

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

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Radiated Disturbance, 9KHz to 30 MHz	2.14 dB
Radiated Disturbance, 30 to 1000 MHz	4.98 dB
Radiated Disturbance,1000 to 6000 MHz	3.86 dB
Radiated Disturbance,6000 to 18000 MHz	4.23 dB
Radiated Disturbance,18000 to 26000 MHz	5.30 dB
Radiated Disturbance,26000 to 40000 MHz	5.23 dB

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

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a CDMA/LTE Phone with BT & DTS WLAN b/g/n.

5.1. MAXIMUM OUTPUT POWER

See original report for detail.

5.2. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of 0.24dBi.

5.3. WORST-CASE CONFIGURATION AND MODE

Radiated emission and power line conducted emission were performed with the EUT set to transmit on the channel with higher 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 HT20 Mode: MCS0

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

5.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	LG	DC1507	EAD62377906	N/A

I/O CABLES

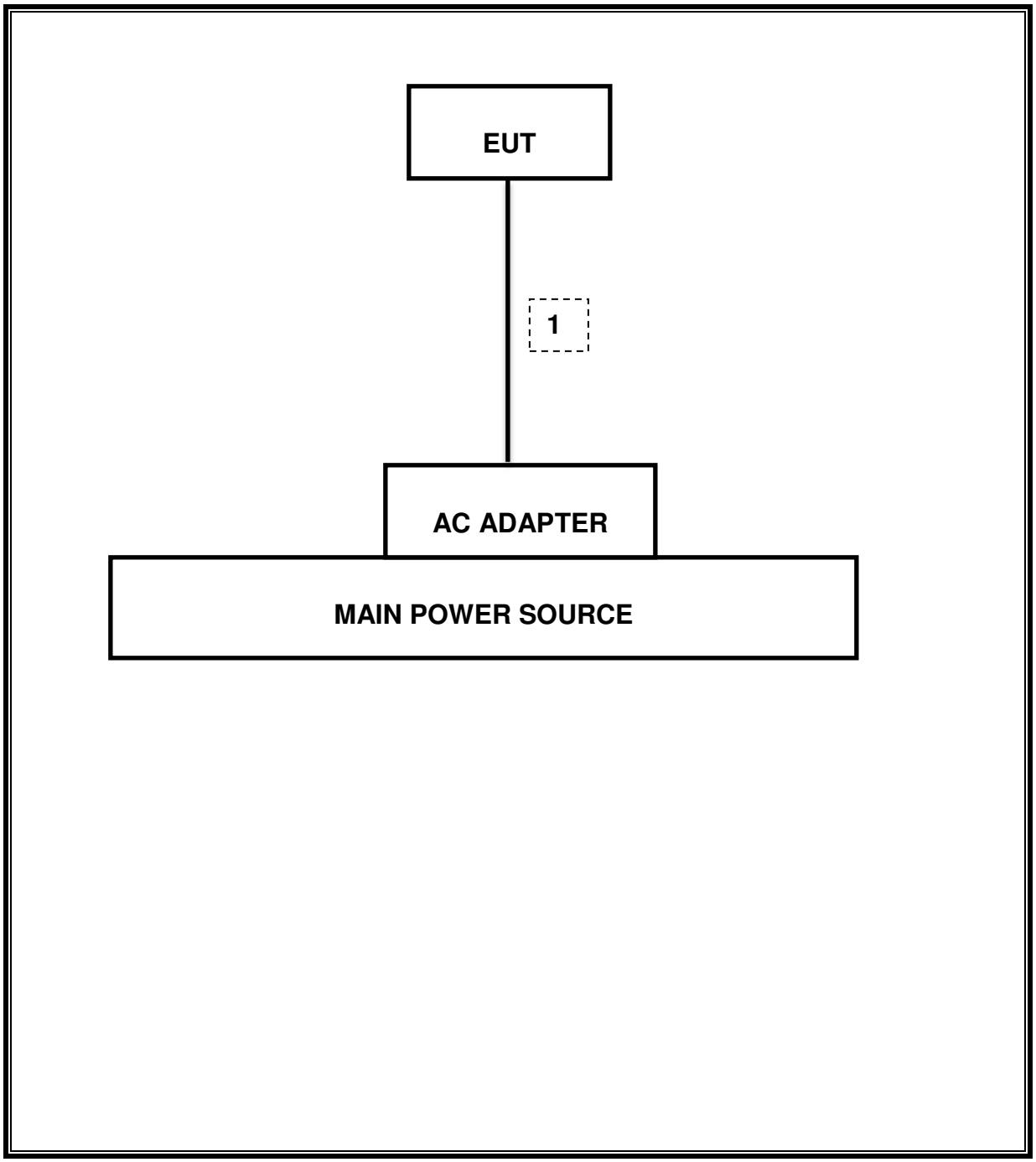
I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	Mini-USB	Shielded	1.2m	N/A

TEST SETUP

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

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

SETUP DIAGRAM FOR TESTS



This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

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**	**T Number**	**Cal Due**
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB1	130	09/01/16
Antenna, Horn, 18GHz	ETS Lindgren	3117	345	03/03/16
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	447	05/12/16
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	88	04/07/16
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	404	06/29/16
Amplifier, 10KHz to 1 GHz	Keysight	8447D	15	08/14/16
Spectrum Analyzer, PXA, 3 Hz to 44 GHz	Keysight	N9030A	907	01/06/17
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	417	05/04/16
High Pass Filter 6GHz	Micro-Tronics	HPS17542	893	04/25/16
High Pass Filter 3GHz	Micro-Tronics	HPS17543	898	04/25/16

Test Software List			
Description	**Manufacturer**	**Model**	**Version**
Radiated Software	UL	UL EMC	Ver 9.5, June 24, 2015

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

7. MEASUREMENT METHODS

On Time and Duty Cycle: KDB 558074 D01 v03r04, Section 6.0.

Out-of-band emissions in non-restricted bands: KDB 558074 D01 v03r04, Section 11.0.

Out-of-band emissions in restricted bands: KDB 558074 D01 v03r04, Section 12.1.

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.

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

8. SUMMARY TABLE

C2PC Reason: Please see LGL62VL FCC Class II change description for details.

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result
15.247 (a)(2)	RSS-247 5.2.1	Occupied Band width (6dB)	>500KHz	Conducted	See Original
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-20dBc		See Original
15.247	RSS-247 5.4.4	TX conducted output power	<30dBm		See Original
15.247	RSS-247 5.2.2	PSD	<8dBm		See Original
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10	Radiated	See Original
15.205, 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	< 54dBuV/m		Pass

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME, DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

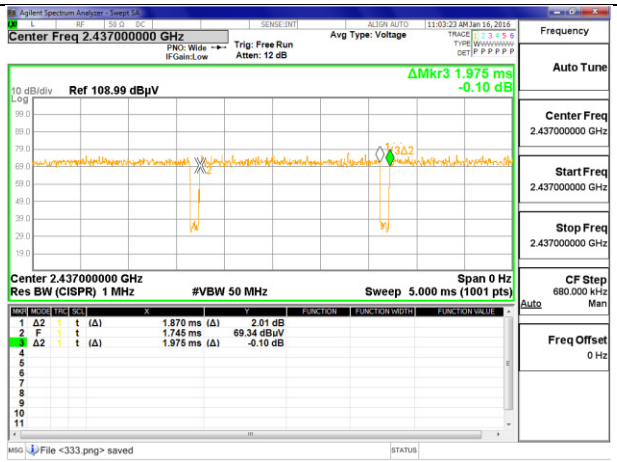
	B (msec)	(msec)	x (linear)	Cycle (%)	Correction Factor (dB)	Minimum VBW (kHz)
802.11b	12.22	12.32	0.992	99.2%	0.00	0.010
802.11g	2.02	2.13	0.948	94.8%	0.23	0.495
802.11n HT20	1.87	1.98	0.947	94.7%	0.24	0.535

DUTY CYCLE PLOTS

802.11b

802.11g

802.11n HT20



This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

10. RADIATED TEST RESULTS

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 for below 1GHz and 150cm for above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

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

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and add duty cycle factor for average measurements. Duty cycle factor = 10 log (1/x).

The spectrum from 30 MHz to 26 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.

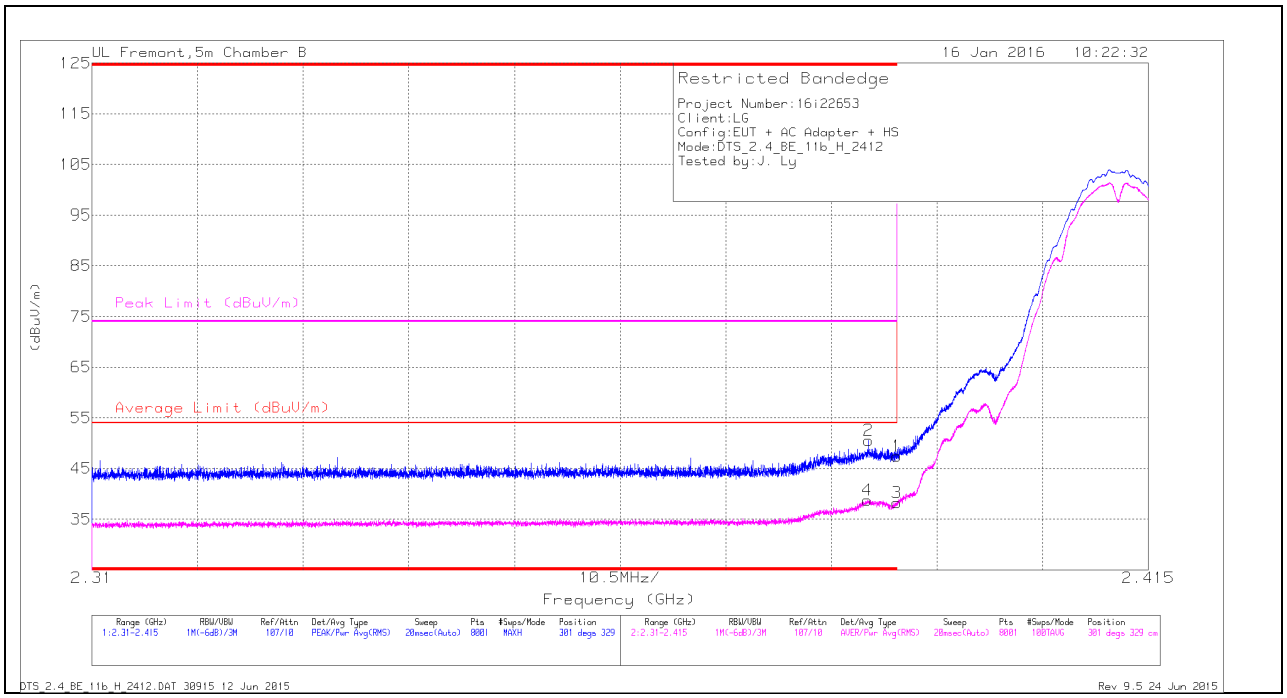
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

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)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	37.32	Pk	32	-21.9	0	47.42	-	-	74	-26.58	301	329	H
2	* 2.387	40.49	Pk	32	-21.9	0	50.59	-	-	74	-23.41	301	329	H
3	* 2.39	28.12	RMS	32	-21.9	0	38.22	54	-15.78	-	-	301	329	H
4	* 2.387	28.67	RMS	32	-21.9	0	38.77	54	-15.23	-	-	301	329	H

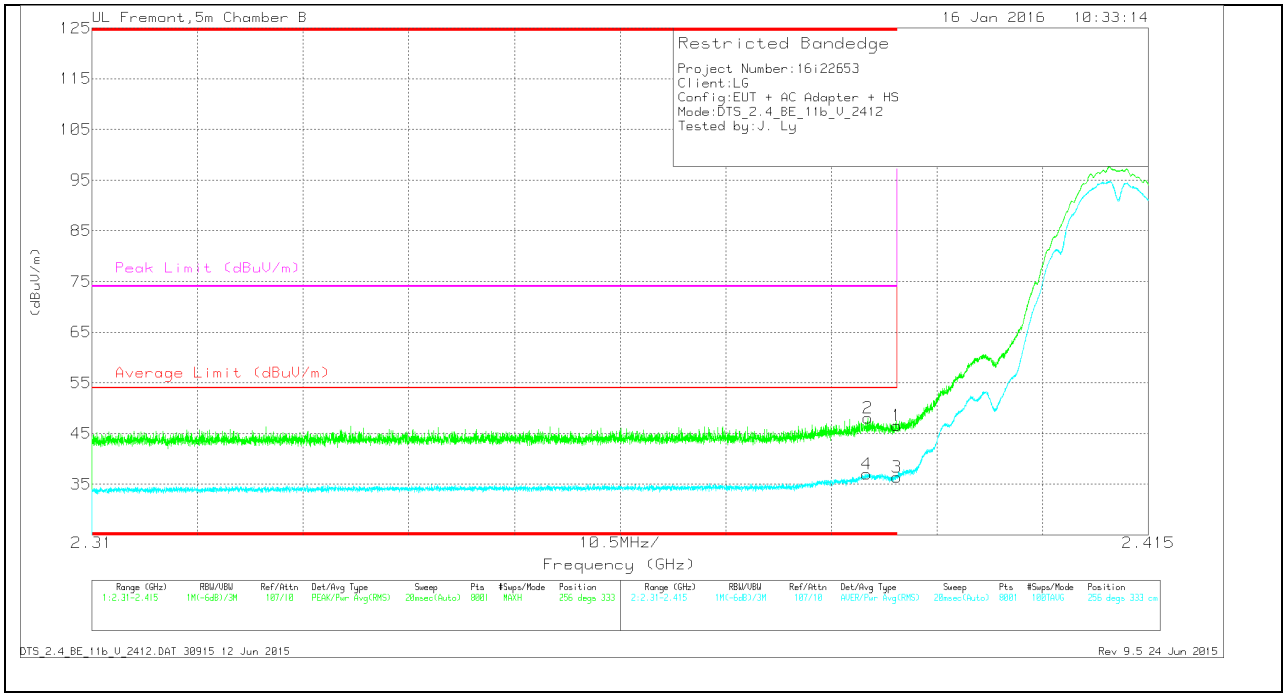
* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

Pk - Peak detector

RMS - RMS detection

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL 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)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	36.5	Pk	32	-21.9	0	46.6	-	-	74	-27.4	256	333	V
2	* 2.387	37.91	Pk	32	-21.9	0	48.01	-	-	74	-25.99	256	333	V
3	* 2.39	26.3	RMS	32	-21.9	0	36.4	54	-17.6	-	-	256	333	V
4	* 2.387	26.91	RMS	32	-21.9	0	37.01	54	-16.99	-	-	256	333	V

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

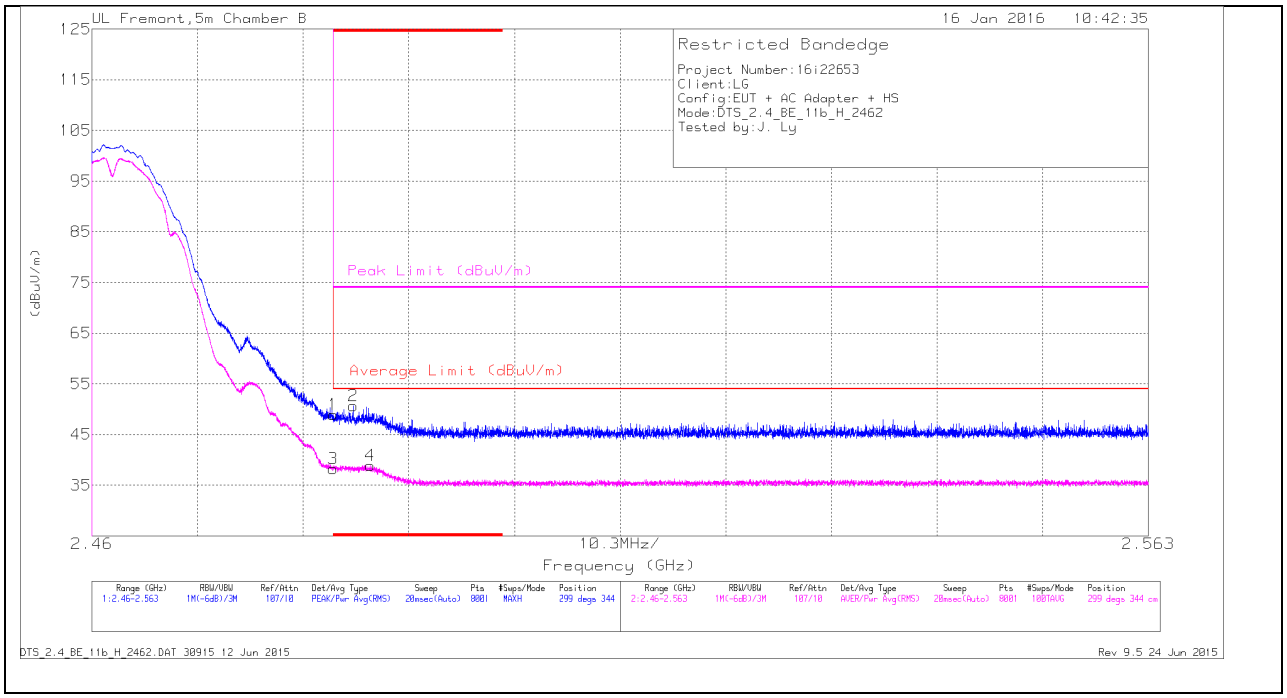
Pk - Peak detector

RMS - RMS detection

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL 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)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	38.19	Pk	32.5	-21.8	0	48.89	-	-	74	-25.11	299	344	H
2	* 2.485	40.09	Pk	32.5	-21.9	0	50.69	-	-	74	-23.31	299	344	H
3	* 2.484	27.51	RMS	32.5	-21.8	0	38.21	54	-15.79	-	-	299	344	H
4	* 2.487	28.31	RMS	32.5	-21.9	0	38.91	54	-15.09	-	-	299	344	H

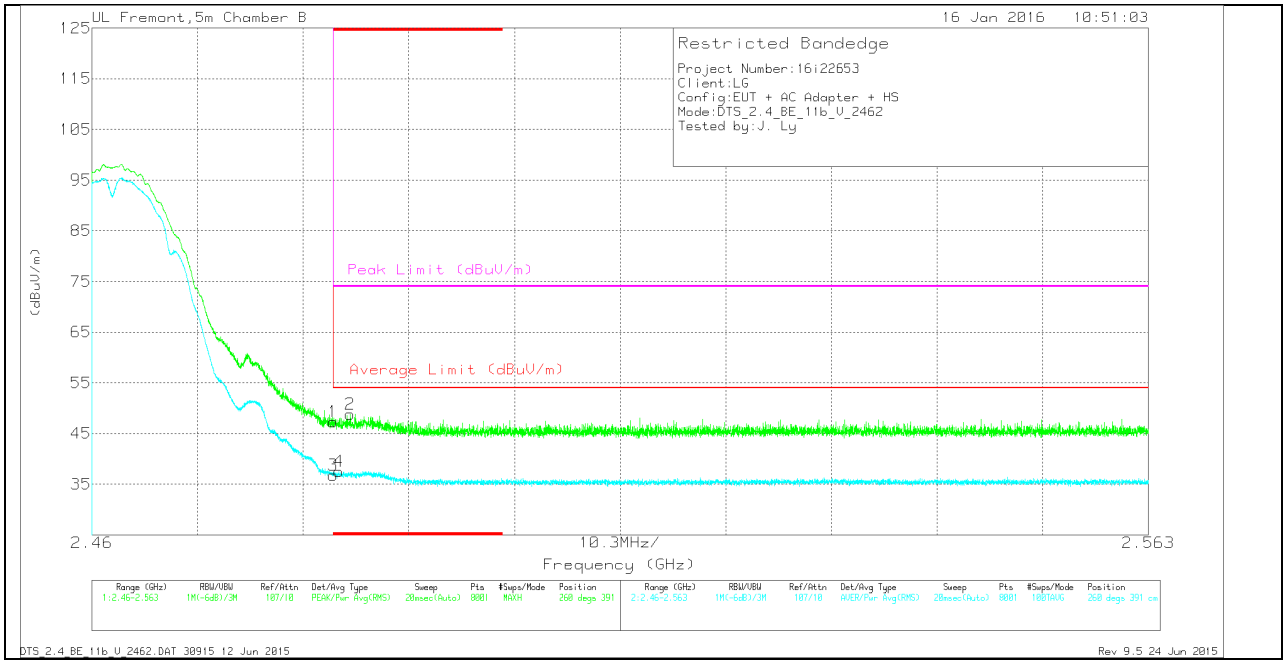
* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

Pk - Peak detector

RMS - RMS detection

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL 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)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	36.6	Pk	32.5	-21.8	0	47.3	-	-	74	-26.7	260	391	V
2	* 2.485	38.23	Pk	32.5	-21.9	0	48.83	-	-	74	-25.17	260	391	V
3	* 2.484	26.07	RMS	32.5	-21.8	0	36.77	54	-17.23	-	-	260	391	V
4	* 2.484	26.82	RMS	32.5	-21.8	0	37.52	54	-16.48	-	-	260	391	V

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

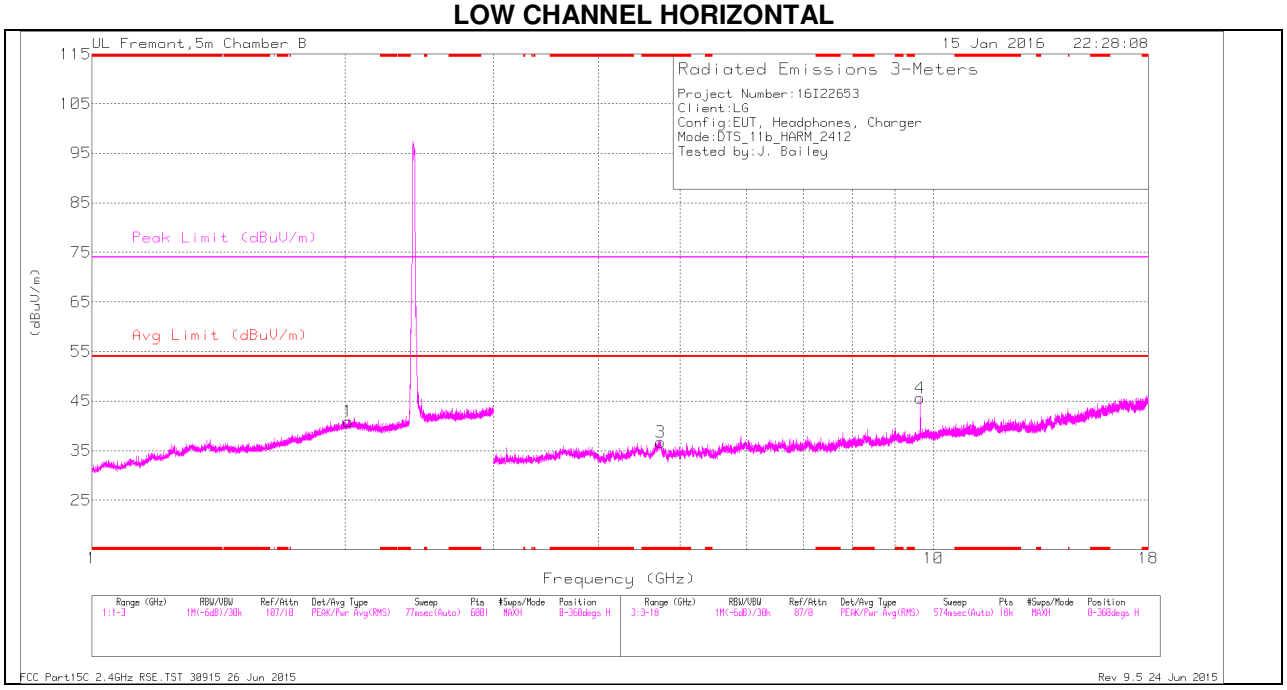
Pk - Peak detector

RMS - RMS detection

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

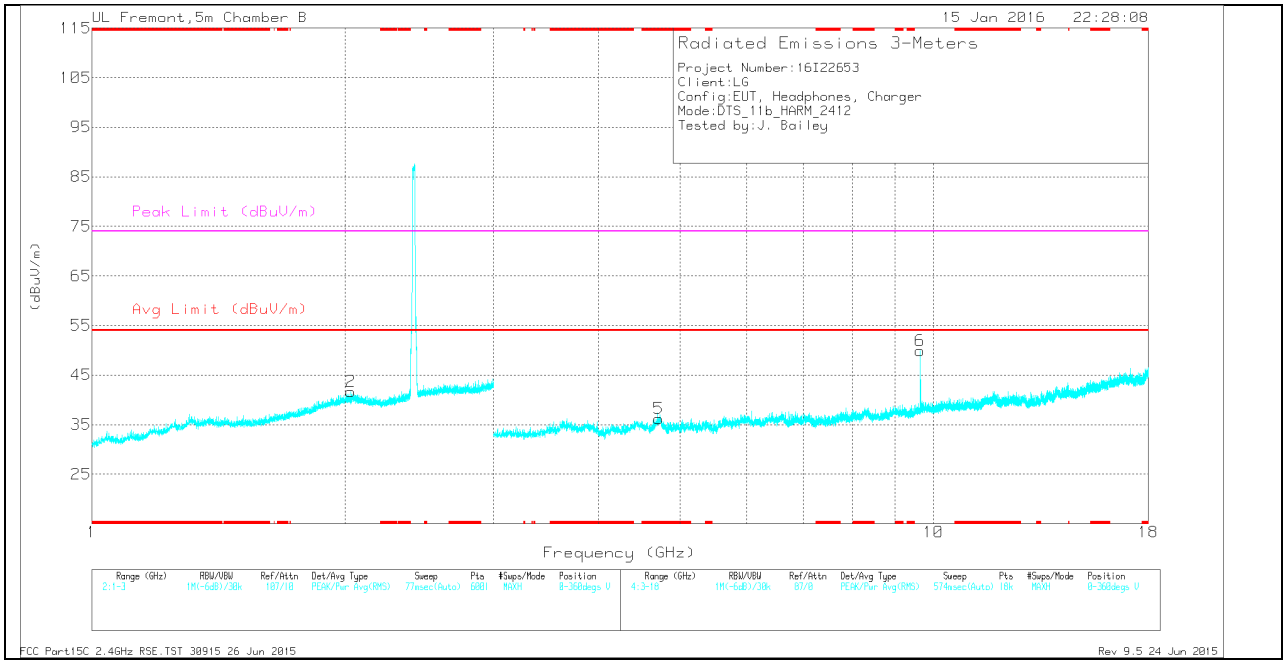
HARMONICS AND SPURIOUS EMISSIONS

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.

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

LOW CHANNEL DATA

Trace Markers

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	* 4.739	33.07	Pk	34.3	-30.7	36.67	-	-	74	-37.33	0-360	101	H
5	* 4.714	33.11	Pk	34.2	-31.1	36.21	-	-	74	-37.79	0-360	101	V
1	2.016	30.15	Pk	32.3	-21.6	40.85	-	-	-	-	0-360	200	H
2	2.031	31.08	Pk	32.2	-21.6	41.68	-	-	-	-	0-360	200	V
4	9.648	35.37	Pk	36.7	-26.5	45.57	-	-	-	-	0-360	101	H
6	9.648	39.66	Pk	36.7	-26.5	49.86	-	-	-	-	0-360	101	V

* - indicates frequency in CFR47 Pt 15 / IC8.10 RSS-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
2.018	37.7	PK2	32.3	-21.6	48.4	-	-	74	-25.6	1	200	H
2.015	25.7	MAv1	32.3	-21.6	36.4	54	-17.6	-	-	1	200	H
2.032	37.17	PK2	32.2	-21.6	47.77	-	-	74	-26.23	1	200	V
2.031	25.87	MAv1	32.2	-21.6	36.47	54	-17.53	-	-	1	200	V
* 4.739	42.01	PK2	34.3	-30.7	45.61	-	-	74	-28.39	198	190	H
* 4.741	30.07	MAv1	34.3	-30.7	33.67	54	-20.33	-	-	198	190	H
9.648	41.15	PK2	36.7	-26.5	51.35	-	-	74	-22.65	5	377	H
* 4.714	41.64	PK2	34.2	-31.2	44.64	-	-	74	-29.36	210	298	V
* 4.714	30.15	MAv1	34.2	-31.2	33.15	54	-20.85	-	-	210	298	V
9.648	43.18	PK2	36.7	-26.5	53.38	-	-	74	-20.62	186	101	V

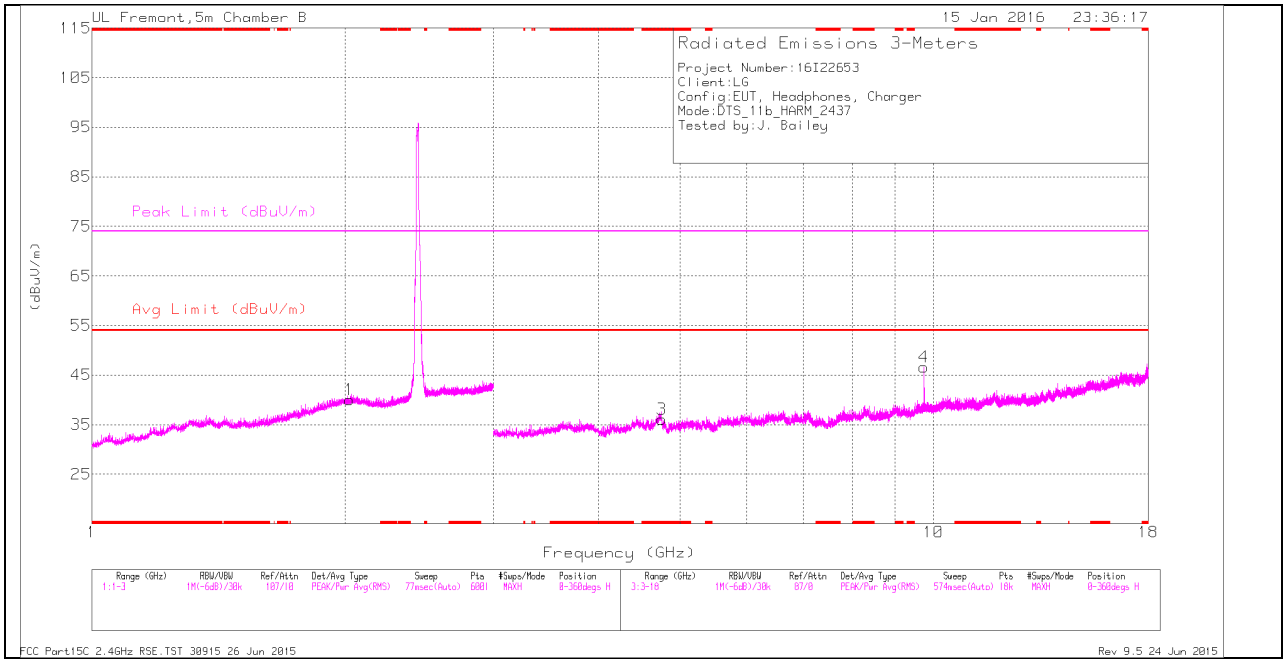
* - indicates frequency in CFR47 Pt 15 / IC8.10 RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

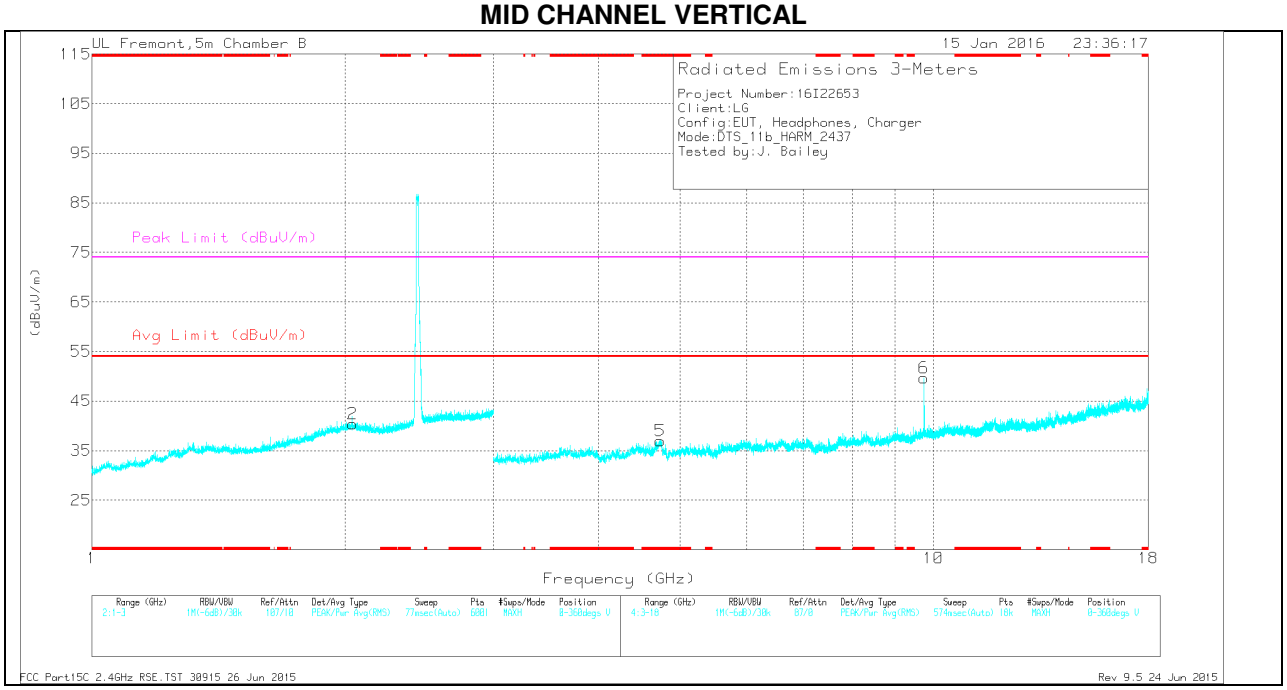
UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

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.

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

MID CHANNEL DATA

Trace Markers

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	* 4.755	32.47	Pk	34.3	-30.7	36.07	-	-	74	-37.93	0-360	101	H
5	* 4.735	33.36	Pk	34.3	-30.7	36.96	-	-	74	-37.04	0-360	199	V
1	2.022	29.47	Pk	32.2	-21.6	40.07	-	-	-	-	0-360	101	H
2	2.041	29.85	Pk	32.1	-21.6	40.35	-	-	-	-	0-360	101	V
4	9.748	36.07	Pk	36.9	-26.3	46.67	-	-	-	-	0-360	101	H
6	9.748	39.09	Pk	36.9	-26.3	49.69	-	-	-	-	0-360	101	V

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted 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
* 4.753	41.81	PK2	34.3	-30.7	45.41	-	-	74	-28.59	157	265	H
* 4.754	30.02	MAv1	34.3	-30.7	33.62	54	-20.38	-	-	157	265	H
* 4.735	41.78	PK2	34.3	-30.7	45.38	-	-	74	-28.62	349	323	V
* 4.735	30.18	MAv1	34.3	-30.7	33.78	54	-20.22	-	-	349	323	V
2.021	37.93	PK2	32.2	-21.6	48.53	-	-	74	-25.47	359	101	H
2.023	25.87	MAv1	32.2	-21.7	36.37	54	-17.63	-	-	359	101	H
2.043	37.46	PK2	32.1	-21.6	47.96	-	-	74	-26.04	359	101	V
2.043	26.06	MAv1	32.1	-21.6	36.56	54	-17.44	-	-	359	101	V
9.748	39.5	PK2	36.9	-26.3	50.1	-	-	74	-23.90	60	118	H
9.748	40.9	PK2	36.9	-26.3	51.5	-	-	74	-22.50	29	119	V

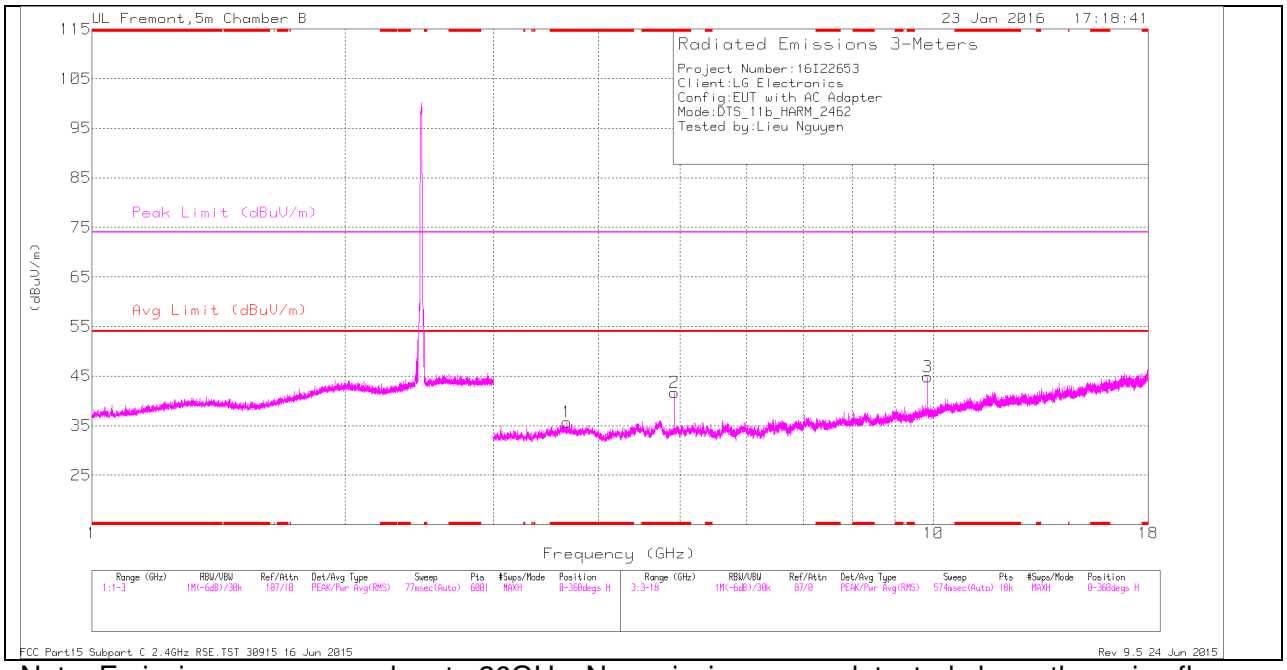
* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

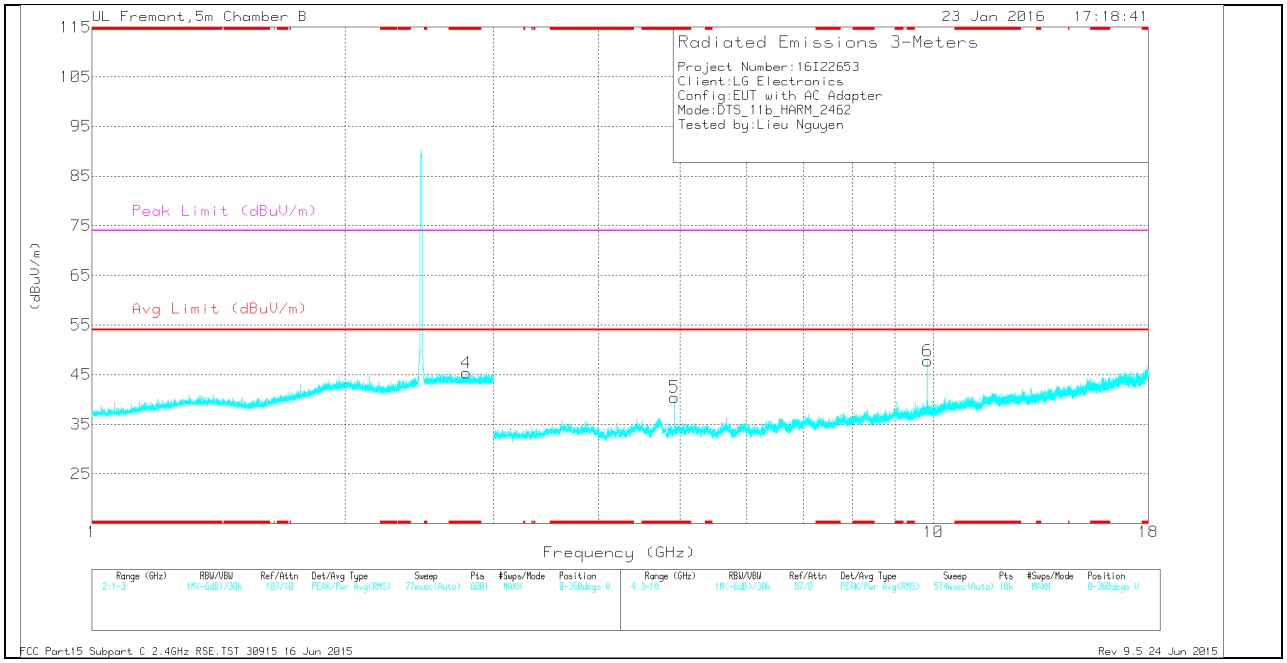
UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

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.

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

HIGH 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
4	* 2.784	36.47	Pk	32.6	-23.7	0	45.37	-	-	74	-28.63	0-360	101	V
1	* 3.669	34.65	Pk	33.7	-32.7	0	35.65	-	-	74	-38.35	0-360	199	H
2	* 4.924	40.04	Pk	34.1	-32.5	0	41.64	-	-	74	-32.36	0-360	101	H
5	* 4.924	38.86	Pk	34.1	-32.5	0	40.46	-	-	74	-33.54	0-360	101	V
3	9.847	33.64	Pk	37	-25.8	0	44.84	-	-	-	-	0-360	101	H
6	9.848	36.52	Pk	37	-25.8	0	47.72	-	-	-	-	0-360	101	V

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

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
* 2.783	43.42	PK2	32.6	-23.7	0	52.32	-	-	74	-21.68	256	345	V
* 2.782	31.47	MAv1	32.6	-23.7	0	40.37	54	-13.63	-	-	256	345	V
* 3.67	41.77	PK2	33.7	-32.7	0	42.77	-	-	74	-31.23	46	394	H
* 3.671	30.34	MAv1	33.7	-32.8	0	31.24	54	-22.76	-	-	46	394	H
* 4.924	44.81	PK2	34.1	-32.5	0	46.41	-	-	74	-27.59	180	108	H
* 4.924	38.62	MAv1	34.1	-32.5	0	40.22	54	-13.78	-	-	180	108	H
* 4.924	44.45	PK2	34.1	-32.5	0	46.05	-	-	74	-27.95	142	106	V
* 4.924	36.56	MAv1	34.1	-32.5	0	38.16	54	-15.84	-	-	142	106	V
9.848	38.48	PK2	37	-25.8	0	49.68	-	-	74	-24.32	21	109	H
9.848	40.99	PK2	37	-25.8	0	52.19	-	-	74	-21.81	112	107	V

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

PK2 - KDB558074 Method: Maximum Peak

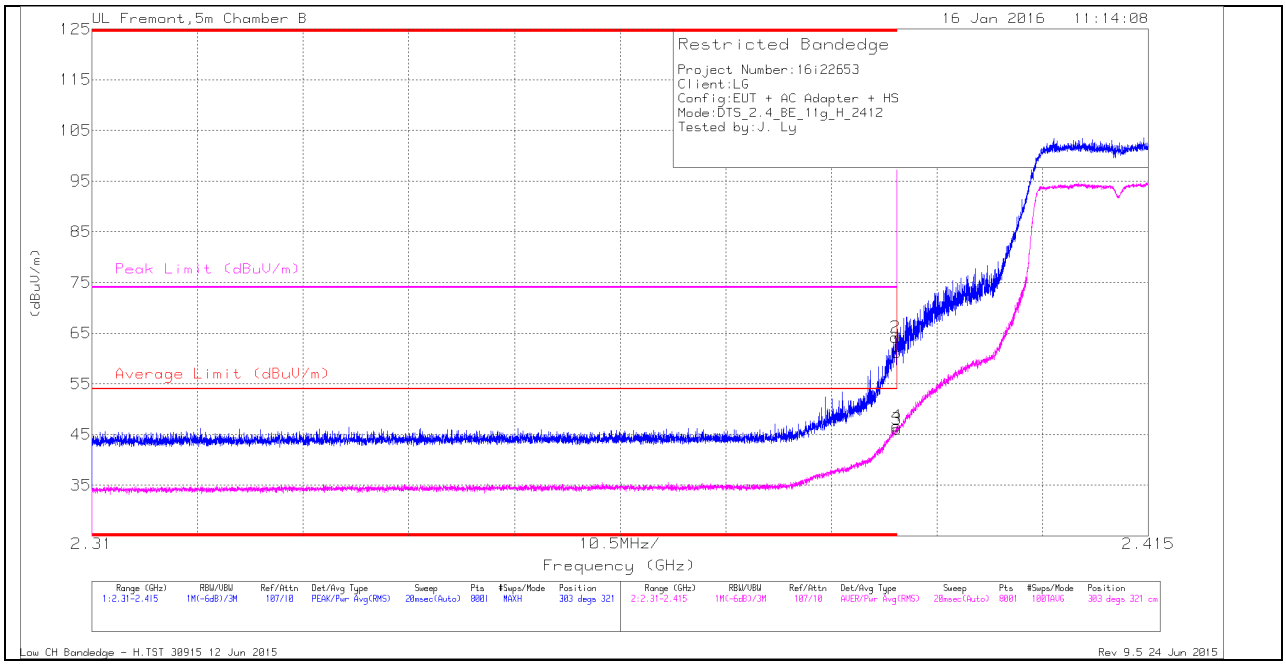
MAv1 - KDB558074 Option 1 Maximum RMS Average

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

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

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	51.11	Pk	32	-21.9	0	61.21	-	-	74	-12.79	303	321	H
2	* 2.39	54.05	Pk	32	-21.9	0	64.15	-	-	74	-9.85	303	321	H
3	* 2.39	35.71	RMS	32	-21.9	.23	46.04	54	-7.96	-	-	303	321	H
4	* 2.39	36.32	RMS	32	-21.9	.23	46.65	54	-7.35	-	-	303	321	H

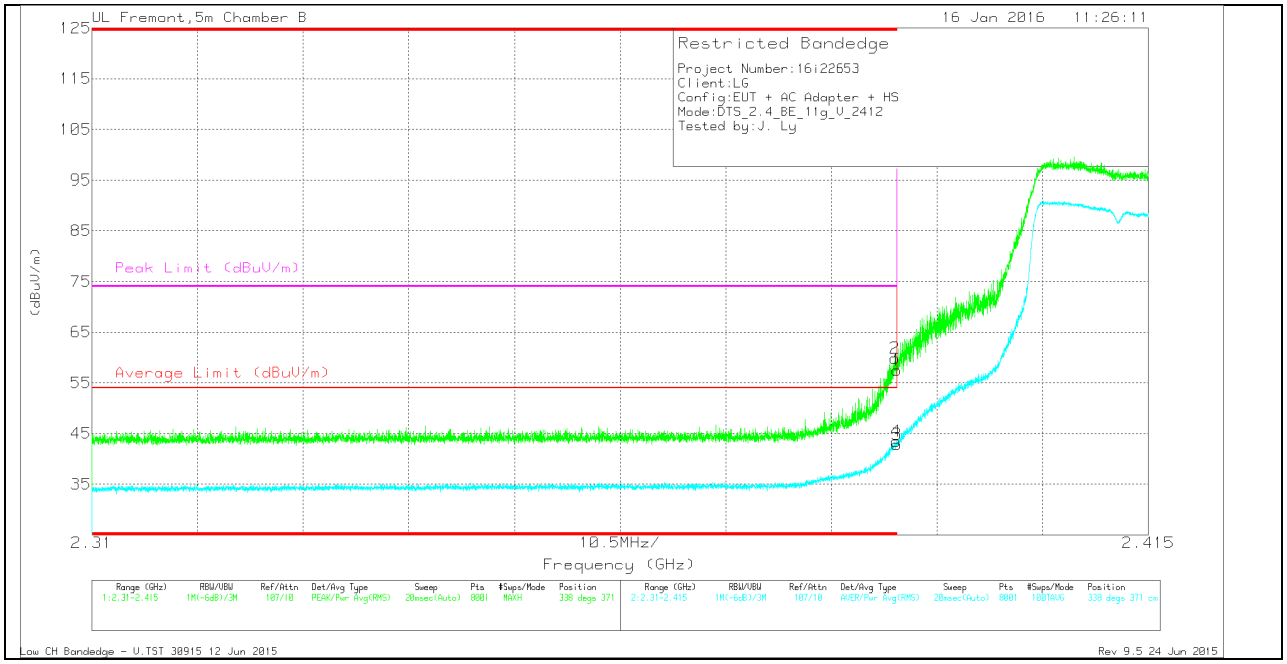
* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

Pk - Peak detector

RMS - RMS detection

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	47.41	Pk	32	-21.9	0	57.51	-	-	74	-16.49	338	371	V
2	* 2.39	49.74	Pk	32	-21.9	0	59.84	-	-	74	-14.16	338	371	V
3	* 2.39	32.48	RMS	32	-21.9	.23	42.81	54	-11.19	-	-	338	371	V
4	* 2.39	33.12	RMS	32	-21.9	.23	43.45	54	-10.55	-	-	338	371	V

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

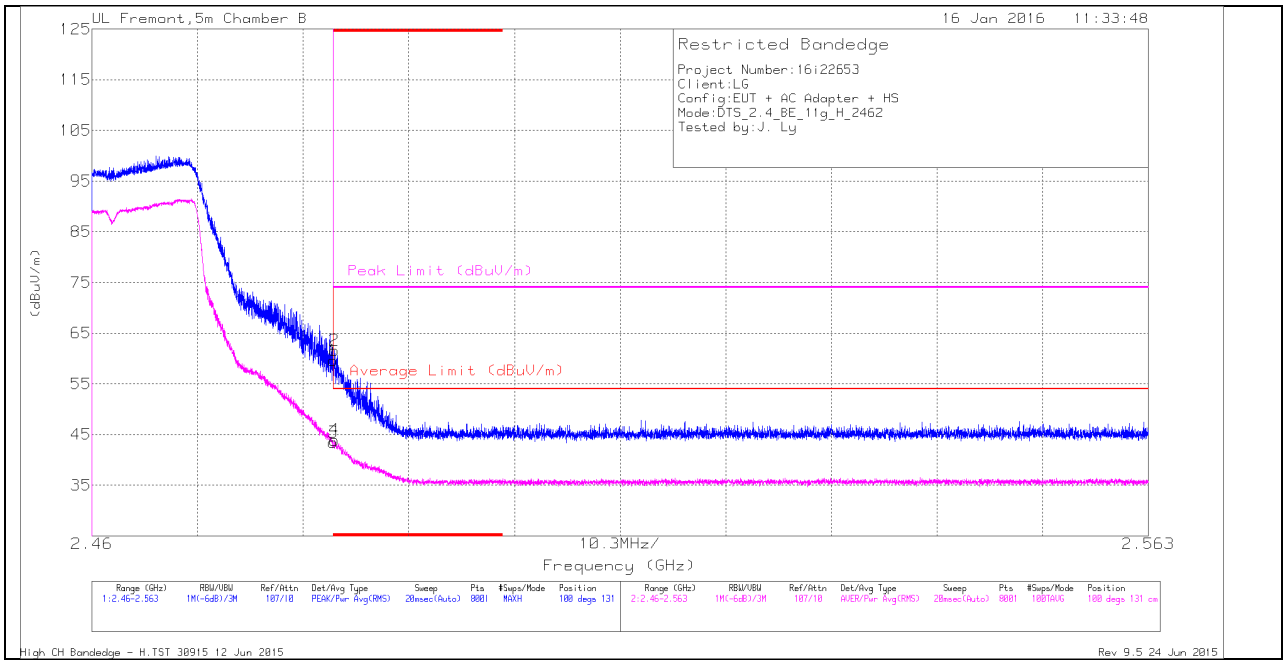
Pk - Peak detector

RMS - RMS detection

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL 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)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	48.96	Pk	32.5	-21.8	0	59.66	-	-	74	-14.34	100	131	H
2	* 2.484	50.89	Pk	32.5	-21.8	0	61.59	-	-	74	-12.41	100	131	H
3	* 2.484	32.56	RMS	32.5	-21.8	.23	43.49	54	-10.51	-	-	100	131	H
4	* 2.484	32.98	RMS	32.5	-21.8	.23	43.91	54	-10.09	-	-	100	131	H

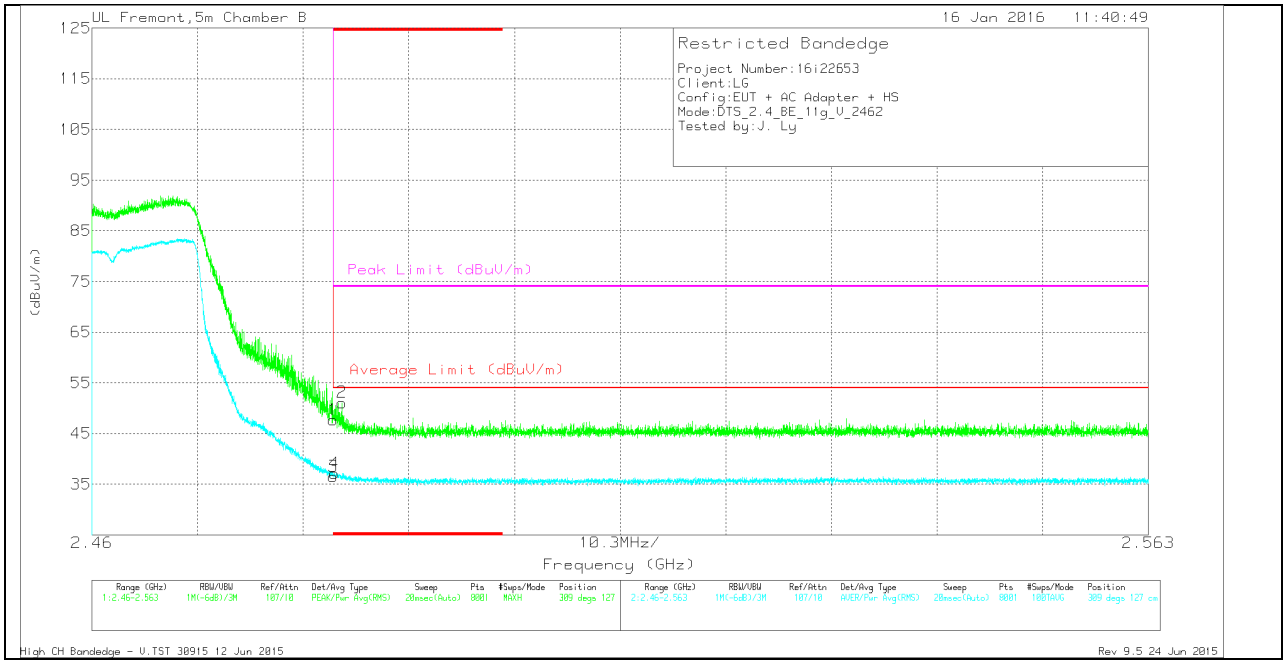
* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

Pk - Peak detector

RMS - RMS detection

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	36.98	Pk	32.5	-21.8	0	47.68	-	-	74	-26.32	309	127	V
2	* 2.484	40.5	Pk	32.5	-21.9	0	51.1	-	-	74	-22.9	309	127	V
3	* 2.484	25.62	RMS	32.5	-21.8	.23	36.55	54	-17.45	-	-	309	127	V
4	* 2.484	26.26	RMS	32.5	-21.8	.23	37.19	54	-16.81	-	-	309	127	V

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

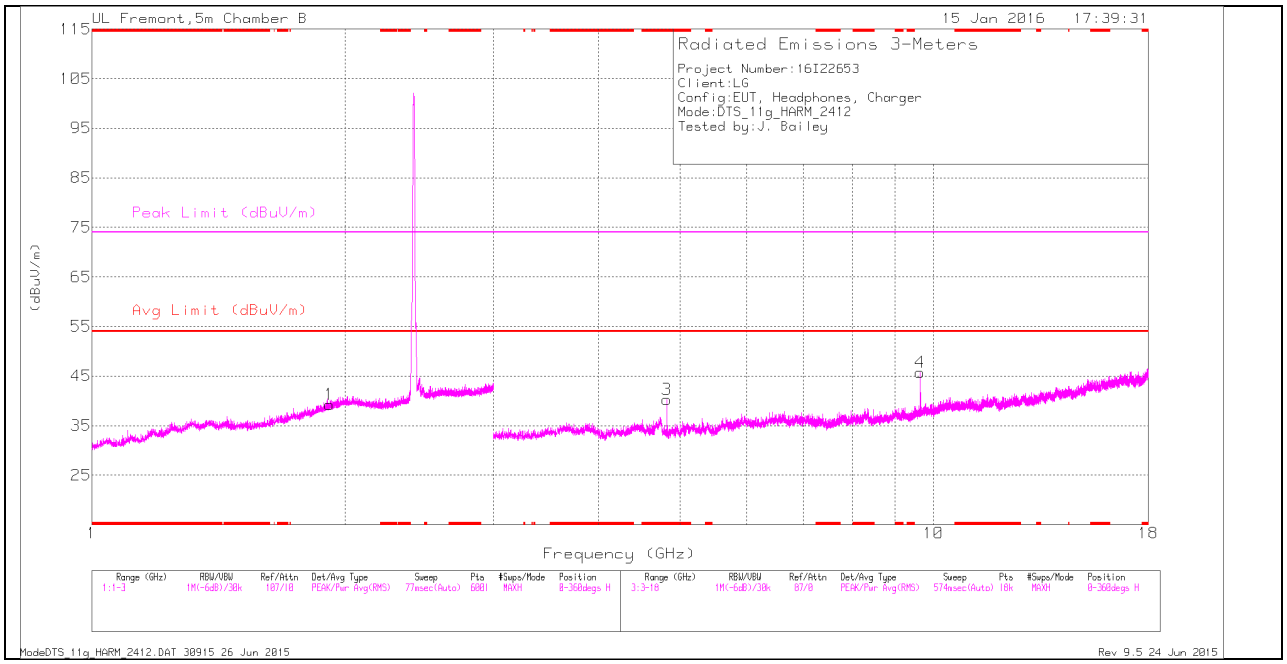
Pk - Peak detector

RMS - RMS detection

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

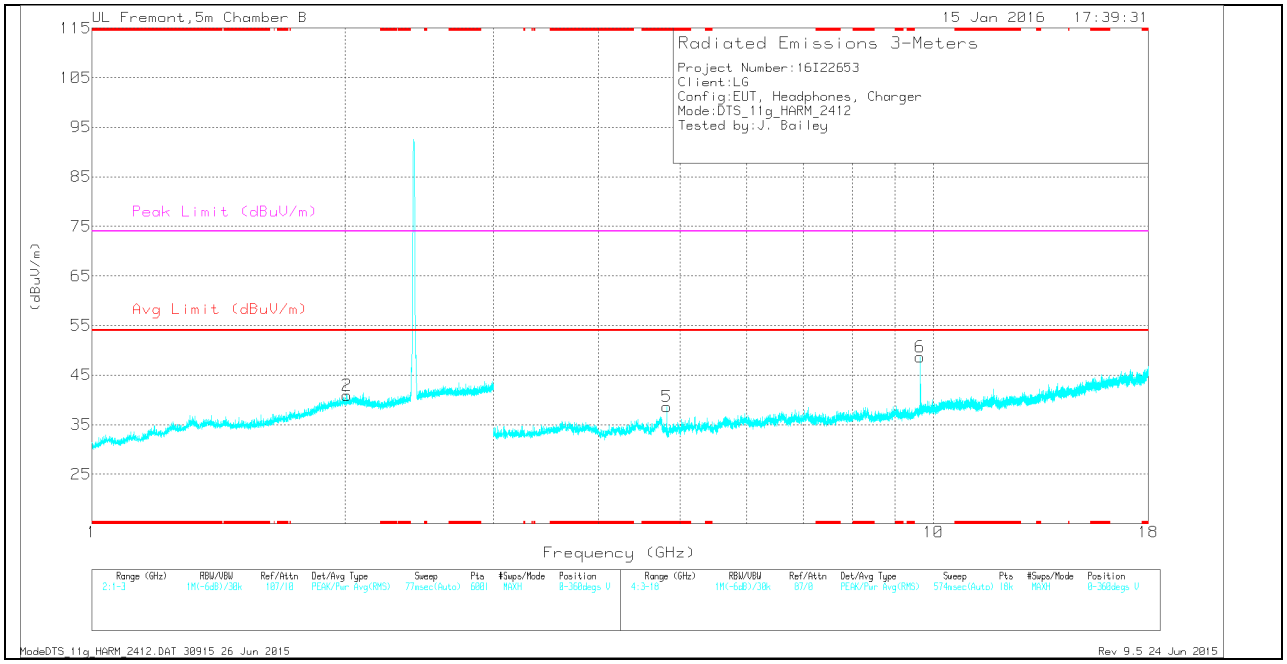
HARMONICS AND SPURIOUS EMISSIONS

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.

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

LOW CHANNEL DATA

Trace Markers

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	* 4.824	37.55	Pk	34.3	-31.6	40.25	-	-	74	-33.75	0-360	101	H
5	* 4.824	35.96	Pk	34.3	-31.6	38.66	-	-	74	-35.34	0-360	101	V
1	1.915	29.2	Pk	31.9	-21.8	39.3	-	-	-	-	0-360	199	H
2	2.011	30.23	Pk	32.3	-21.6	40.93	-	-	-	-	0-360	101	V
6	9.647	38.4	Pk	36.7	-26.5	48.6	-	-	-	-	0-360	101	V
4	9.648	35.55	Pk	36.7	-26.5	45.75	-	-	-	-	0-360	101	H

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

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
* 4.824	43.47	PK2	34.3	-31.6	0	46.17	-	-	74	-27.83	292	162	H
* 4.824	36.52	MAv1	34.3	-31.6	0.23	39.45	54	-14.55	-	-	292	162	H
* 4.824	42.77	PK2	34.3	-31.6	0	45.47	-	-	74	-28.53	333	103	V
* 4.824	35.3	MAv1	34.3	-31.6	0.23	38.23	54	-15.77	-	-	333	103	V
1.915	37.63	PK2	31.9	-21.8	0	47.73	-	-	74	-26.27	360	199	H
1.916	25.79	MAv1	31.9	-21.8	0.23	36.12	54	-17.88	-	-	360	199	H
2.009	37.17	PK2	32.3	-21.7	0	47.77	-	-	74	-26.23	360	102	V
2.012	25.71	MAv1	32.3	-21.7	0.23	36.54	54	-17.46	-	-	360	102	V
9.648	39.64	PK2	36.7	-26.5	0	49.84	-	-	74	-24.16	62	110	H
9.648	33.31	MAv1	36.7	-26.5	0.23	43.74	54	-10.26	-	-	62	110	H
9.648	42.96	PK2	36.7	-26.5	0	53.16	-	-	74	-20.84	185	101	V

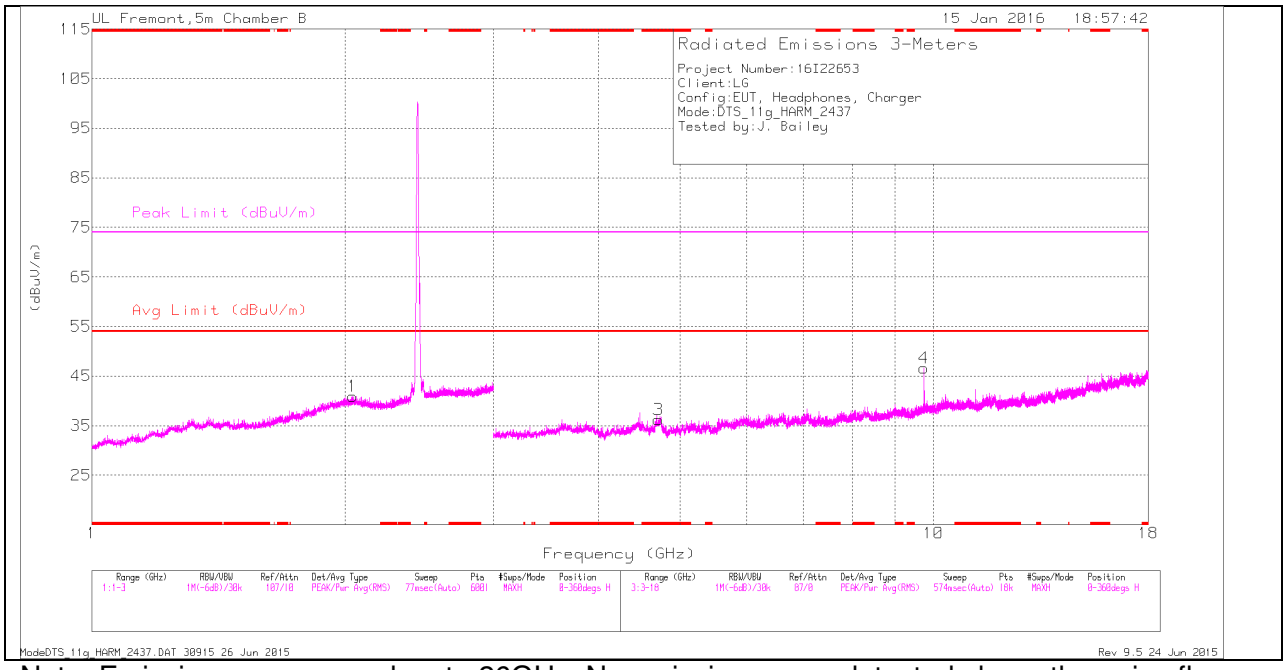
* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

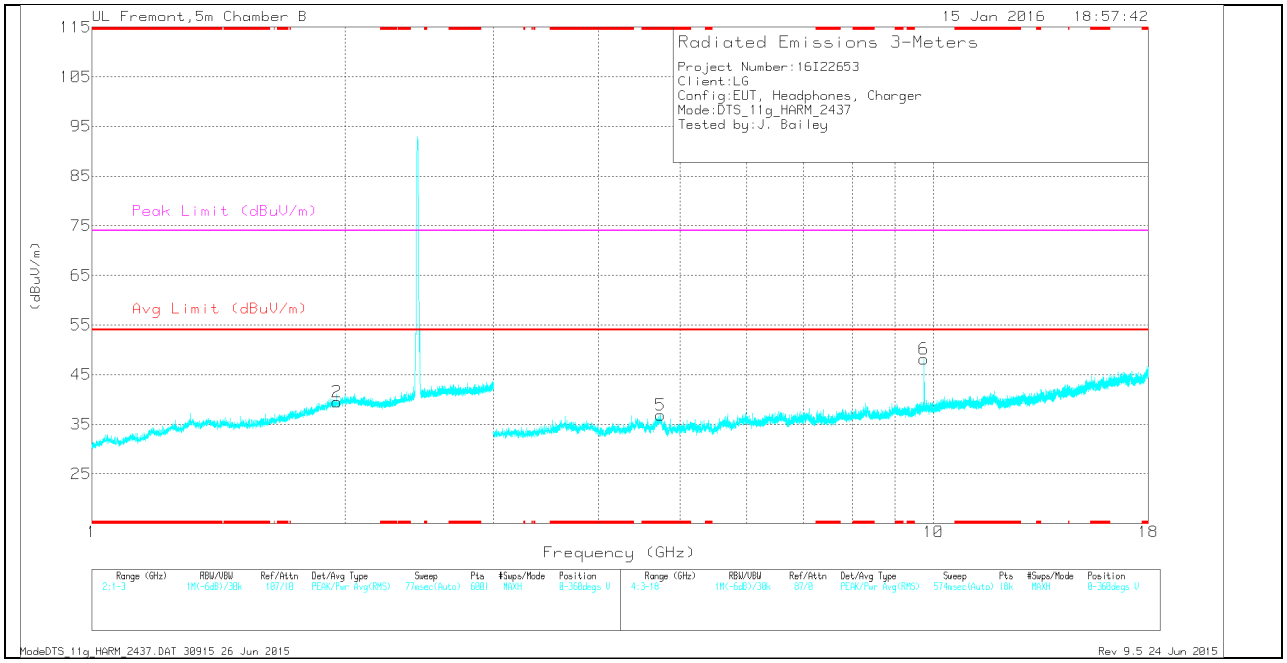
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

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.

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

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
3	* 4.711	33.18	Pk	34.2	-31.2	0	36.18	-	-	74	-37.82	0-360	199	H
5	* 4.742	33.23	Pk	34.3	-30.7	0	36.83	-	-	74	-37.17	0-360	101	V
2	1.953	29.16	Pk	32.1	-21.7	0	39.56	-	-	-	-	0-360	200	V
1	2.04	30.53	Pk	32.1	-21.7	0	40.93	-	-	-	-	0-360	101	H
4	9.748	36.03	Pk	36.9	-26.3	0	46.63	-	-	-	-	0-360	101	H
6	9.748	37.58	Pk	36.9	-26.3	0	48.18	-	-	-	-	0-360	101	V

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

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
* 4.709	41.77	PK2	34.2	-31.2	0	44.77	-	-	74	-29.23	92	171	H
* 4.71	30.27	MAv1	34.2	-31.2	0.23	33.50	54	-20.50	-	-	92	171	H
* 4.743	41.02	PK2	34.3	-30.7	0	44.62	-	-	74	-29.38	311	117	V
* 4.743	29.39	MAv1	34.3	-30.7	0.23	33.22	54	-20.88	-	-	311	117	V
1.951	25.58	MAv1	32.1	-21.6	0.23	36.31	54	-17.69	-	-	360	199	V
1.953	37.38	PK2	32.1	-21.7	0	47.78	-	-	74	-26.22	360	199	V
2.041	38.26	PK2	32.1	-21.6	0	48.76	-	-	74	-25.24	360	101	H
2.042	26.09	MAv1	32.1	-21.6	0.23	36.82	54	-17.18	-	-	360	101	H
9.748	40.48	PK2	36.9	-26.3	0	51.08	-	-	74	-22.92	5	394	H
9.748	35.02	MAv1	36.9	-26.3	0.23	45.85	54	-18.15	-	-	5	394	H
9.748	42.05	PK2	36.9	-26.3	0	52.65	-	-	74	-21.35	187	102	V
9.748	37.59	MAv1	36.9	-26.3	0.23	48.42	54	-15.58	-	-	187	102	V

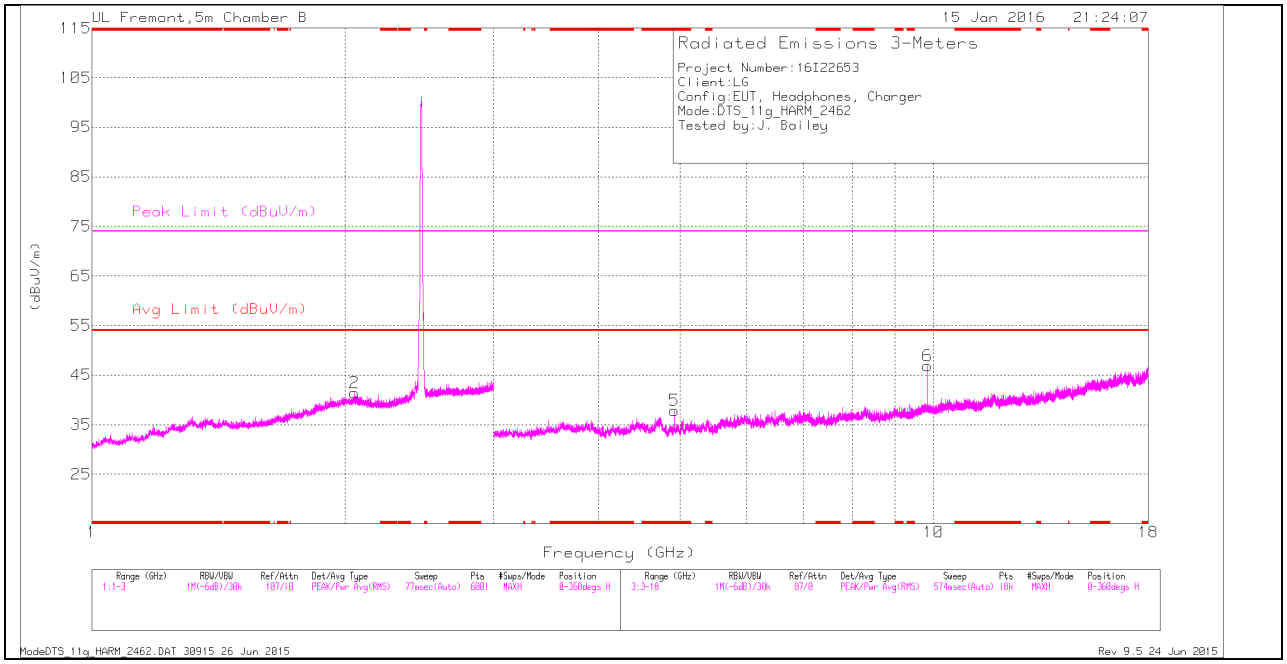
* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

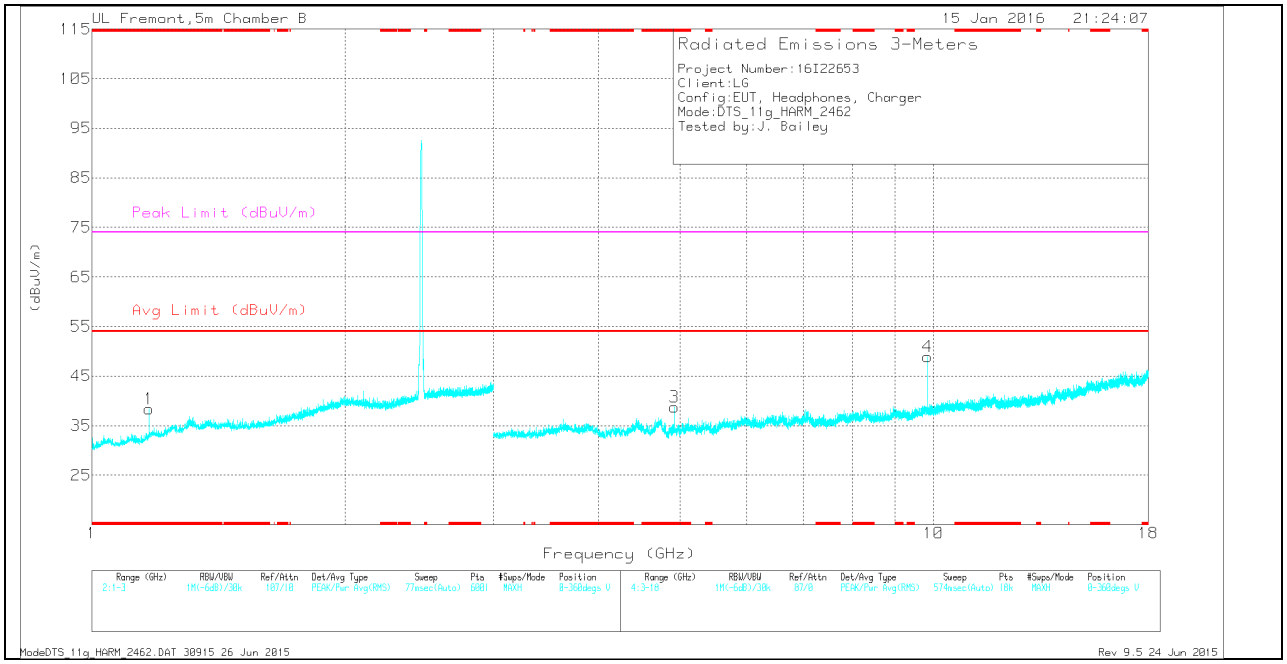
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

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.

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

HIGH CHANNEL DATA

Trace Markers

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	* 1.169	33.42	Pk	28.2	-23.2	38.42	-	-	74	-35.58	0-360	199	V
5	* 4.924	36.2	Pk	34.1	-32.5	37.8	-	-	74	-36.2	0-360	101	H
3	* 4.924	37.16	Pk	34.1	-32.5	38.76	-	-	74	-35.24	0-360	101	V
2	2.053	30.89	Pk	32.1	-21.6	41.39	-	-	-	-	0-360	199	H
6	9.848	35.66	Pk	37	-25.8	46.86	-	-	-	-	0-360	101	H
4	9.848	37.65	Pk	37	-25.8	48.85	-	-	-	-	0-360	101	V

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

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
* 1.17	36.57	PK2	28.2	-23.2	0	41.57	-	-	74	-32.43	211	236	V
* 1.17	24.9	MAv1	28.2	-23.2	0.23	30.13	54	-23.87	-	-	211	236	V
* 4.924	43	PK2	34.1	-32.5	0	44.6	-	-	74	-29.4	309	112	H
* 4.924	34.54	MAv1	34.1	-32.5	0.23	36.37	54	-17.63	-	-	309	112	H
* 4.924	43.98	PK2	34.1	-32.5	0	45.58	-	-	74	-28.42	49	108	V
* 4.924	35.06	MAv1	34.1	-32.5	0.23	36.89	54	-17.11	-	-	49	108	V
2.052	37.93	PK2	32.1	-21.6	0	48.43	-	-	74	-25.57	360	199	H
2.053	26.2	MAv1	32.1	-21.7	0.23	36.83	54	-17.17	-	-	360	199	H
9.848	40.56	PK2	37	-25.8	0	51.76	-	-	74	-22.24	360	360	H
9.848	41.02	PK2	37	-25.8	0	52.22	-	-	74	-21.78	25	101	V

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

PK2 - KDB558074 Method: Maximum Peak

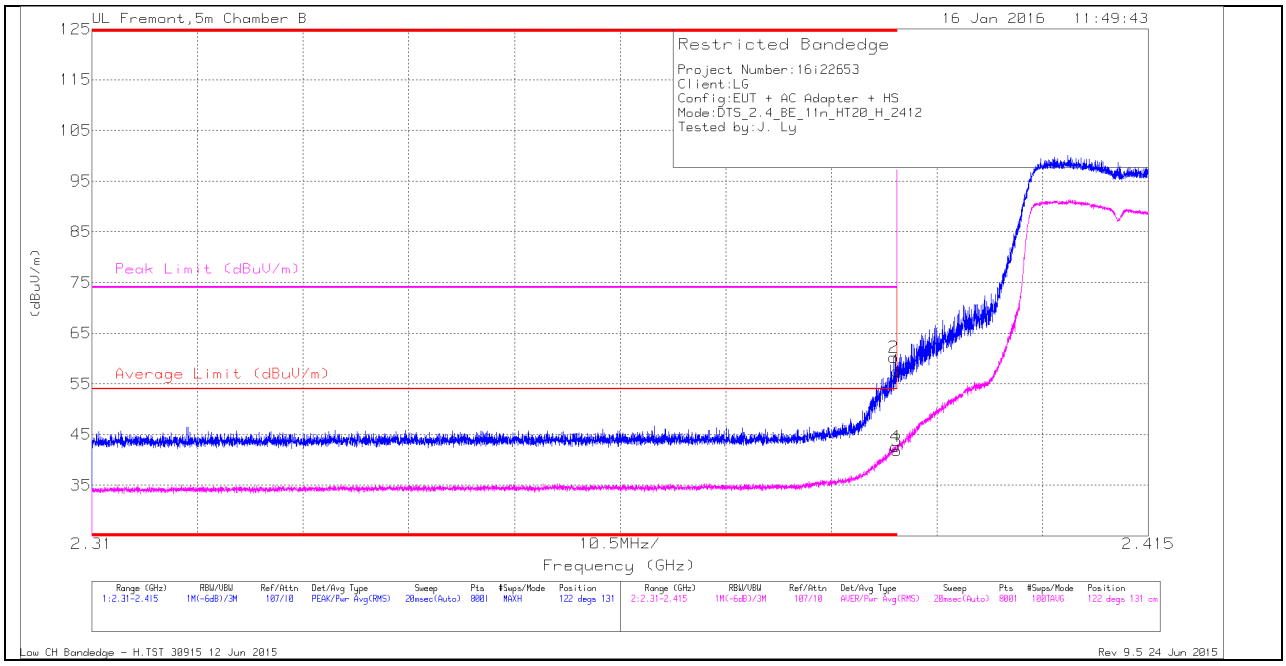
MAv1 - KDB558074 Option 1 Maximum RMS Average

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

10.1.3. 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

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	47.45	Pk	32	-21.9	0	57.55	-	-	74	-16.45	122	131	H
2	* 2.39	50.15	Pk	32	-21.9	0	60.25	-	-	74	-13.75	122	131	H
3	* 2.39	31.5	RMS	32	-21.9	.24	41.84	54	-12.16	-	-	122	131	H
4	* 2.39	32.28	RMS	32	-21.9	.24	42.62	54	-11.38	-	-	122	131	H

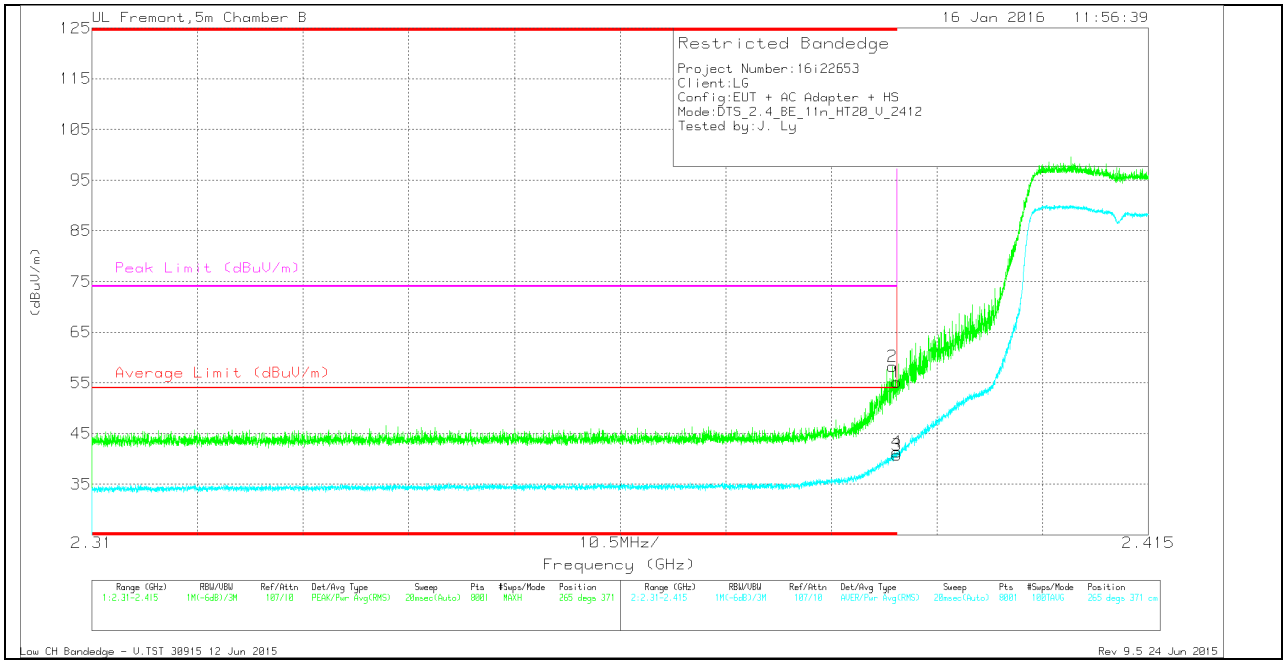
* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

Pk - Peak detector

RMS - RMS detection

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL 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)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	45	Pk	32	-21.9	0	55.1	-	-	74	-18.9	265	371	V
2	* 2.39	48.15	Pk	32	-21.9	0	58.25	-	-	74	-15.75	265	371	V
3	* 2.39	30.4	RMS	32	-21.9	.24	40.74	54	-13.26	-	-	265	371	V
4	* 2.39	31.05	RMS	32	-21.9	.24	41.39	54	-12.61	-	-	265	371	V

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

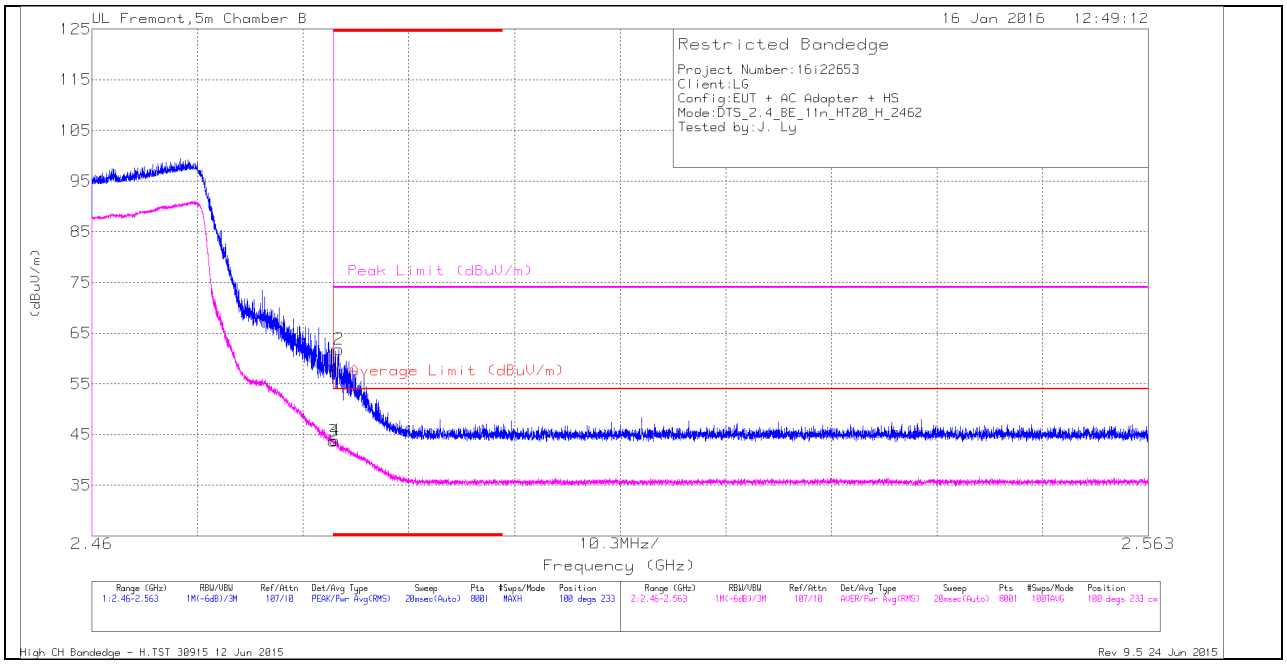
Pk - Peak detector

RMS - RMS detection

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	47.83	Pk	32.5	-21.8	0	58.53	-	-	74	-15.47	100	233	H
2	* 2.484	51.08	Pk	32.5	-21.8	0	61.78	-	-	74	-12.22	100	233	H
3	* 2.484	32.77	RMS	32.5	-21.8	.24	43.71	54	-10.29	-	-	100	233	H
4	* 2.484	32.9	RMS	32.5	-21.8	.24	43.84	54	-10.16	-	-	100	233	H

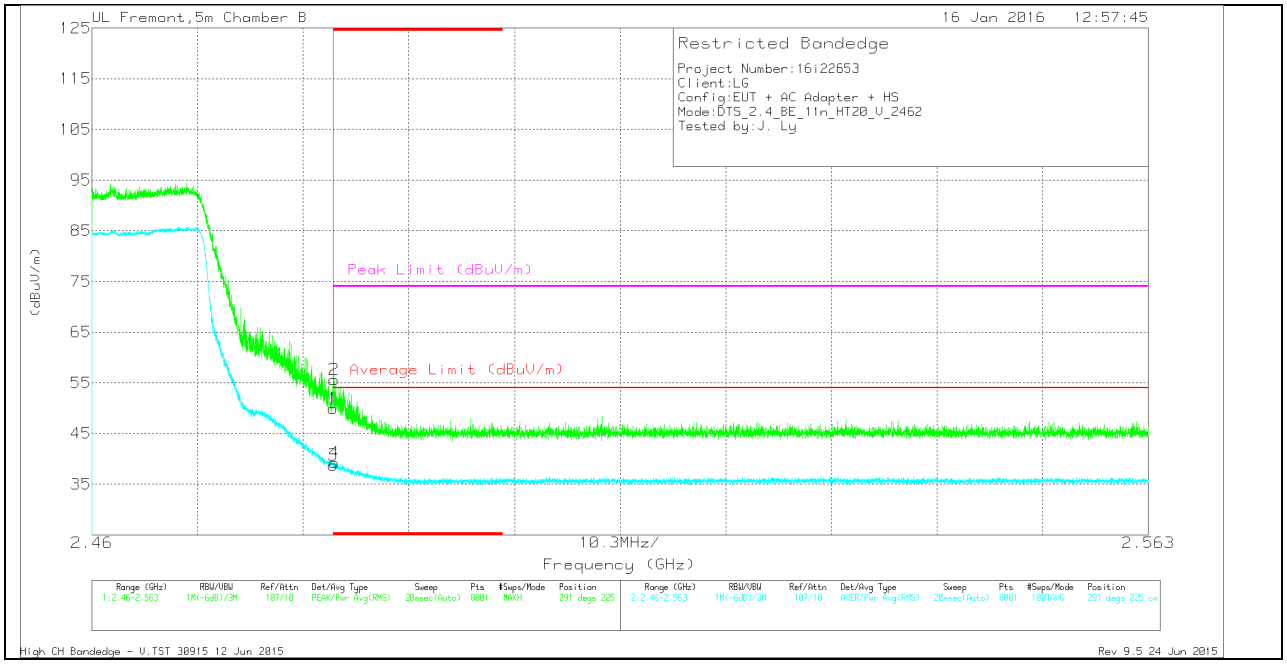
* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

Pk - Peak detector

RMS - RMS detection

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	39.27	Pk	32.5	-21.8	0	49.97	-	-	74	-24.03	291	225	V
2	* 2.484	44.93	Pk	32.5	-21.8	0	55.63	-	-	74	-18.37	291	225	V
3	* 2.484	27.8	RMS	32.5	-21.8	.24	38.74	54	-15.26	-	-	291	225	V
4	* 2.484	28.26	RMS	32.5	-21.8	.24	39.2	54	-14.8	-	-	291	225	V

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

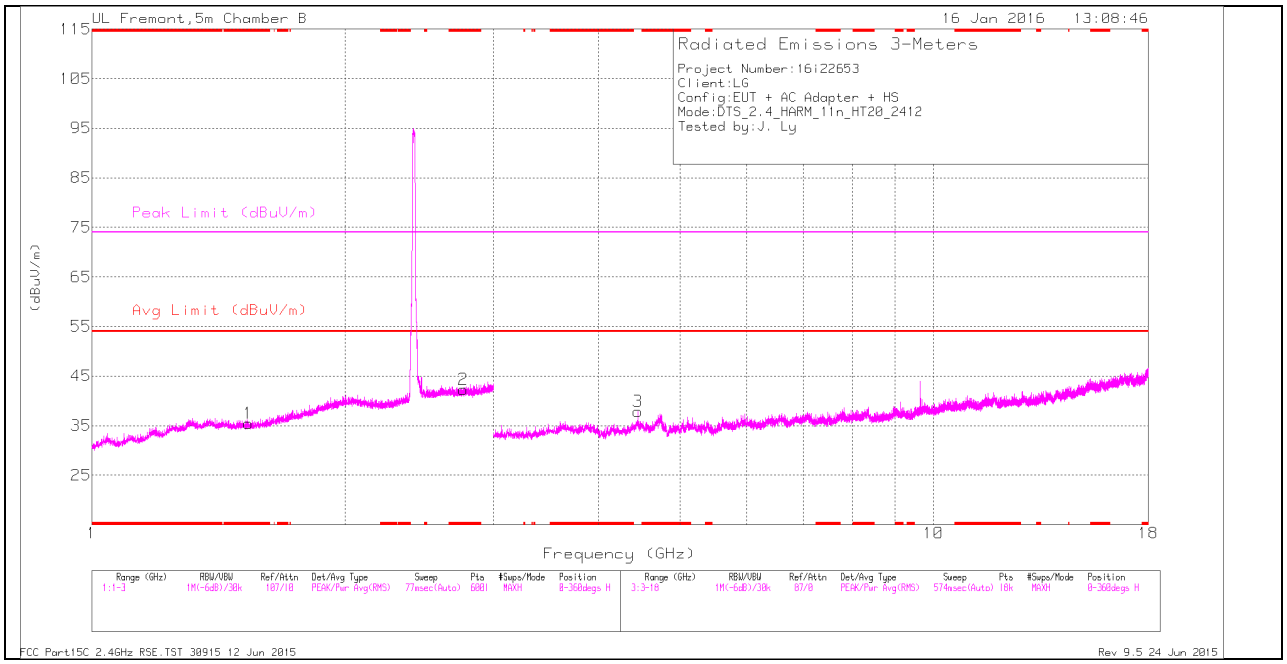
Pk - Peak detector

RMS - RMS detection

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

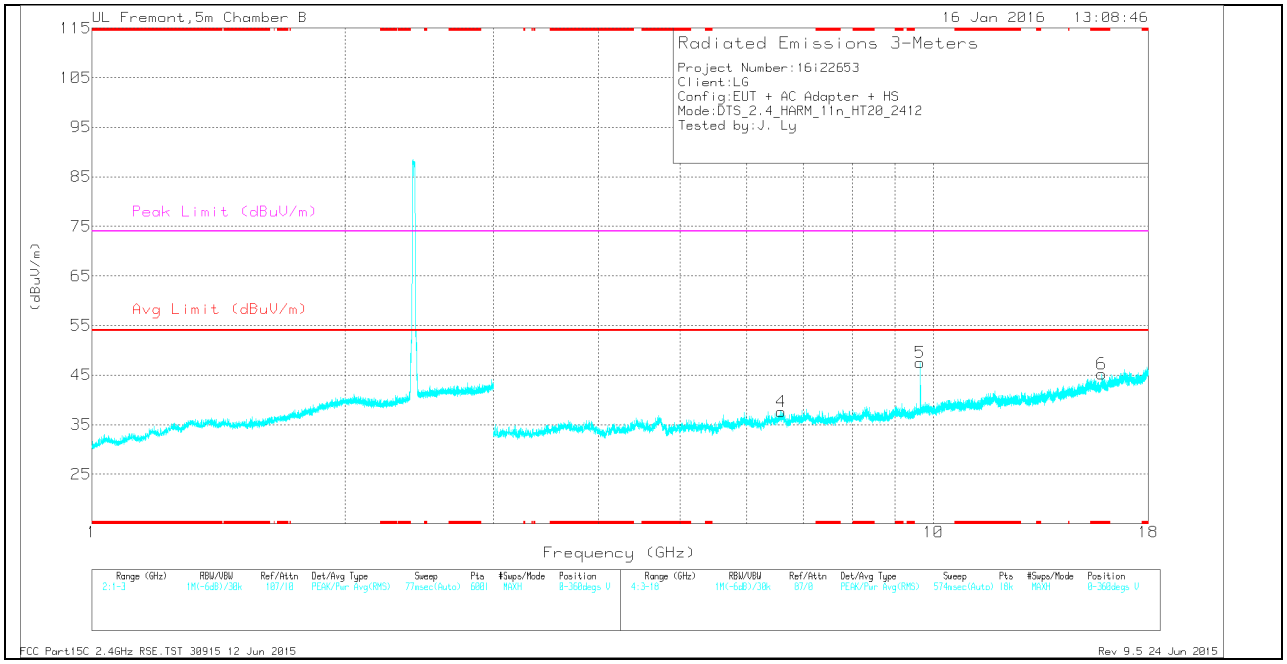
HARMONICS AND SPURIOUS EMISSIONS

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.

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

LOW 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	* 1.535	28.6	Pk	28.7	-21.9	0	35.4	-	-	74	-38.6	0-360	199	H
2	* 2.763	31.05	Pk	32.6	-21.4	0	42.25	-	-	74	-31.75	0-360	199	H
6	* 15.848	25.76	Pk	40.6	-21.1	0	45.26	-	-	74	-28.74	0-360	199	V
3	4.454	34.8	Pk	33.9	-30.8	0	37.9	-	-	74	-36.1	0-360	101	H
4	6.596	32.34	Pk	36	-30.7	0	37.64	-	-	74	-36.36	0-360	101	V
5	9.648	37.34	Pk	36.7	-26.5	0	47.54	-	-	74	-26.46	0-360	101	V

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

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
* 1.537	36.47	PK2	28.7	-21.9	0	43.27	-	-	74	-30.73	360	101	H
* 1.537	25.08	MAv1	28.7	-21.9	.24	32.12	54	-21.88	-	-	360	101	H
* 2.762	38.54	PK2	32.6	-21.3	0	49.84	-	-	74	-24.16	360	101	H
* 2.762	26.8	MAv1	32.6	-21.4	.24	38.24	54	-15.76	-	-	360	101	H
* 15.85	32.31	PK2	40.6	-21.1	0	51.81	-	-	74	-22.19	110	111	V
* 15.849	21.47	MAv1	40.6	-21.1	.24	41.21	54	-12.79	-	-	110	111	V
4.453	30.47	MAv1	33.9	-30.8	.24	33.81	54	-20.19	-	-	360	101	H
4.454	42.01	PK2	33.9	-30.8	0	45.11	-	-	74	-28.89	360	101	H
6.597	29.32	MAv1	36	-30.7	.24	34.86	54	-19.14	-	-	360	101	V
6.598	40.24	PK2	36	-30.8	0	45.44	-	-	74	-28.56	360	101	V
9.648	41.05	PK2	36.7	-26.5	0	51.25	-	-	74	-22.75	110	111	V

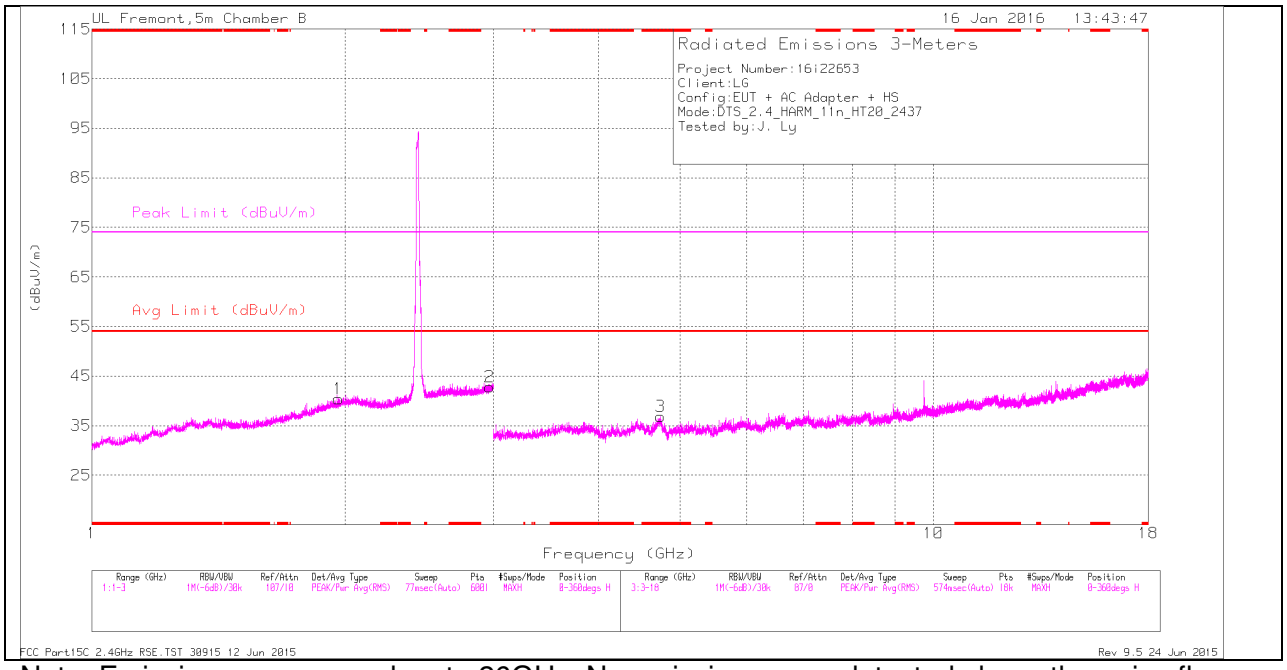
* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

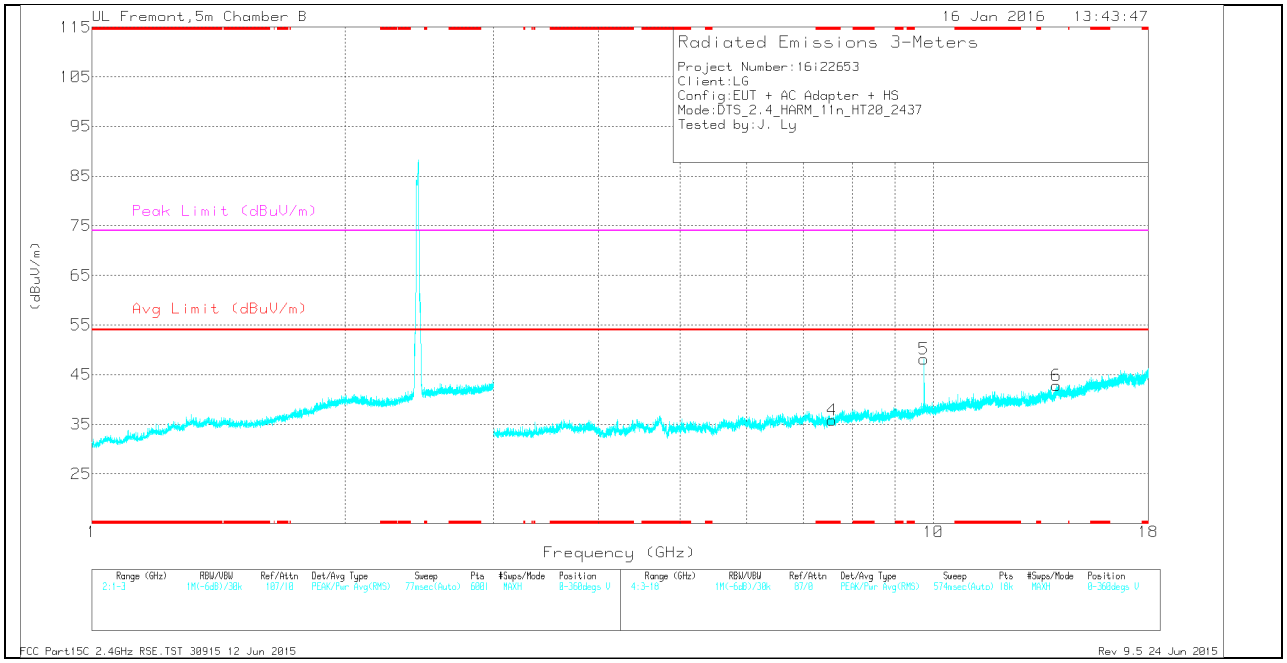
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

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.

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

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
3	* 4.738	33.27	Pk	34.3	-30.7	0	36.87	-	-	74	-37.13	0-360	199	H
4	* 7.579	30.37	Pk	35.4	-29.9	0	35.87	-	-	74	-38.13	0-360	101	V
1	1.963	29.96	Pk	32.1	-21.7	0	40.36	-	-	74	-33.64	0-360	102	H
2	2.97	30.92	Pk	32.6	-20.7	0	42.82	-	-	74	-31.18	0-360	102	H
5	9.748	37.56	Pk	36.9	-26.3	0	48.16	-	-	74	-25.84	0-360	101	V
6	13.995	27.49	Pk	39.1	-23.8	0	42.79	-	-	74	-31.21	0-360	101	V

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

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
* 4.74	40.81	PK2	34.3	-30.7	0	44.41	-	-	74	-29.59	116	107	H
* 4.743	29.89	MAv1	34.3	-30.7	.24	33.73	54	-20.27	-	-	116	107	H
* 7.58	38.94	PK2	35.4	-29.9	0	44.44	-	-	74	-29.56	116	107	V
* 7.578	27.89	MAv1	35.4	-29.9	.24	33.63	54	-20.37	-	-	116	107	V
1.962	37.98	PK2	32.1	-21.6	0	48.48	-	-	74	-25.52	116	136	H
2.97	38.13	PK2	32.6	-20.7	0	50.03	-	-	74	-23.97	116	136	H
9.748	41.52	PK2	36.9	-26.3	0	52.12	-	-	74	-21.88	2	101	V
13.996	35.14	PK2	39.1	-23.8	0	50.44	-	-	74	-23.56	2	101	V

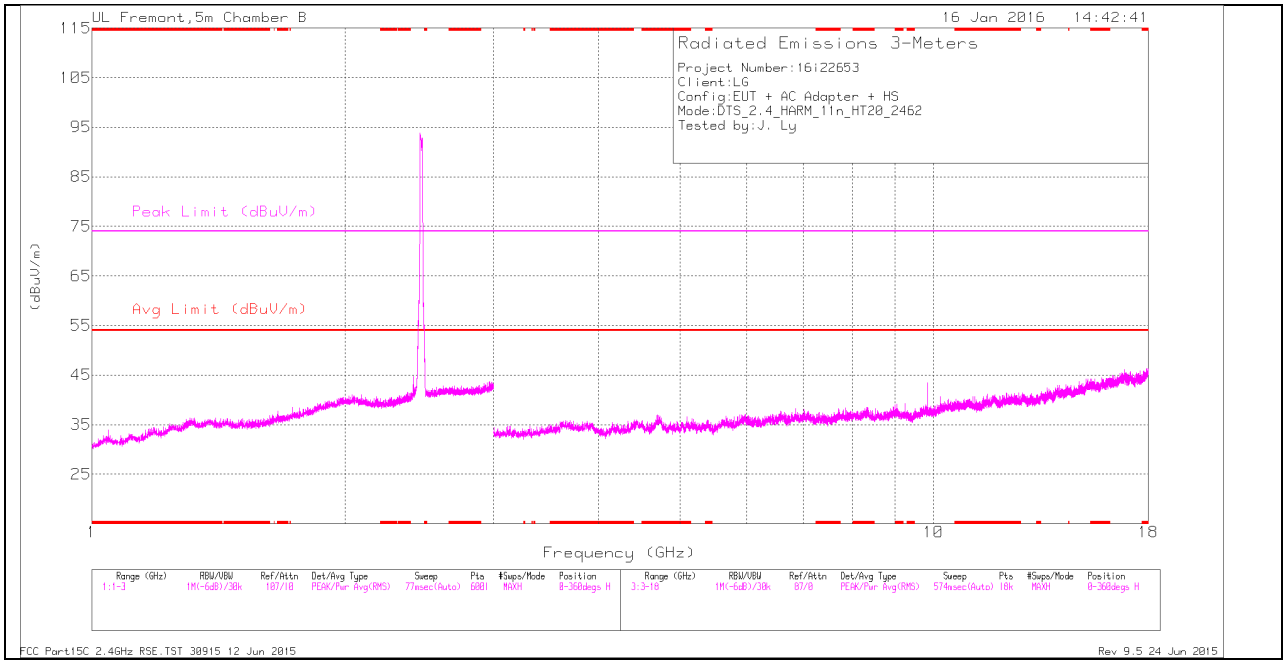
* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

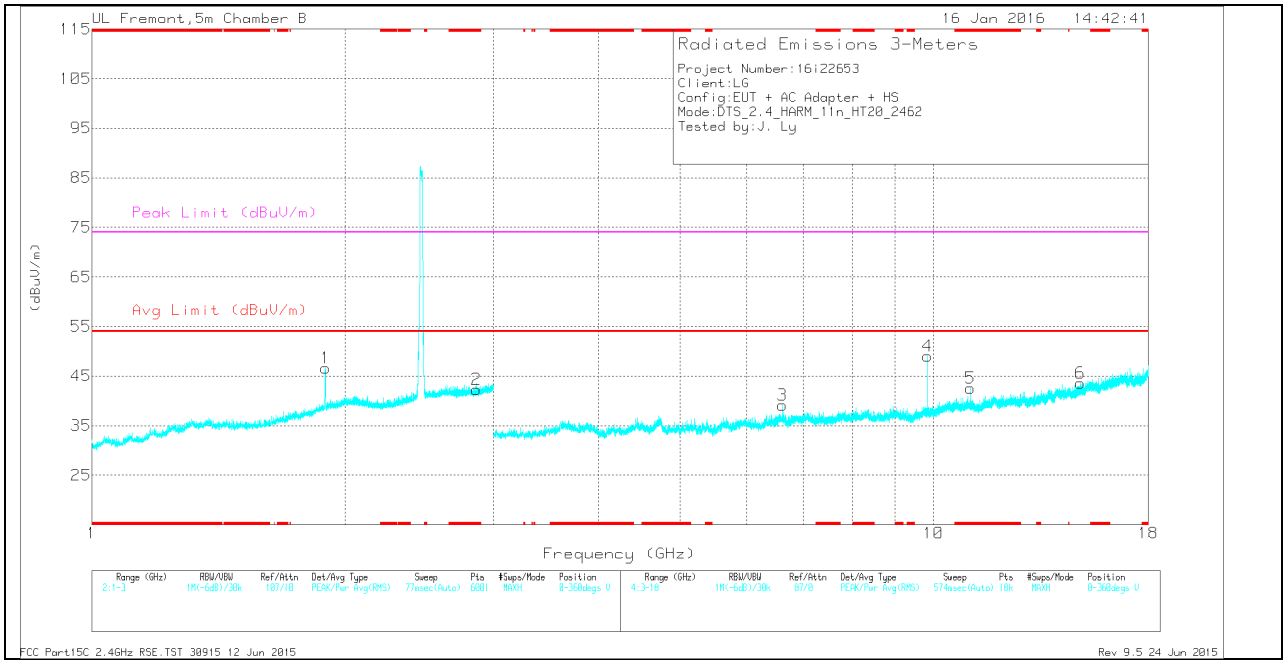
UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

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.

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

HIGH 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
2	* 2.865	30.65	Pk	32.6	-20.9	0	42.35	-	-	74	-31.65	0-360	199	V
5	* 11.065	30.07	Pk	37.8	-25.3	0	42.57	-	-	74	-31.43	0-360	102	V
1	1.894	36.61	Pk	31.7	-21.7	0	46.61	-	-	74	-27.39	0-360	199	V
3	6.615	33.78	Pk	36	-30.7	0	39.08	-	-	74	-34.92	0-360	199	V
4	9.848	37.88	Pk	37	-25.8	0	49.08	-	-	74	-24.92	0-360	102	V
6	14.951	27.37	Pk	40	-23.8	0	43.57	-	-	74	-30.43	0-360	102	V

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10 Restricted Band

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
* 2.864	38.04	PK2	32.6	-21	0	49.64	-	-	74	-24.36	132	185	V
* 2.866	26.55	MAv1	32.6	-20.9	.24	38.49	54	-15.51	-	-	132	185	V
* 11.067	35.04	PK2	37.8	-25.3	0	47.54	-	-	74	-26.46	192	122	V
* 11.066	24.04	MAv1	37.8	-25.3	.24	36.78	54	-17.22	-	-	192	122	V
1.895	37.37	PK2	31.8	-21.7	0	47.47	-	-	74	-26.53	132	185	V
1.895	25.1	MAv1	31.7	-21.7	.24	35.34	54	-18.66	-	-	132	185	V
6.613	40.38	PK2	36	-30.7	0	45.68	-	-	74	-28.32	132	185	V
6.615	28.93	MAv1	36	-30.7	.24	34.47	54	-19.53	-	-	132	185	V
9.848	41.08	PK2	37	-25.8	0	52.28	-	-	74	-21.72	192	122	V
14.952	34.27	PK2	40	-23.8	0	50.47	-	-	74	-23.53	192	122	V

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

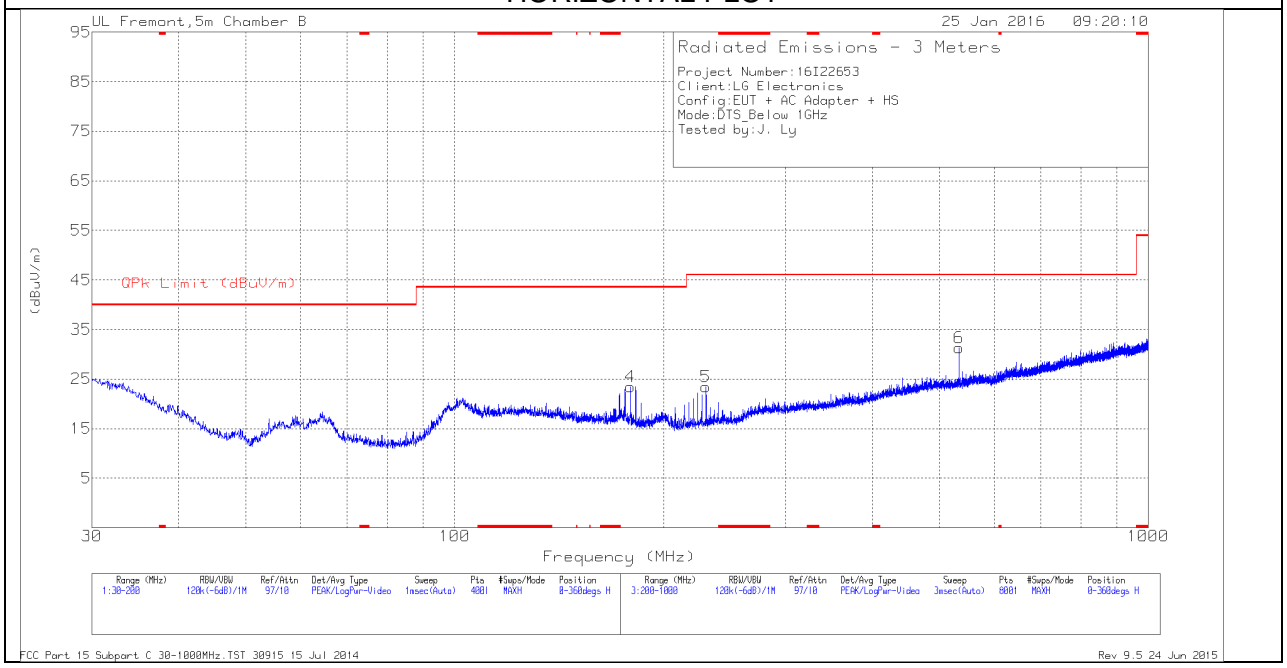
MAv1 - KDB558074 Option 1 Maximum RMS Average

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

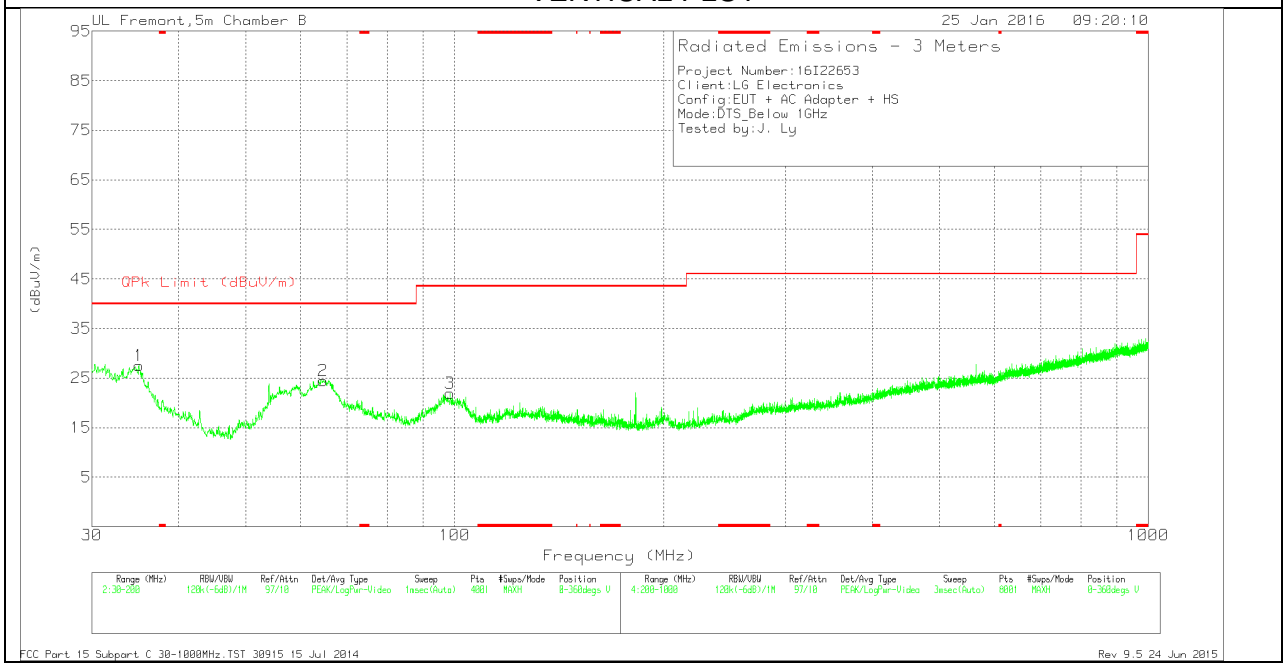
10.2. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



VERTICAL PLOT



This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

Below 1G Data

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T130 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	35.1	34.86	Pk	21.5	-28.8	27.56	40	-12.44	0-360	101	V
2	64.68	41.1	Pk	11.9	-28.5	24.5	40	-15.5	0-360	101	V
3	98.4888	36.27	Pk	13.8	-28.1	21.97	43.52	-21.55	0-360	101	V
4	179.175	35.43	Pk	15.3	-27.3	23.43	43.52	-20.09	0-360	101	H
5	230.4	35.12	Pk	15	-26.7	23.42	46.02	-22.6	0-360	101	H
6	533.3	35.47	Pk	22	-26.2	31.27	46.02	-14.75	0-360	199	H

* - indicates frequency in 47 CFR §15.205/IC RSS-GEN §8.10Restricted Band

Pk - Peak detector

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.