



FCC CFR47 PART 15 SUBPART C

**BLUETOOTH LOW ENERGY
CERTIFICATION TEST REPORT**

FOR

GSM/WCDMA/LTE PHABLET + BLUETOOTH, DTS/UNII a/b/g/n and NFC

MODEL NUMBER: LG-H740, LGH740, H740

FCC ID: ZNFH740

REPORT NUMBER: 15I21238-E3

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NVLAP LAB CODE 200065-0

Revision History

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC.
EUT DESCRIPTION: GSM/WCDMA/LTE PHABLET + BLUETOOTH, DTS/UNII a/b/g/n and NFC
MODEL: LG-H740, LGH740, H740
SERIAL NUMBER: 1ZW89 (RADIATED), 1ZW8C (CONDUCTED)
DATE TESTED: JULY 6-27, 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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UL VERIFICATION SERVICES INC

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2009 for FCC and ANSI C63.10-2013 for IC, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 3, and RSS-247 Issue 1. ANSI C63.10-2009 Deviation

Radiated spurious emission above 1GHz EUT height is 1.5m not 0.8m.

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
<input type="checkbox"/> Chamber A(IC: 2324B-1)	<input type="checkbox"/> Chamber D(IC: 2324B-4)
<input type="checkbox"/> Chamber B(IC: 2324B-2)	<input type="checkbox"/> Chamber E(IC: 2324B-5)
<input checked="" type="checkbox"/> Chamber C(IC: 2324B-3)	<input type="checkbox"/> Chamber F(IC: 2324B-6)
	<input type="checkbox"/> Chamber G(IC: 2324B-7)
	<input type="checkbox"/> 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:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable} \\ &\text{Loss (dB)} - \text{Preamp Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

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/WCDMA/LTE PHABLET + BLUETOOTH, DTS/UNII a/b/g/n and NFC

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2402-2480	BLE	-0.57	0.88

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -2.0 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.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	LG	MCS-N04WS	SA560000030	N/A
Earphone	LG	N/A	N/A	N/A

I/O CABLES

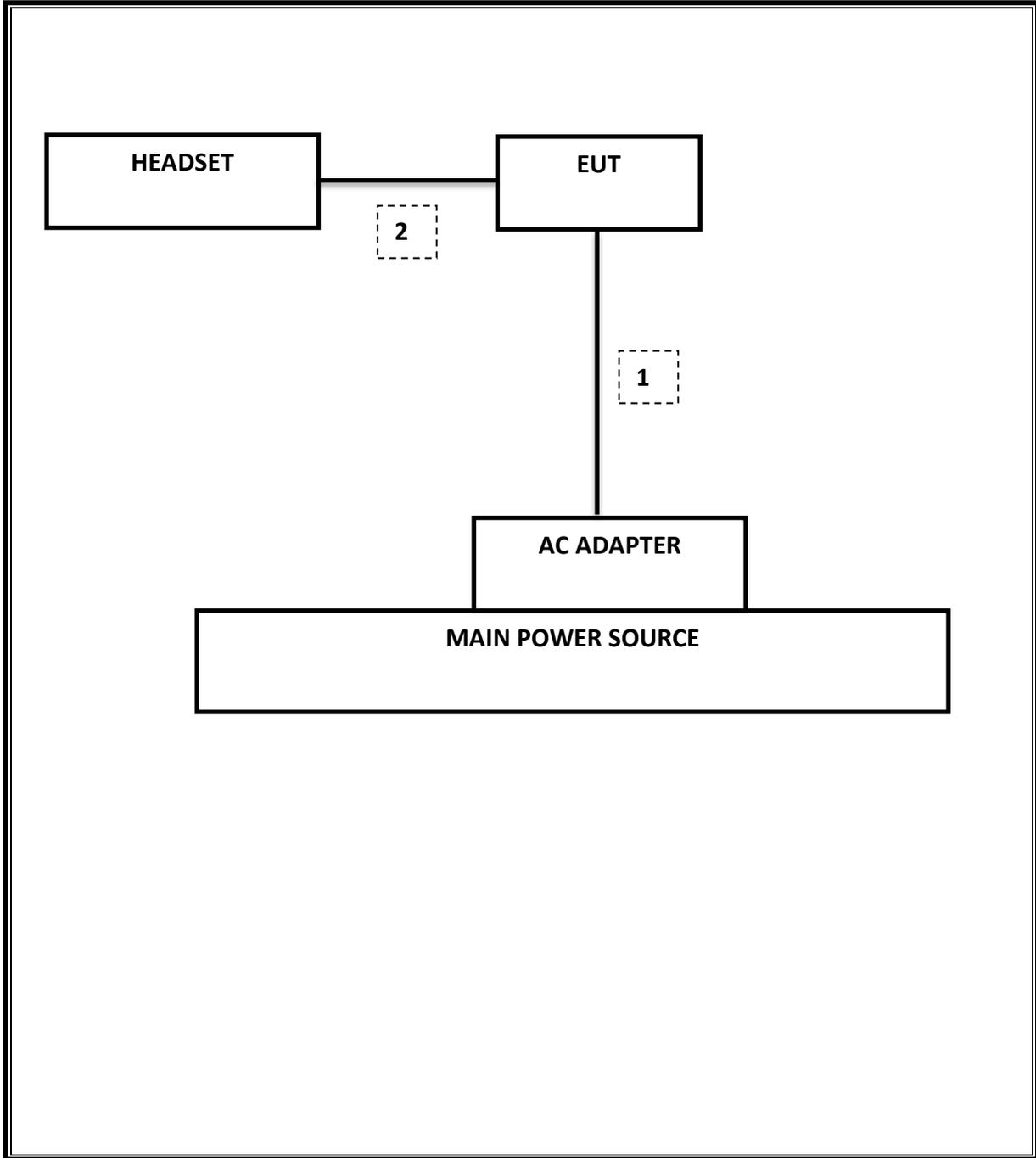
I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	Mini-USB	Shielded	1.2m	N/A
2	Audio	1	Mini-Jack	Unshielded	1m	N/A

TEST SETUP

The EUT is continuously communicating to the Bluetooth tester during the tests.

EUT was set in the Hidden menu mode to enable BLE communications.

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
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB1	C01171	02/13/16
Antenna, Horn, 18GHz	EMCO	3115	C00783	10/25/15
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00980	11/14/15
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/16
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/16
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	T404	06/29/16
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/15
CBT Bluetooth Tester	R & S	CBT	T258	06/30/16
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/15
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/15
LISN, 30 MHz	FCC	50/250-25-2	C00626	01/14/16
Reject Filter, 2.4GHz	Micro-Tronics	BRM50702	N02684	CNR
Radiated Software	UL	UL EMC	Ver 9.5, July 22, 2014	
Conducted Software	UL	UL EMC	Ver 9.5, May 17 2012	
CLT Software	UL	UL RF	Ver 1.0, Feb 2 2015	
Antenna Port Software	UL	UL RF	Ver 2.1.1.1, Jan 20 2015	

7. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)(2)	RSS-247 5.2.1	Occupied Band width (6dB)	>500KHz	Conducted	Pass	0.633 MHz
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-49.62 dBm
15.247	RSS-247 5.4.4	TX conducted output power	<30dBm		Pass	-0.57 dBm
15.247	RSS-247 5.2.2	PSD	<8dBm		Pass	-15.70 dBm
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10	Radiated	Pass	35.23 dBuV
15.205, 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	< 54dBuV/m		Pass	44.15 dBuV/m

8. ANTENNA PORT TEST RESULTS

8.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

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

TEST PROCEDURE

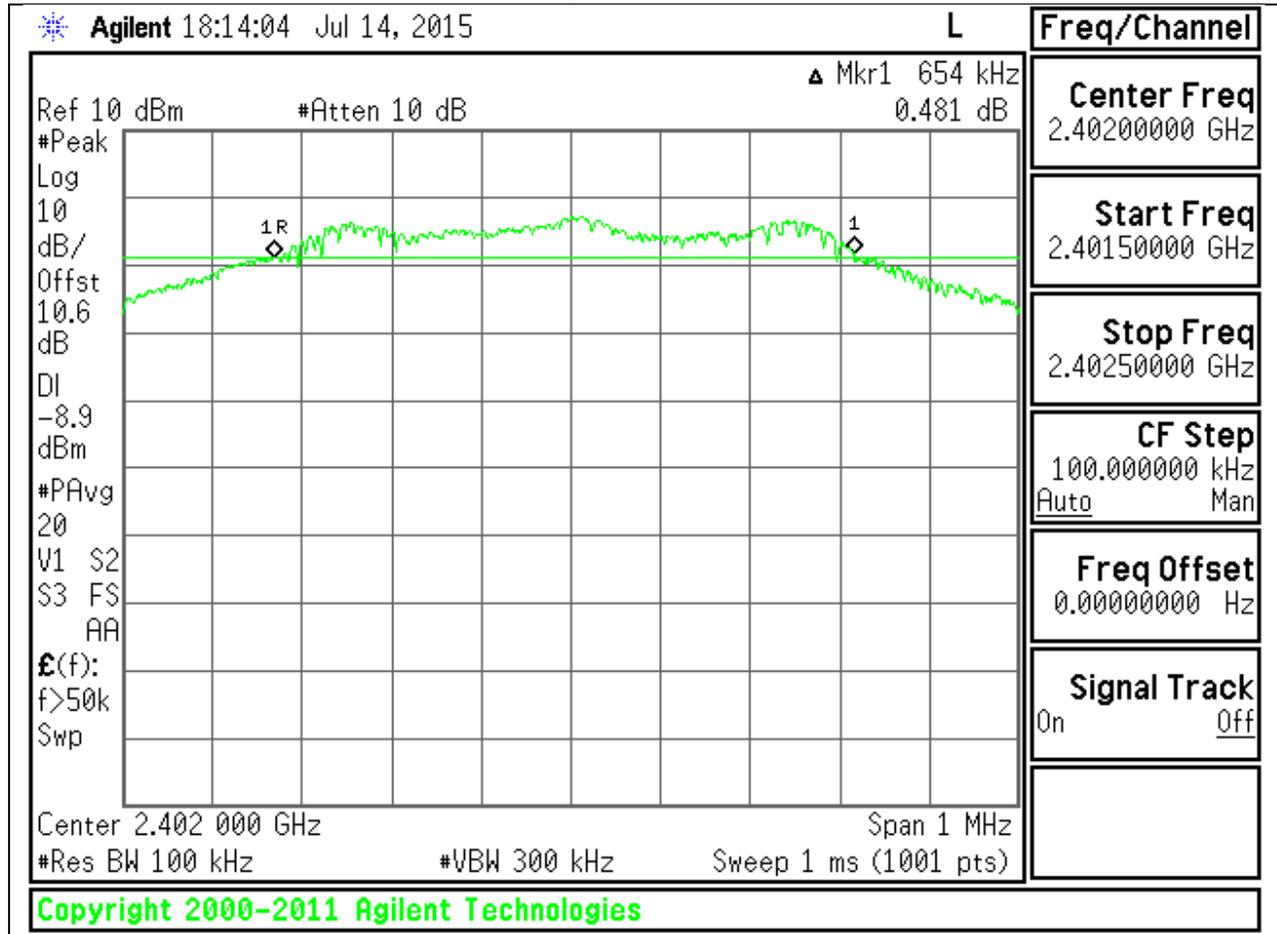
The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

RESULTS

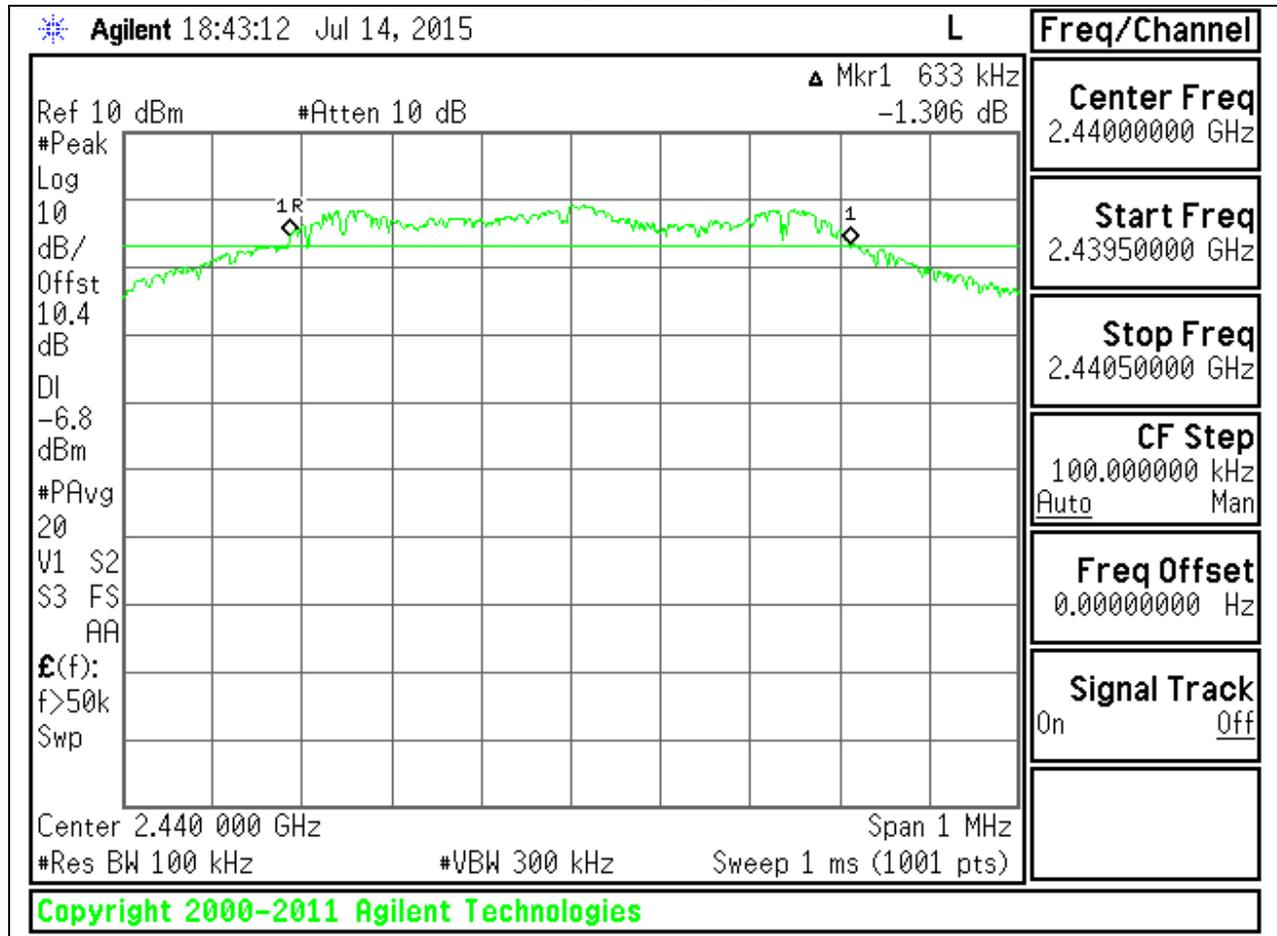
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.6540	0.5
Middle	2440	0.6330	0.5
High	2480	0.6500	0.5

6 dB BANDWIDTH PLOTS

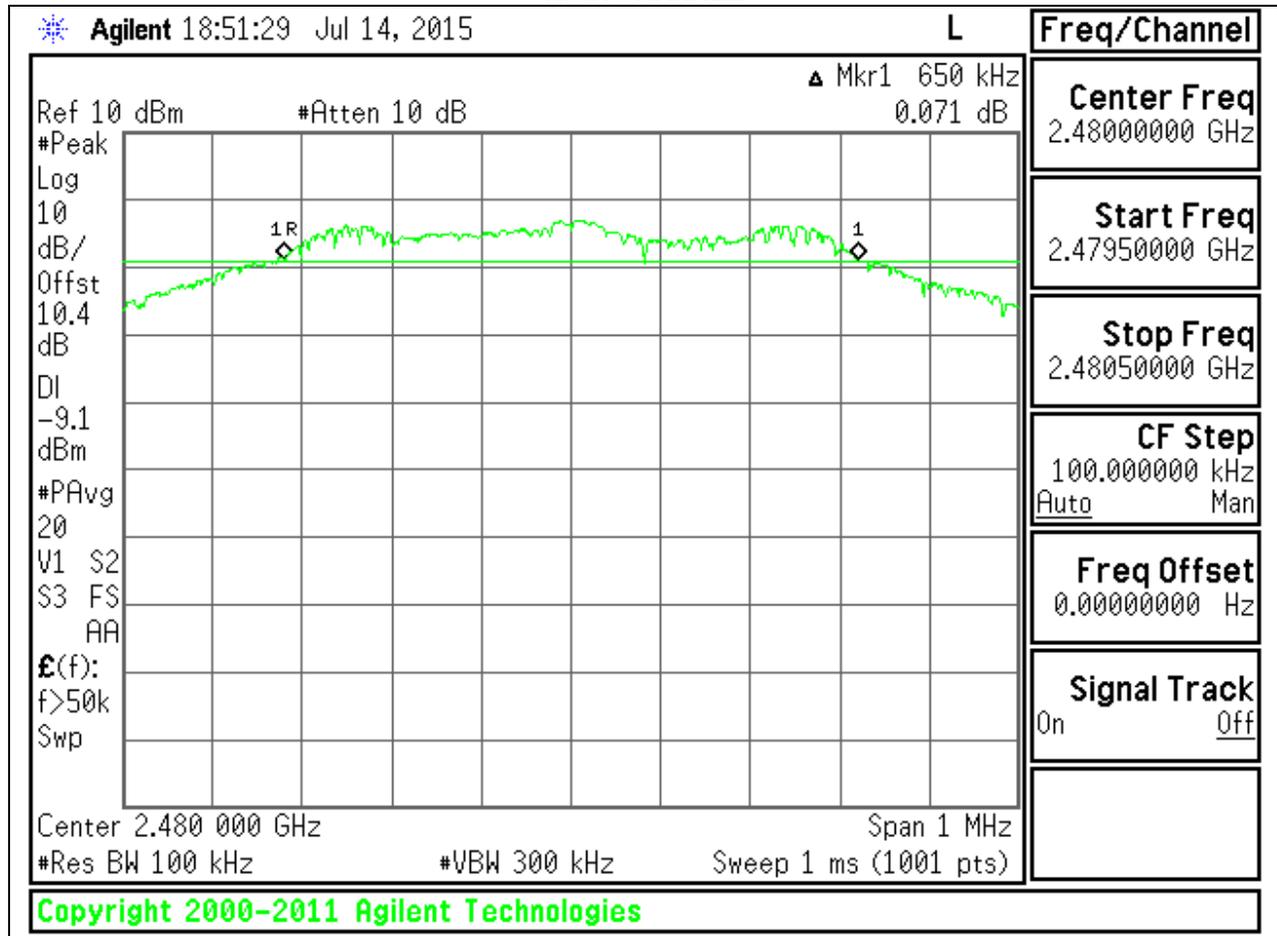
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



8.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

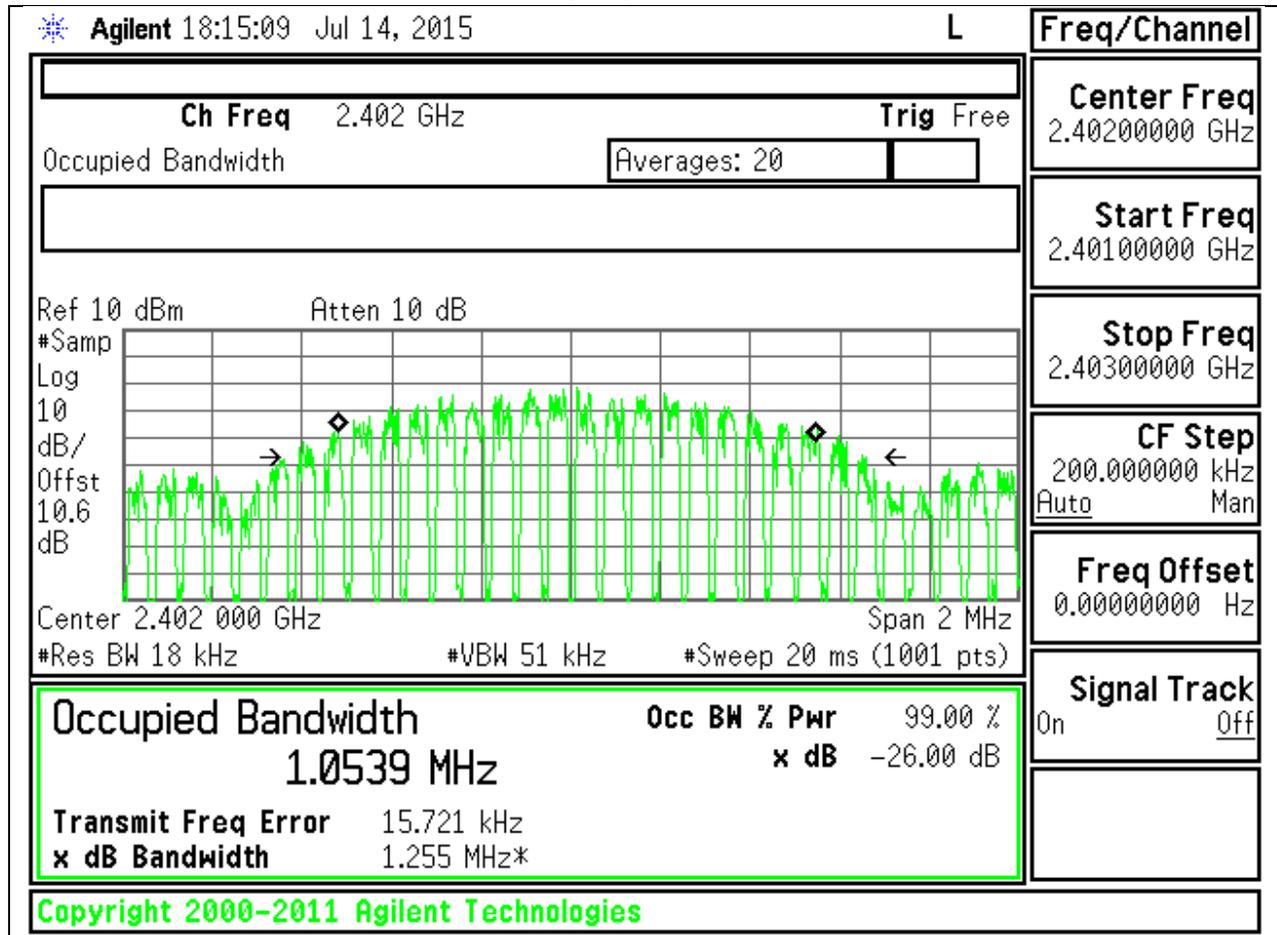
Reference to KDB558074 D01 DTS Meas Guidance v03r03: The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth and to 1% of the span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

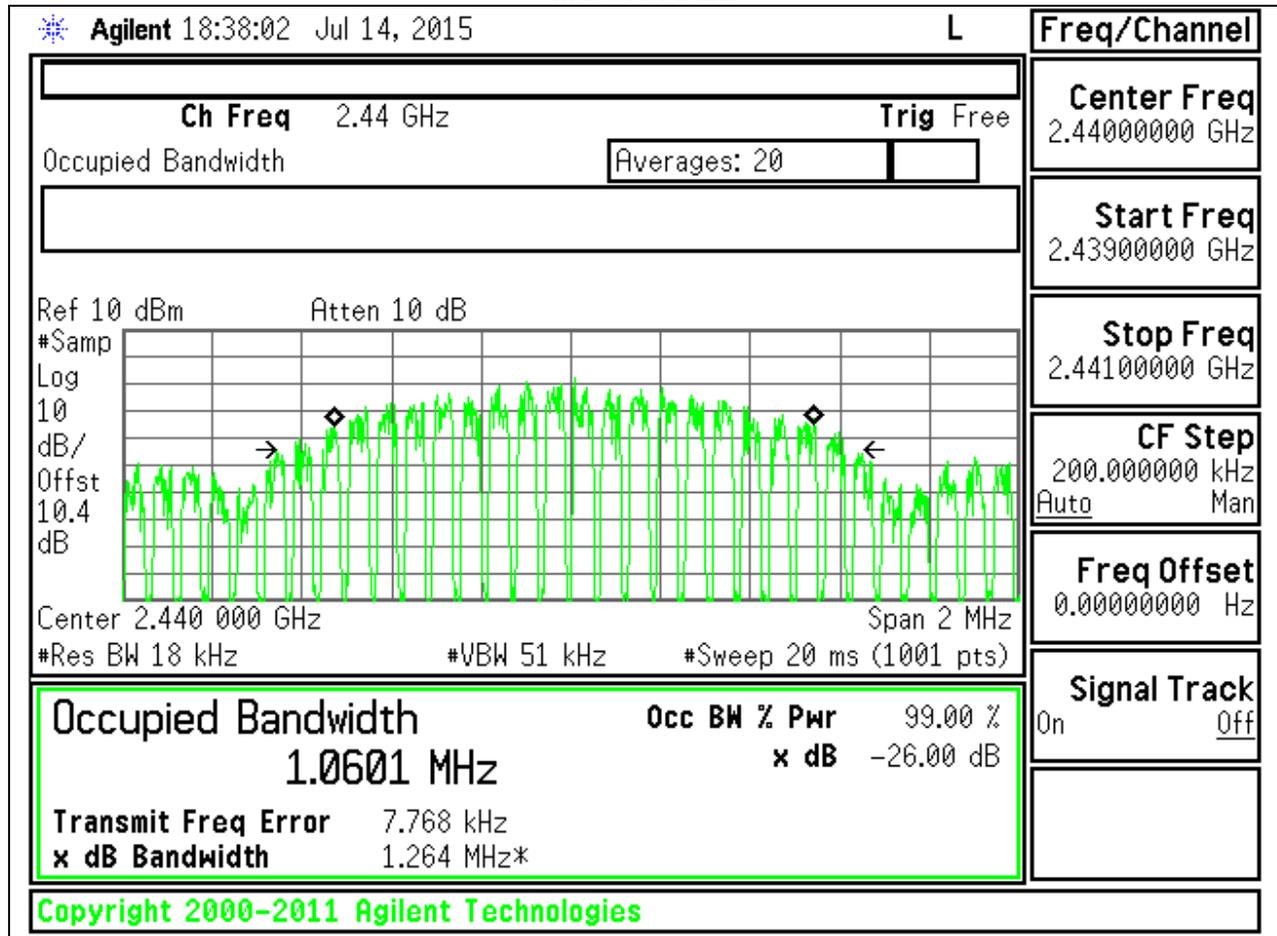
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0539
Middle	2440	1.0601
High	2480	1.0547

99% BANDWIDTH PLOTS

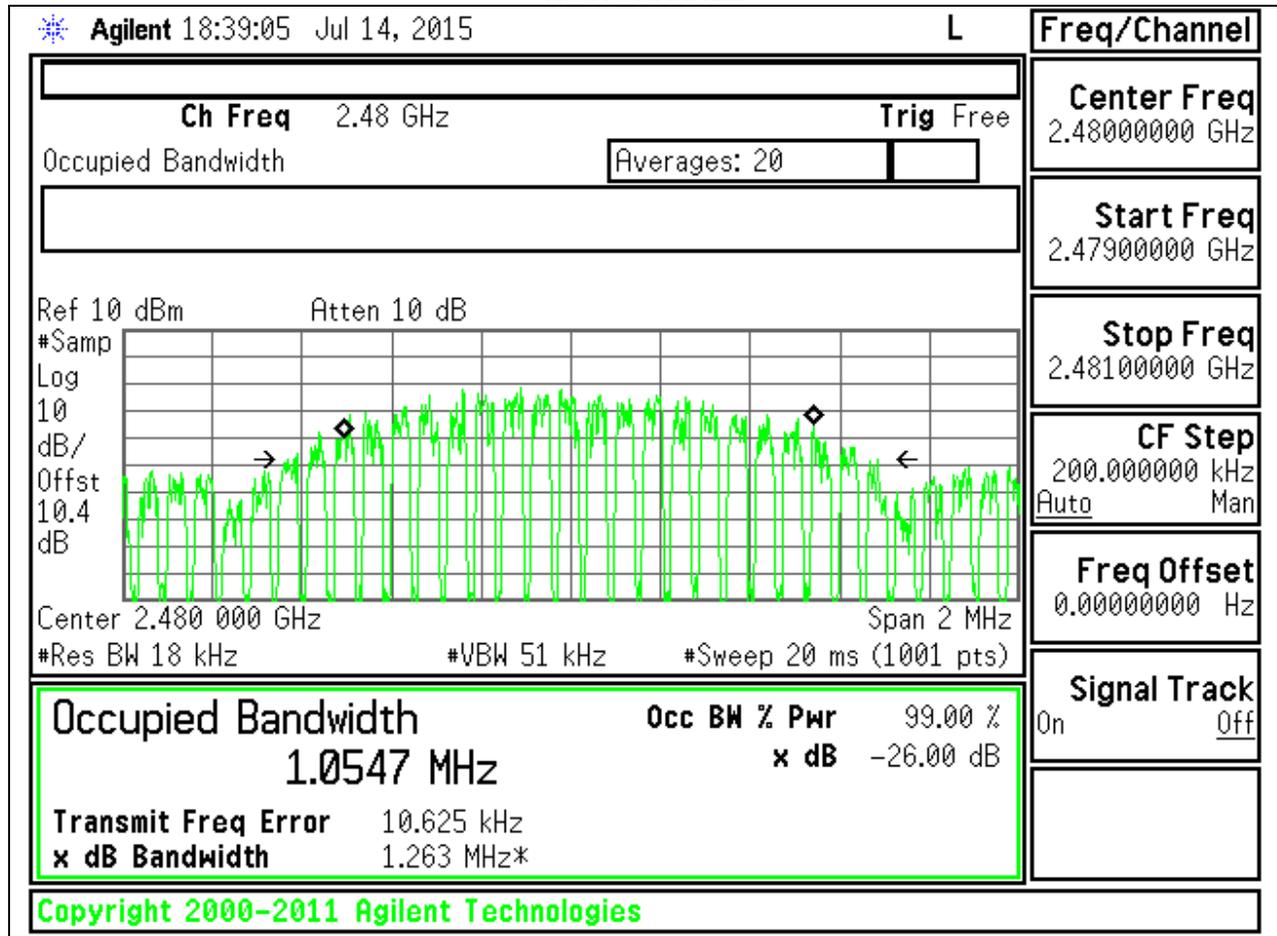
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



8.3. OUTPUT POWER

LIMITS

FCC §15.247 (b)

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

TEST PROCEDURE

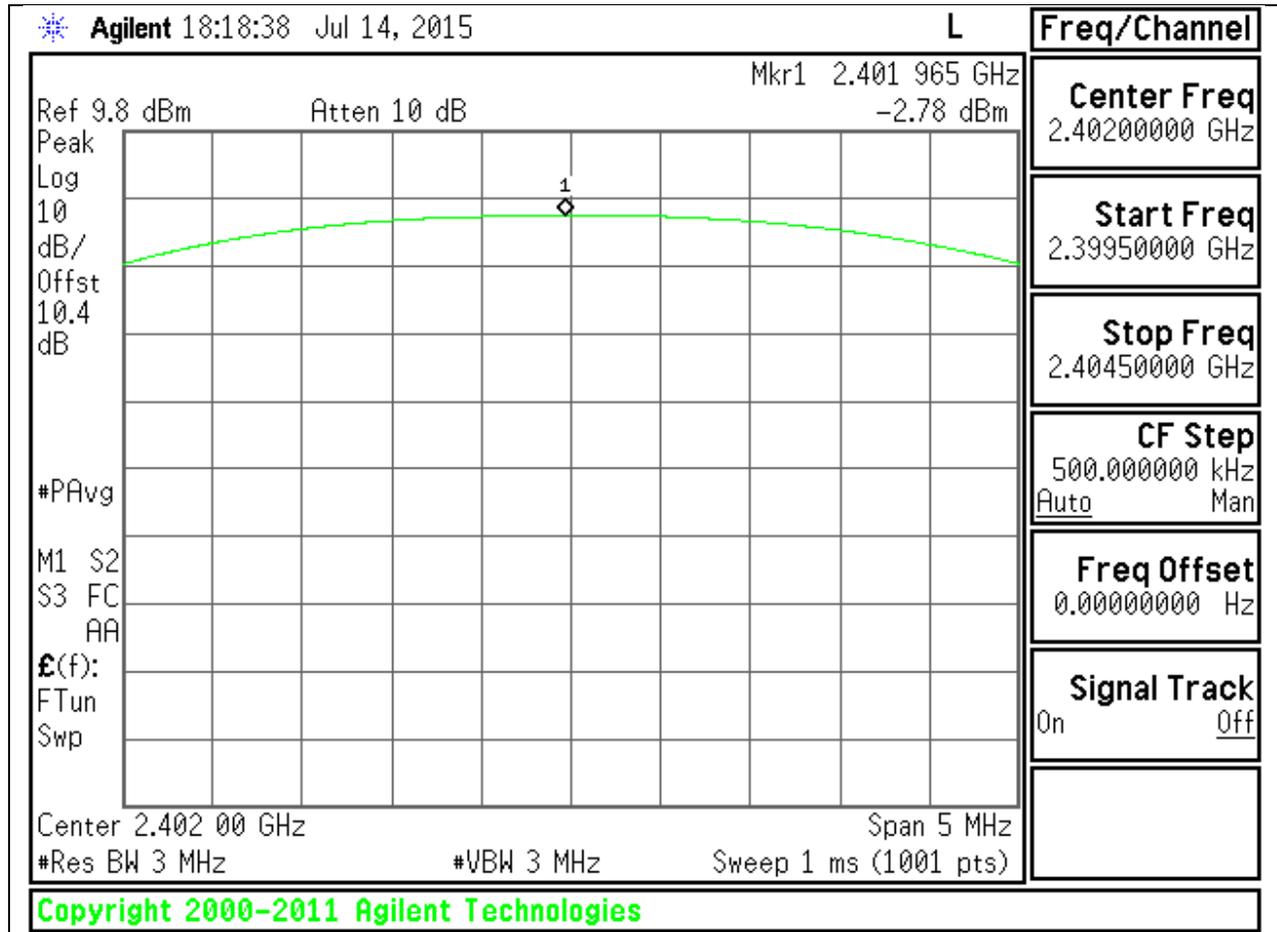
Peak power is measured using KDB558074 D01 DTS Meas Guidance v03r03 spectrum analyzer.

RESULTS

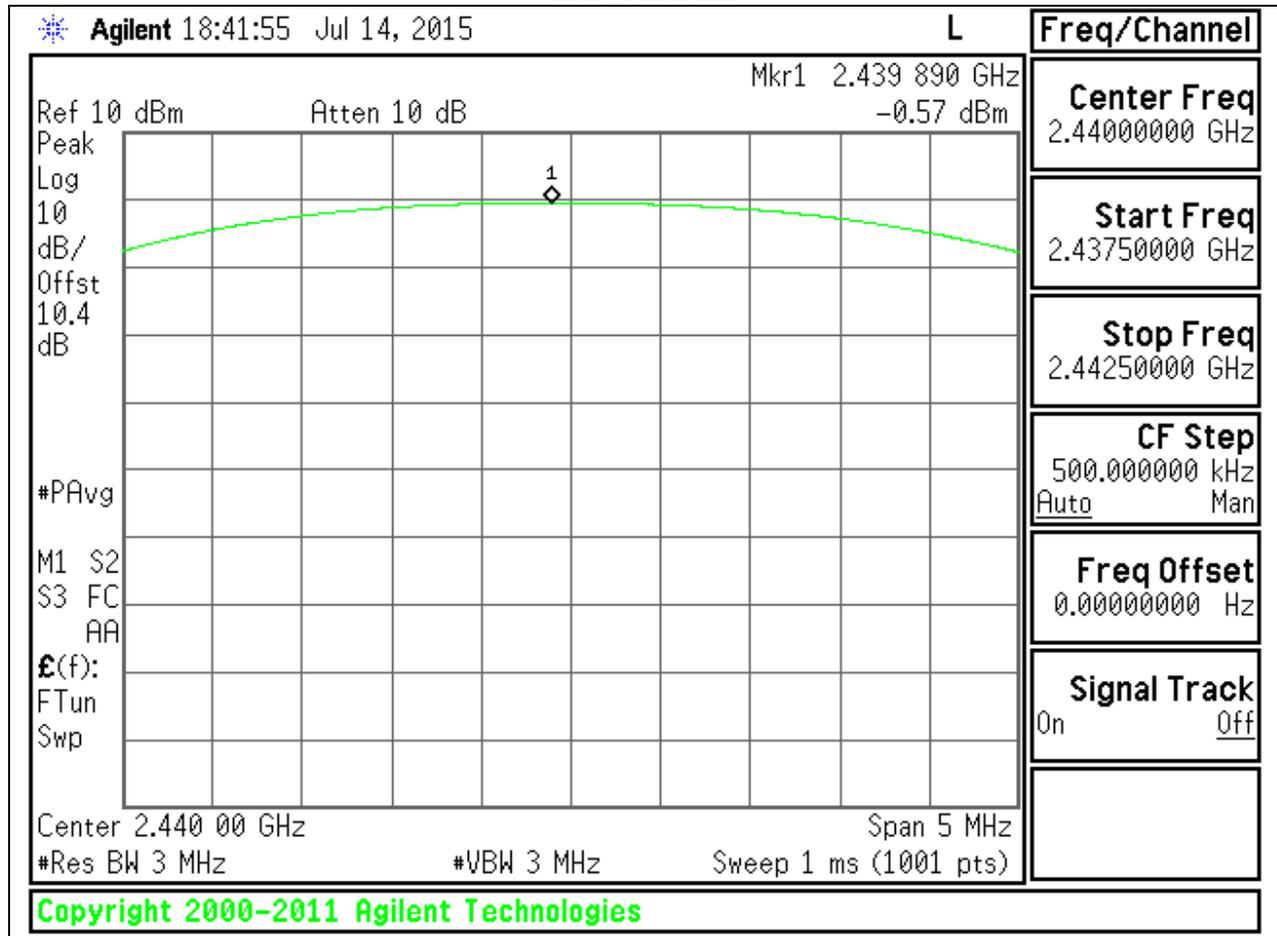
Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-2.780	30	-32.780
Middle	2440	-0.570	30	-30.570
High	2480	-2.800	30	-32.800

OUTPUT POWER PLOTS

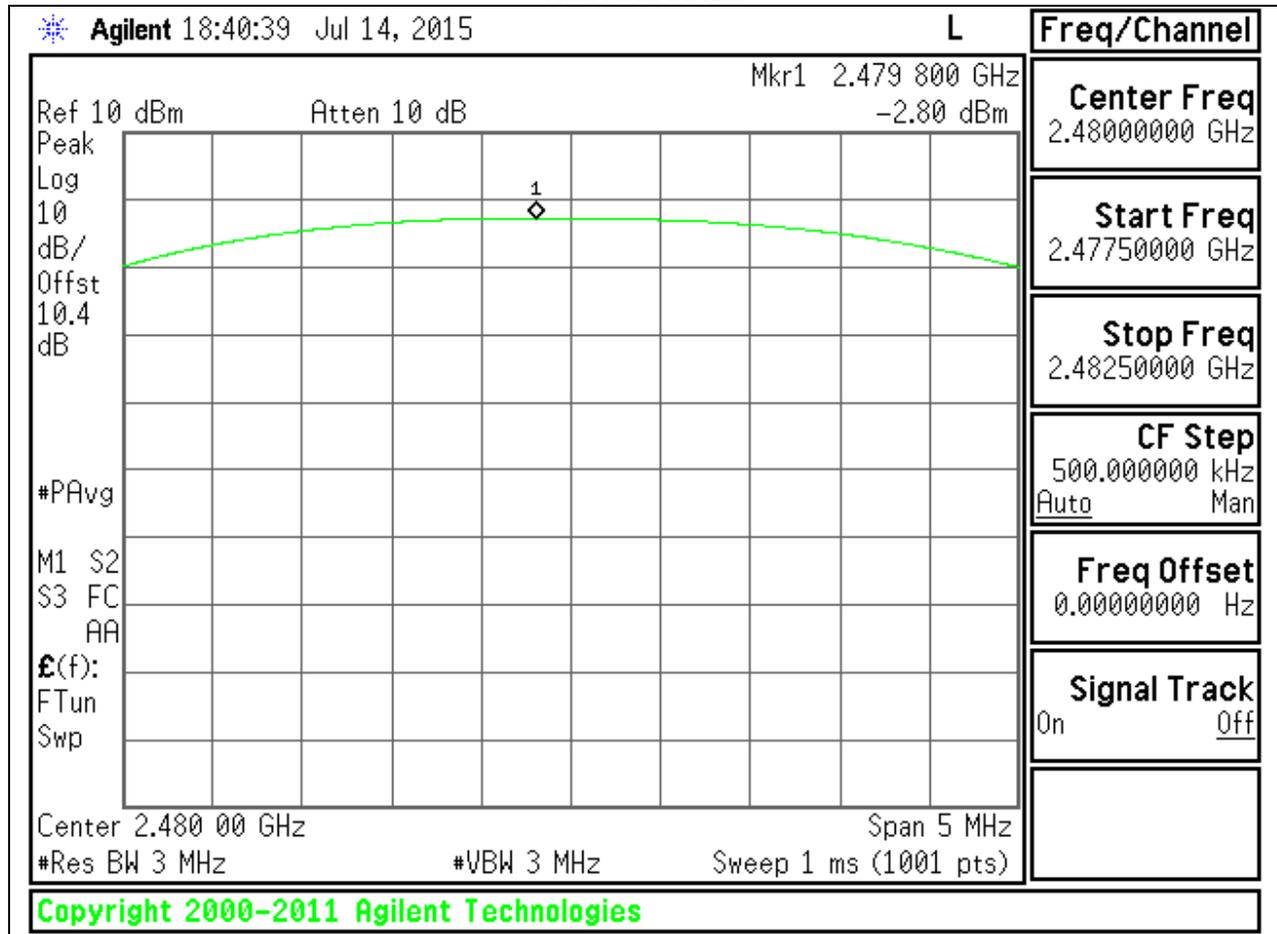
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



8.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	-3.03
Middle	2440	-0.6
High	2480	-2.83

8.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

TEST PROCEDURE

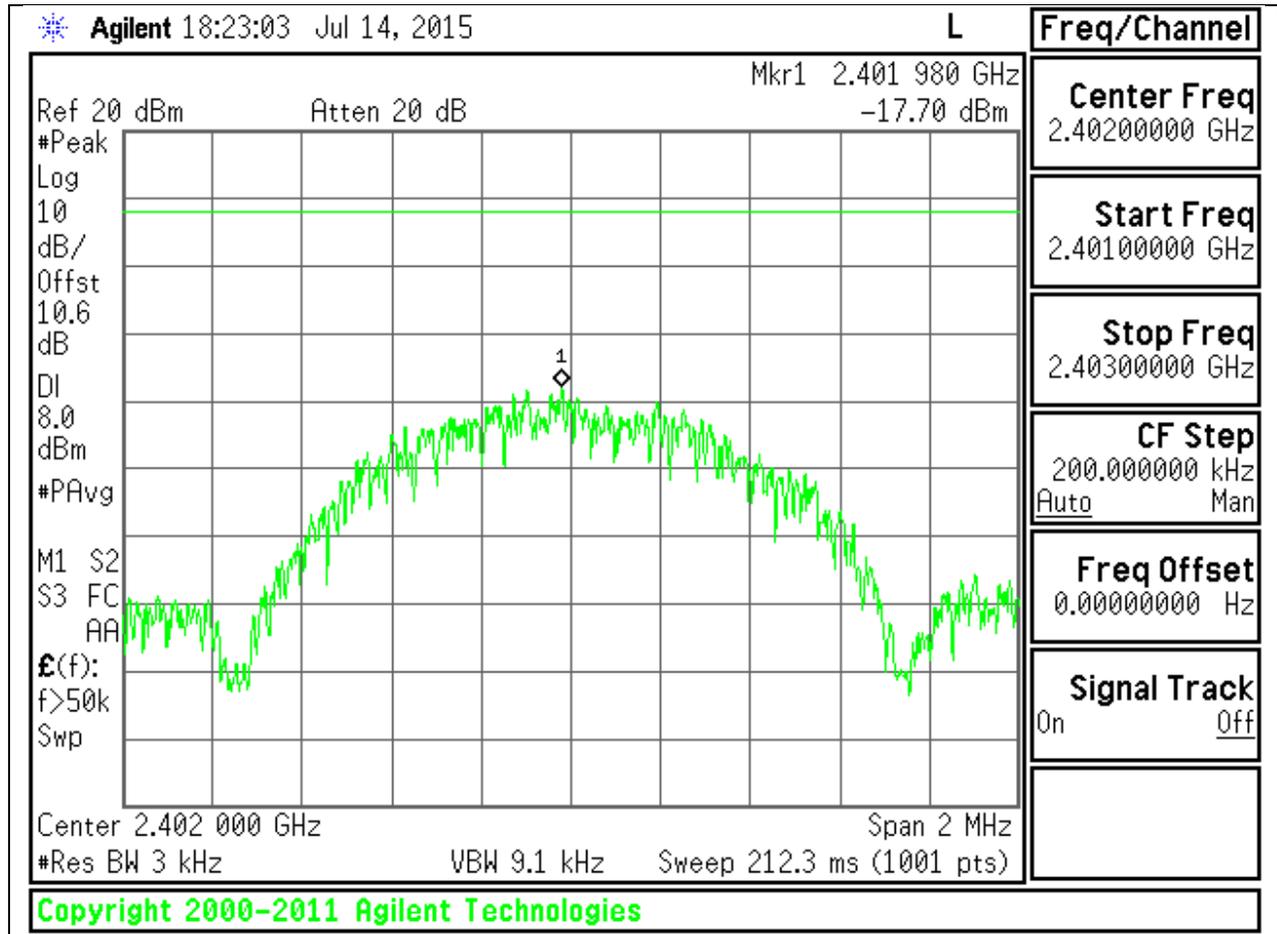
Power Spectral Density was performed utilizing the “Method PKPSD (Peak PSD)” under KDB558074 D01 DTS Meas Guidance v03r03.

RESULTS

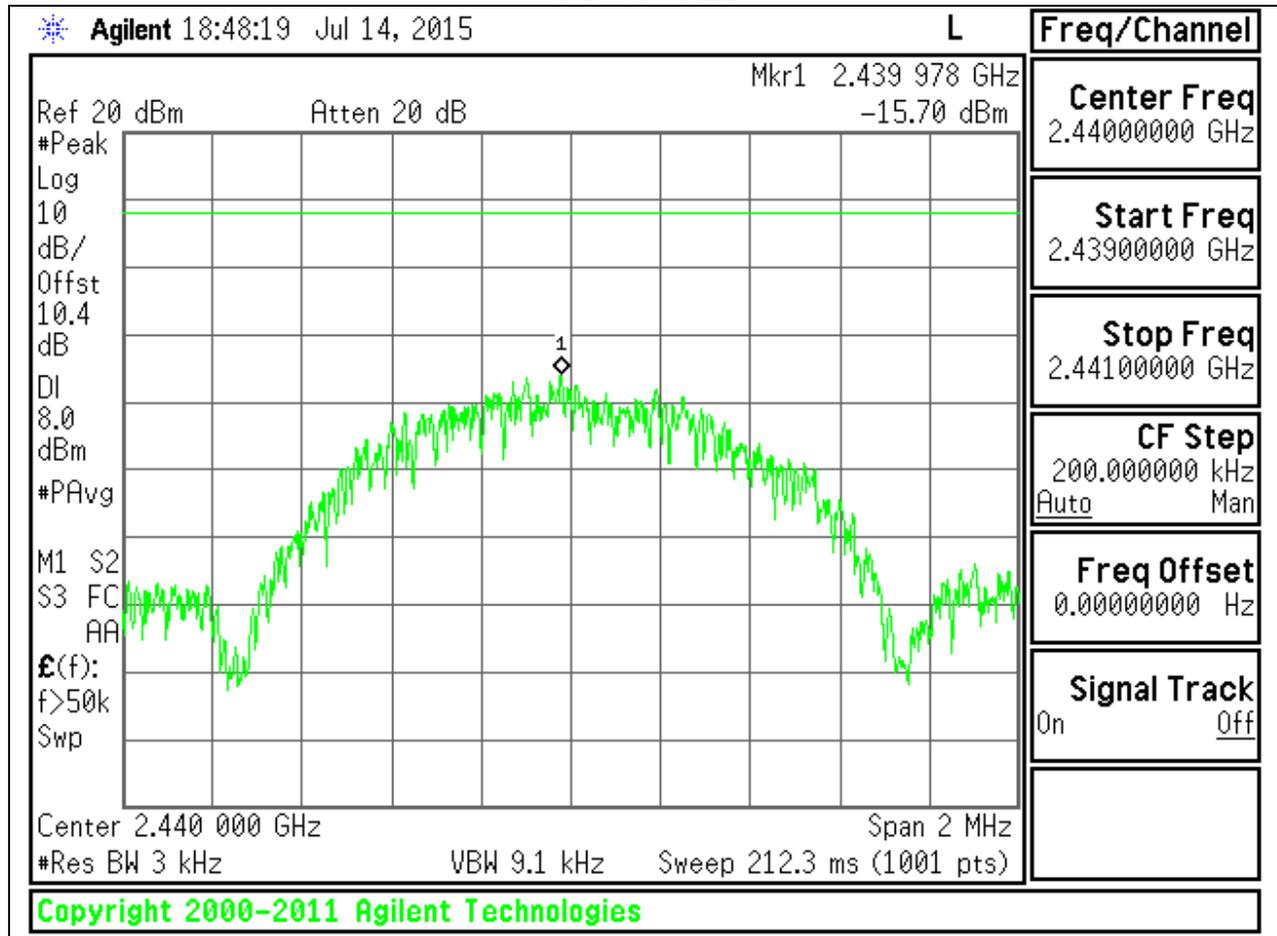
Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-17.70	8	-25.70
Middle	2440	-15.70	8	-23.70
High	2480	-17.89	8	-25.89

POWER SPECTRAL DENSITY PLOTS

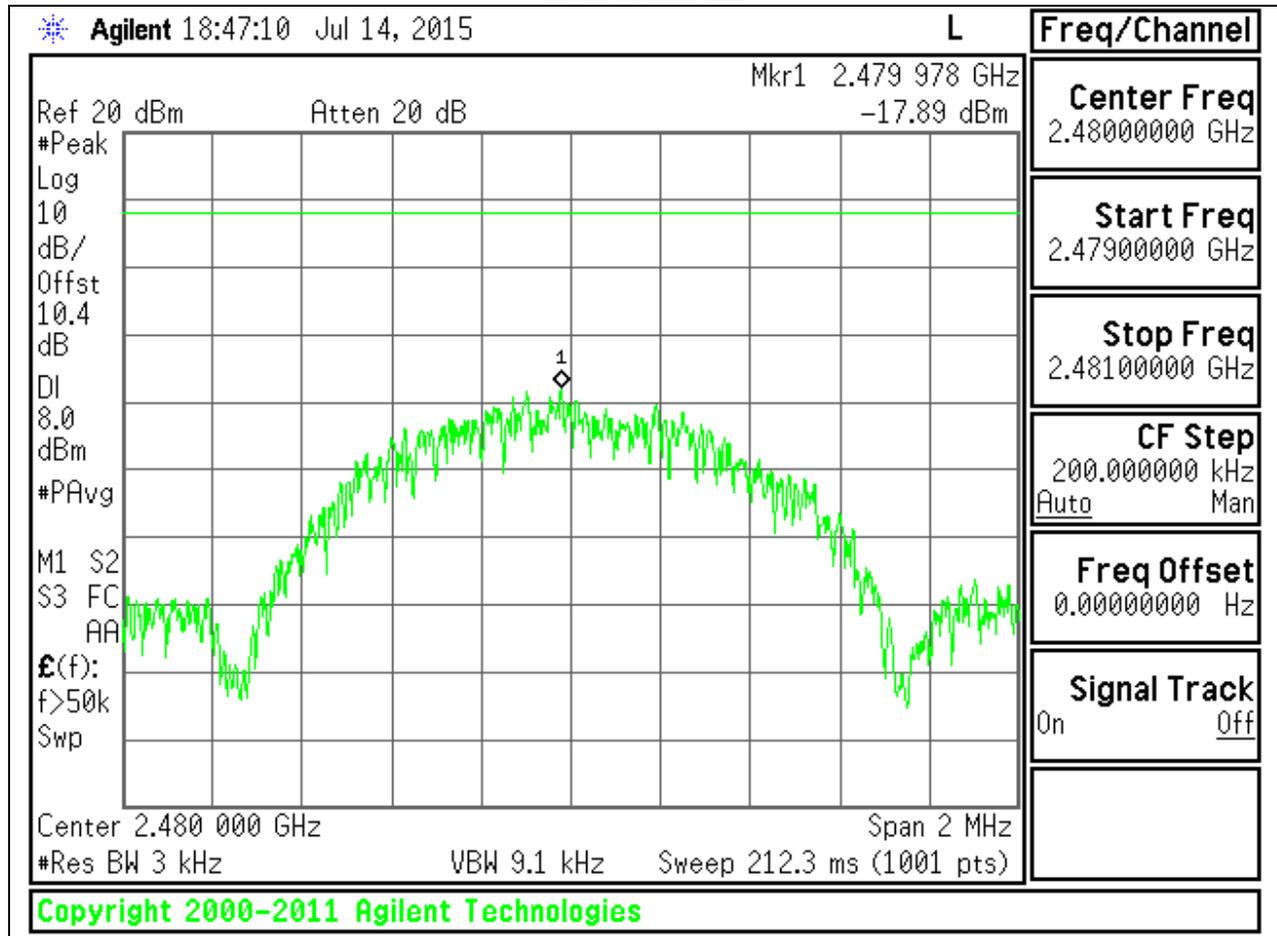
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



8.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

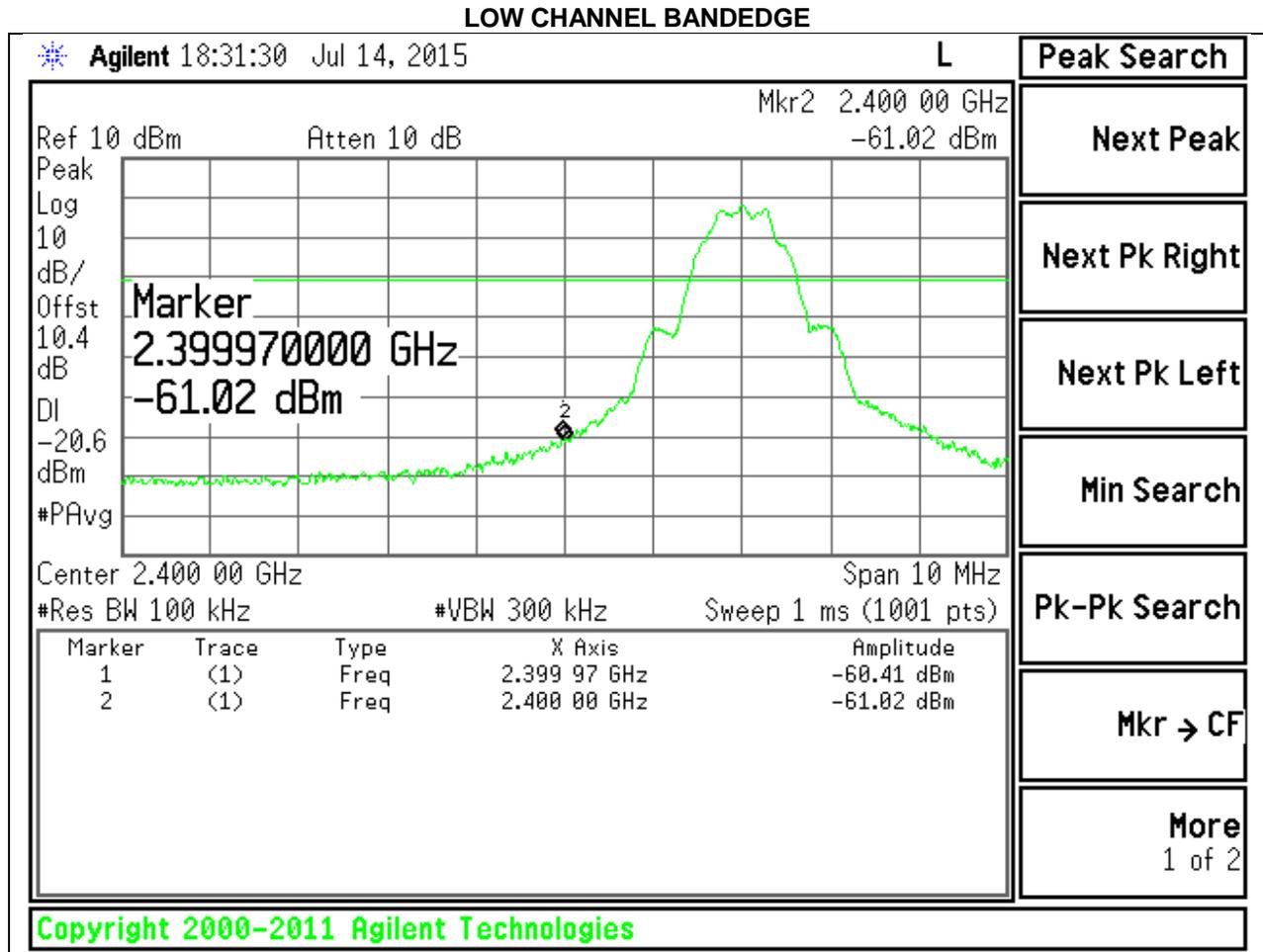
TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

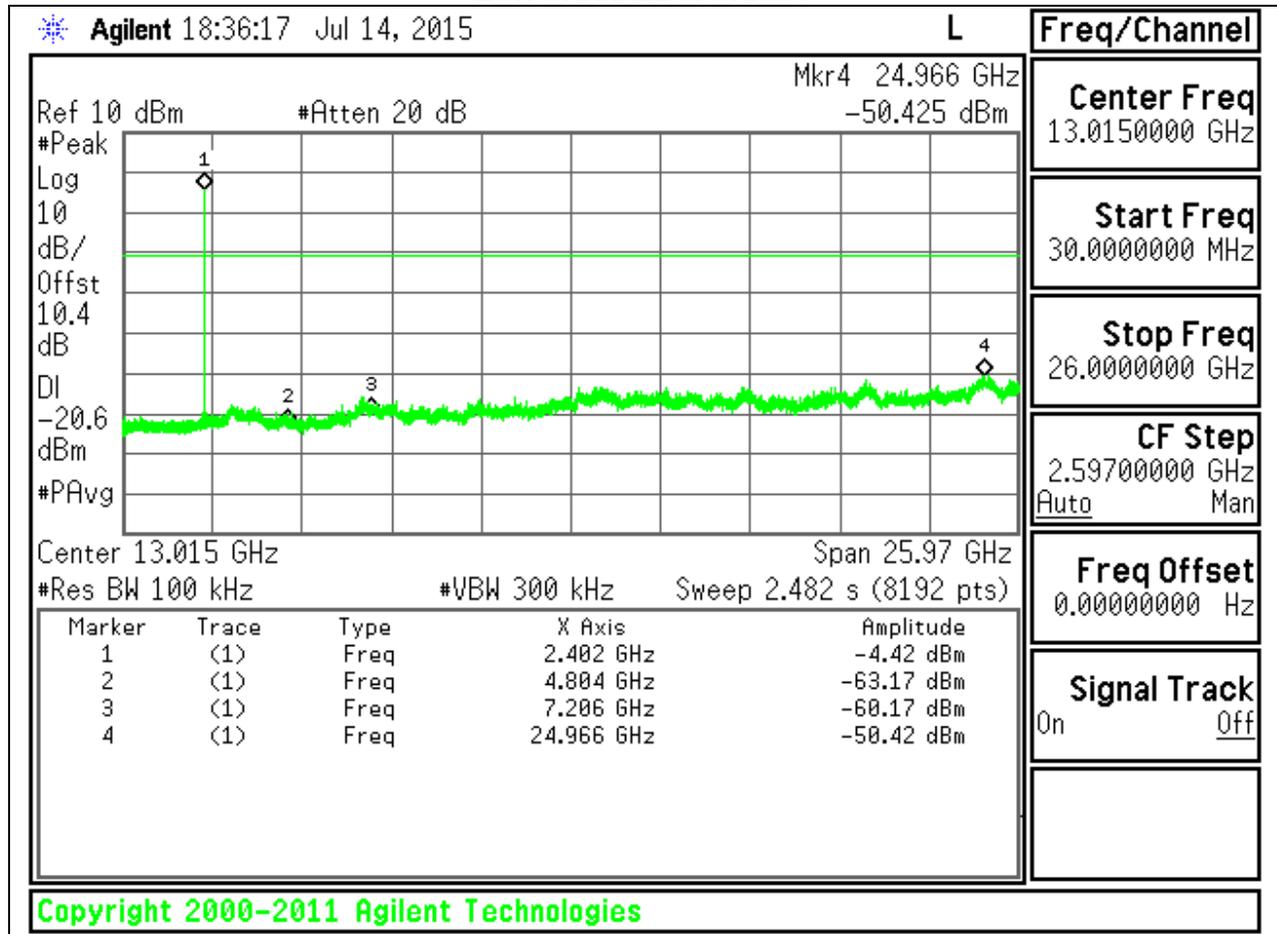
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

RESULTS

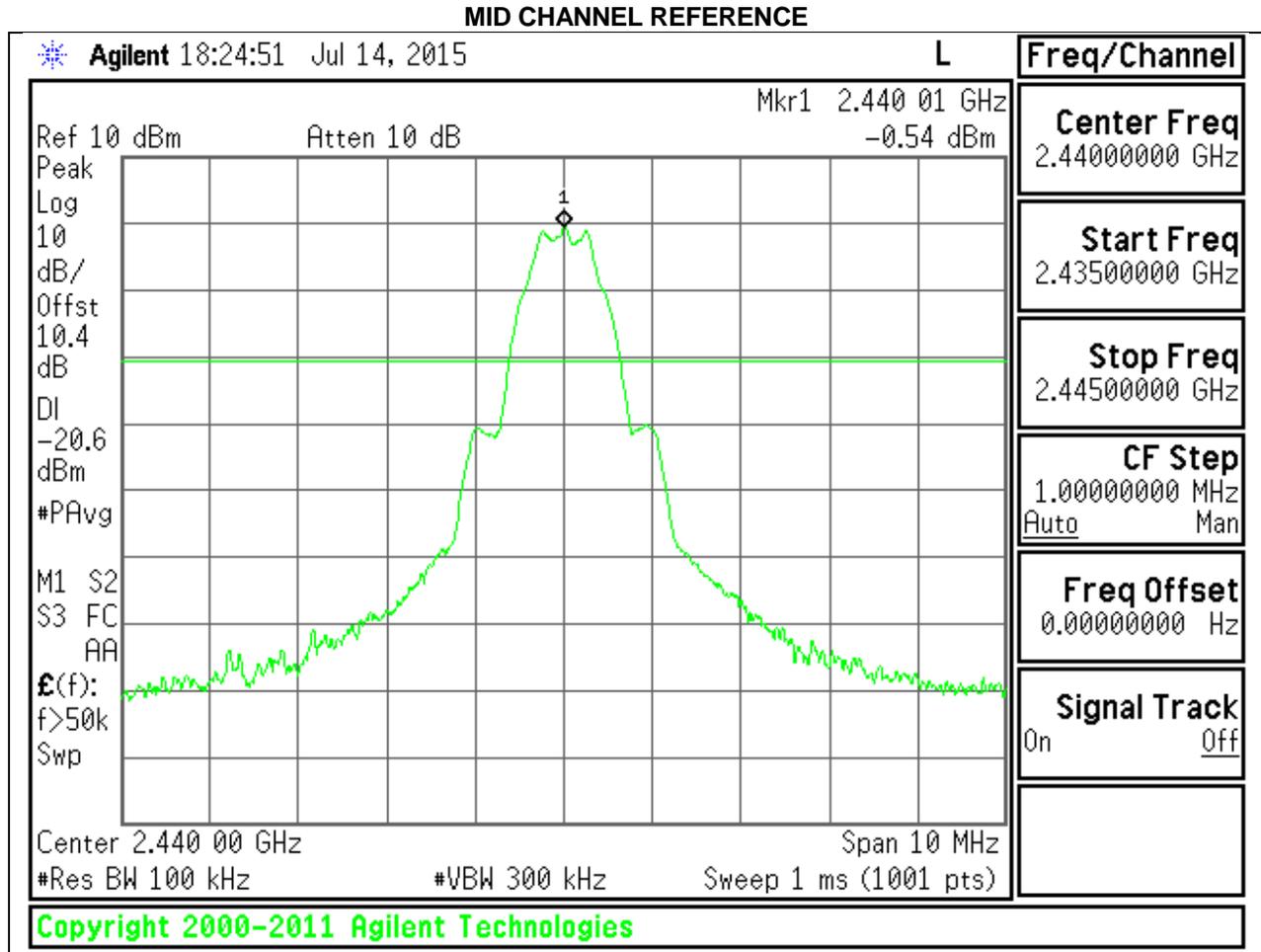
SPURIOUS EMISSIONS, LOW CHANNEL



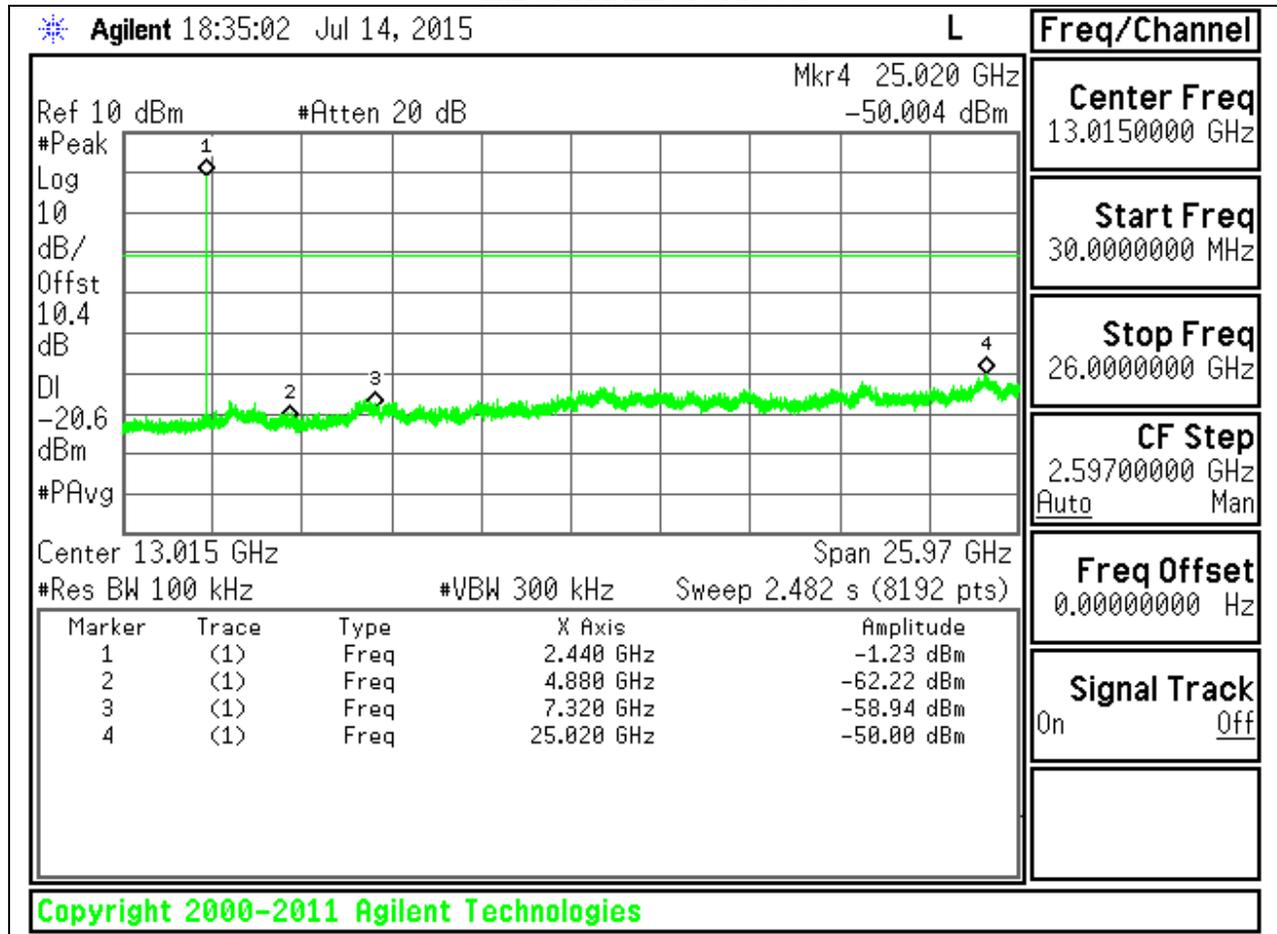
LOW CHANNEL SPURIOUS



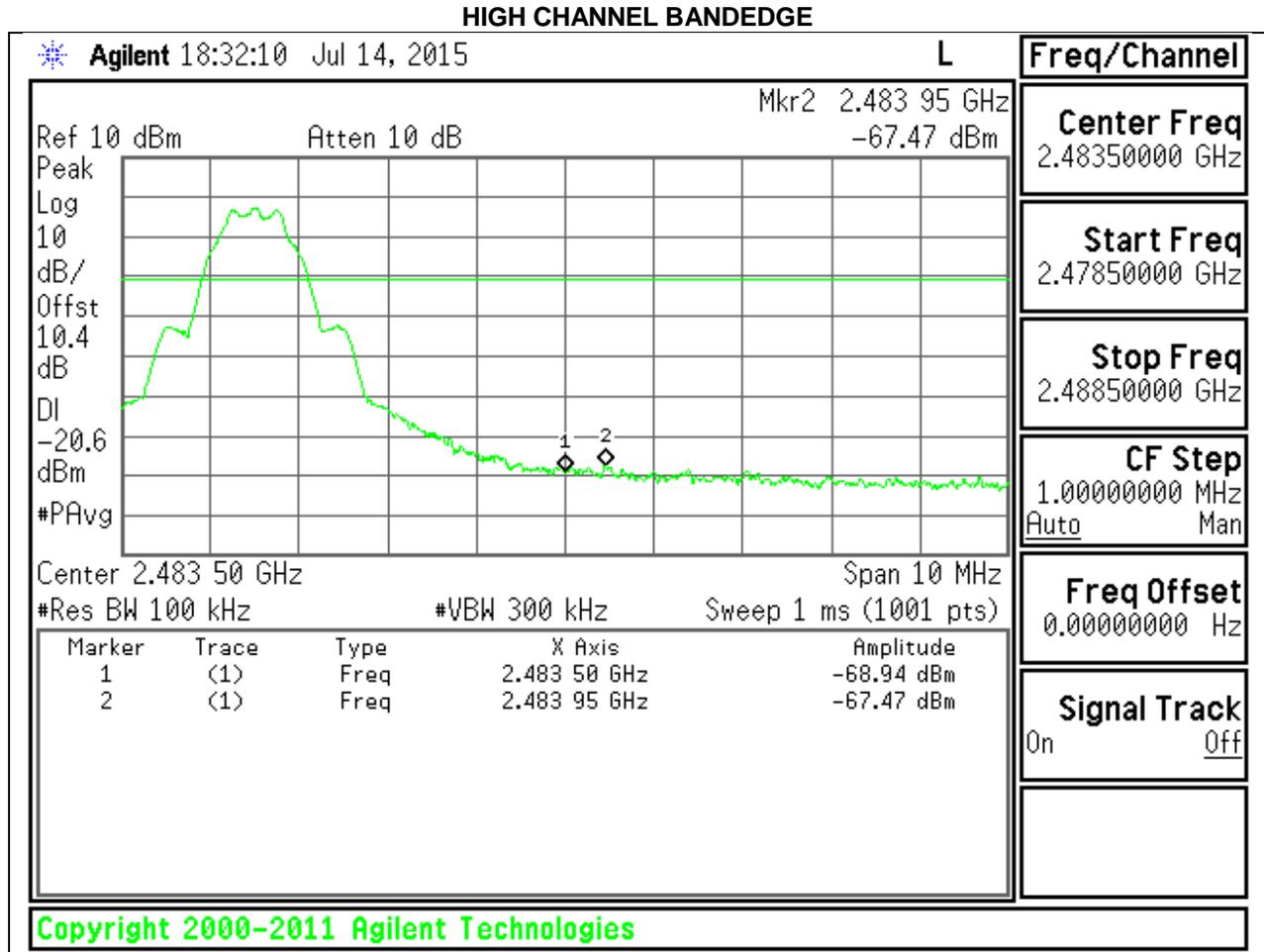
SPURIOUS EMISSIONS, MID CHANNEL



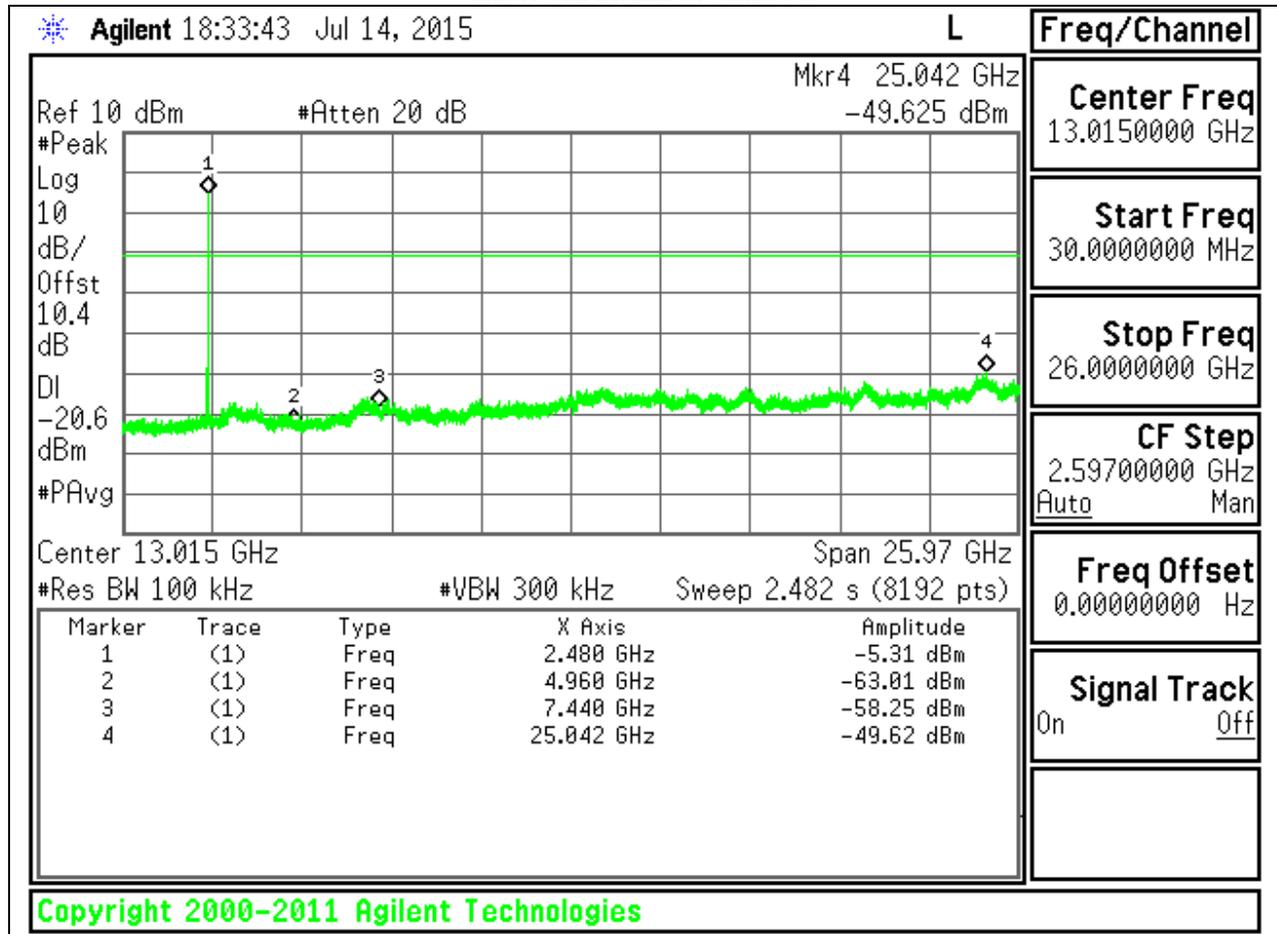
MID CHANNEL SPURIOUS



SPURIOUS EMISSIONS, HIGH CHANNEL



HIGH CHANNEL SPURIOUS



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 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 = $10 \log(1/x)$. For this sample: $DCF = 10\log(1/0.625)=2.04\text{dB}$ (Spectrum Analyzer round it up to 2.1dB)

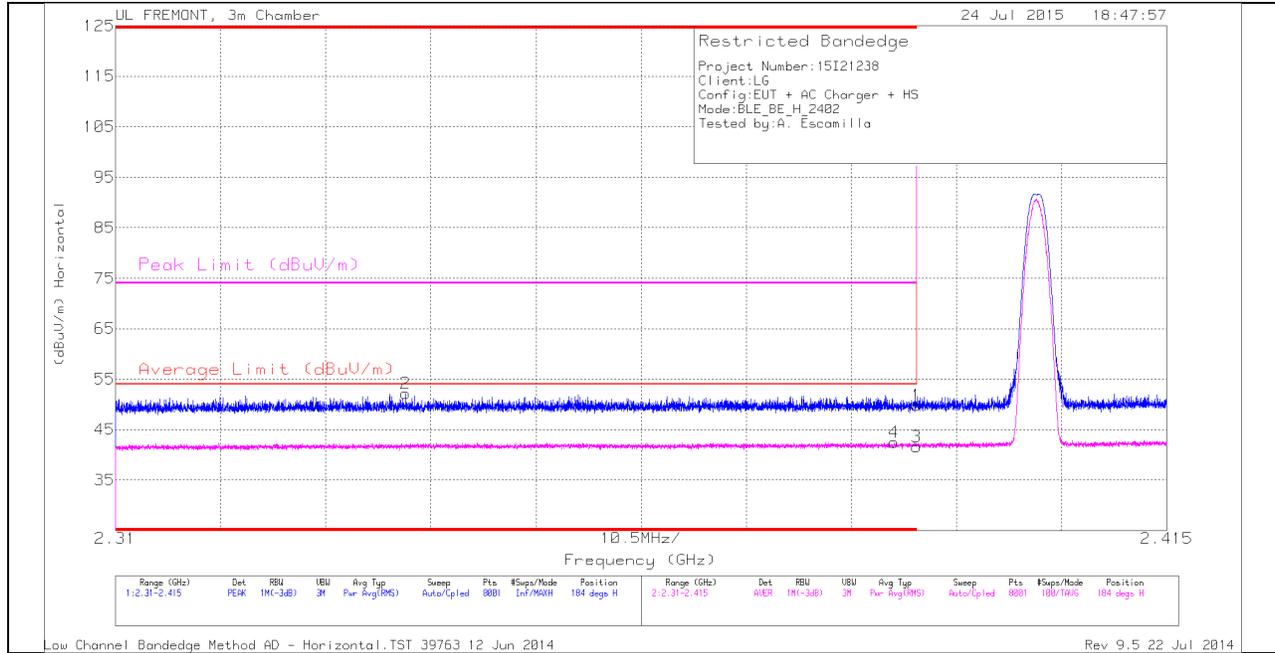
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

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 RESTRICTED BANDEDGE (LOW CHANNEL)

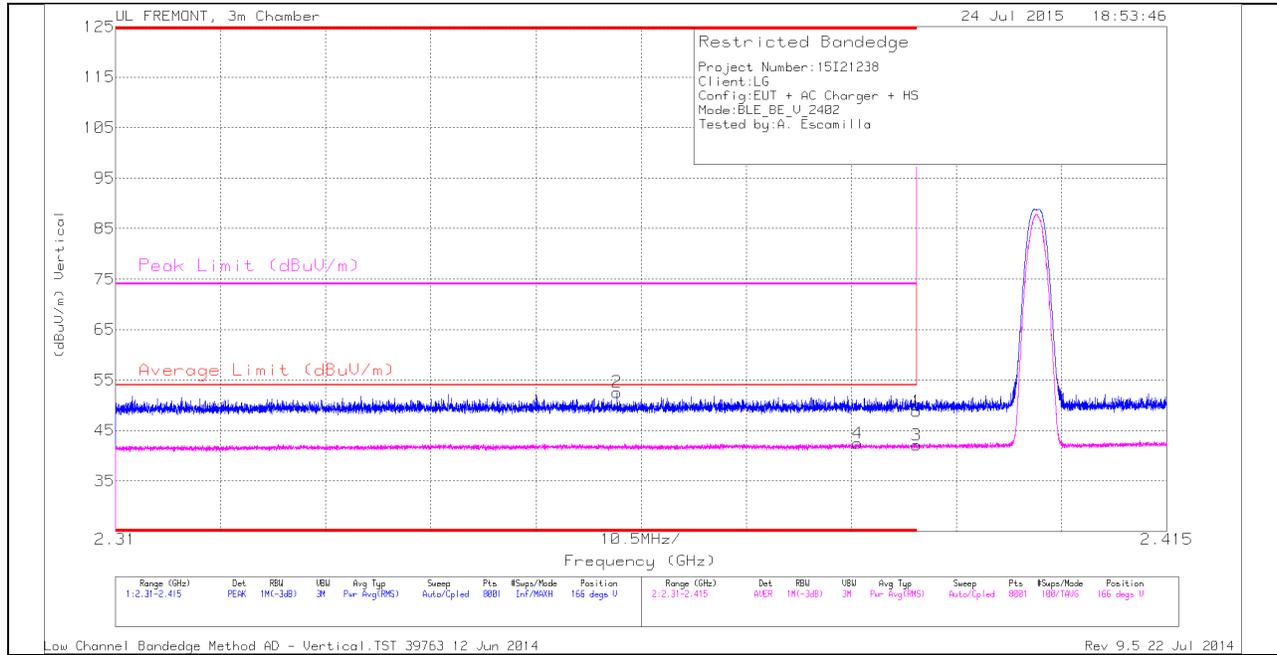
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Filter/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
2	* 2.339	42.79	PK	31.8	-22.4	0	52.19	-	-	74	-21.81	184	242	H
4	* 2.388	30.84	RMS	32	-22.4	2.04	42.48	54	-11.52	-	-	184	242	H
1	* 2.39	40.2	PK	32	-22.4	0	49.8	-	-	74	-24.2	184	242	H
3	* 2.39	29.99	RMS	32	-22.4	2.04	41.63	54	-12.37	-	-	184	242	H

VERTICAL PEAK AND AVERAGE PLOT

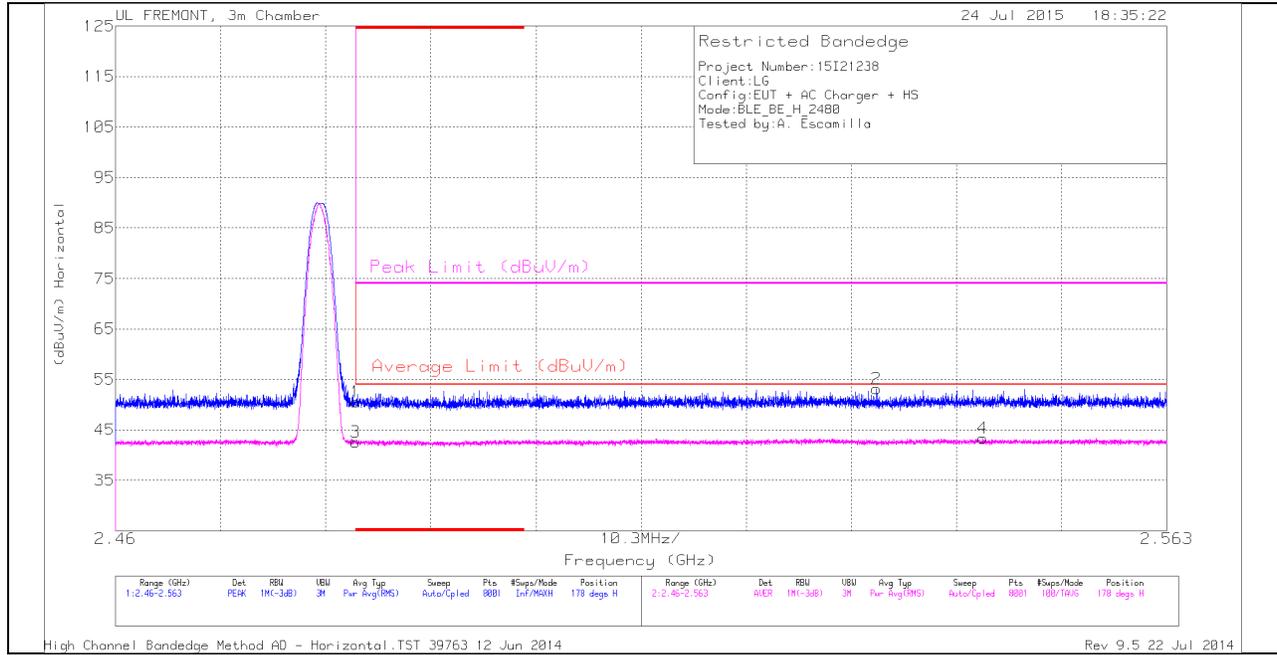


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Fit 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
2	* 2.36	43.19	PK	31.9	-22.5	0	52.59	-	-	74	-21.41	166	333	V
4	* 2.384	30.83	RMS	32	-22.4	2.04	42.47	54	-11.53	-	-	166	333	V
1	* 2.39	39.21	PK	32	-22.4	0	48.81	-	-	74	-25.19	166	333	V
3	* 2.39	30.45	RMS	32	-22.4	2.04	42.09	54	-11.91	-	-	166	333	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

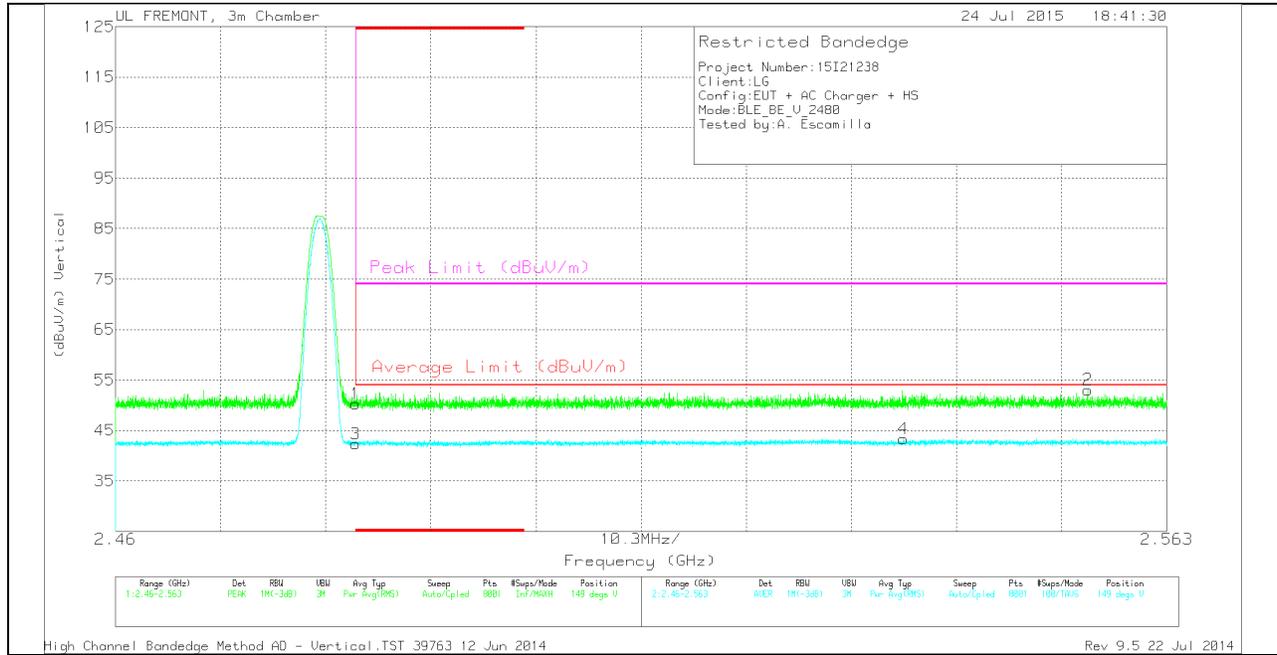
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Fit 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	40.35	PK	32.3	-22.1	0	50.55	-	-	74	-23.45	178	356	H
3	* 2.484	30.3	RMS	32.3	-22.1	2.04	42.54	54	-11.46	-	-	178	356	H
2	2.535	42.81	PK	32.4	-22.1	0	53.11	-	-	74	-20.89	178	356	H
4	2.545	30.91	RMS	32.4	-22	2.04	43.35	54	-10.65	-	-	178	356	H

VERTICAL PEAK AND AVERAGE PLOT

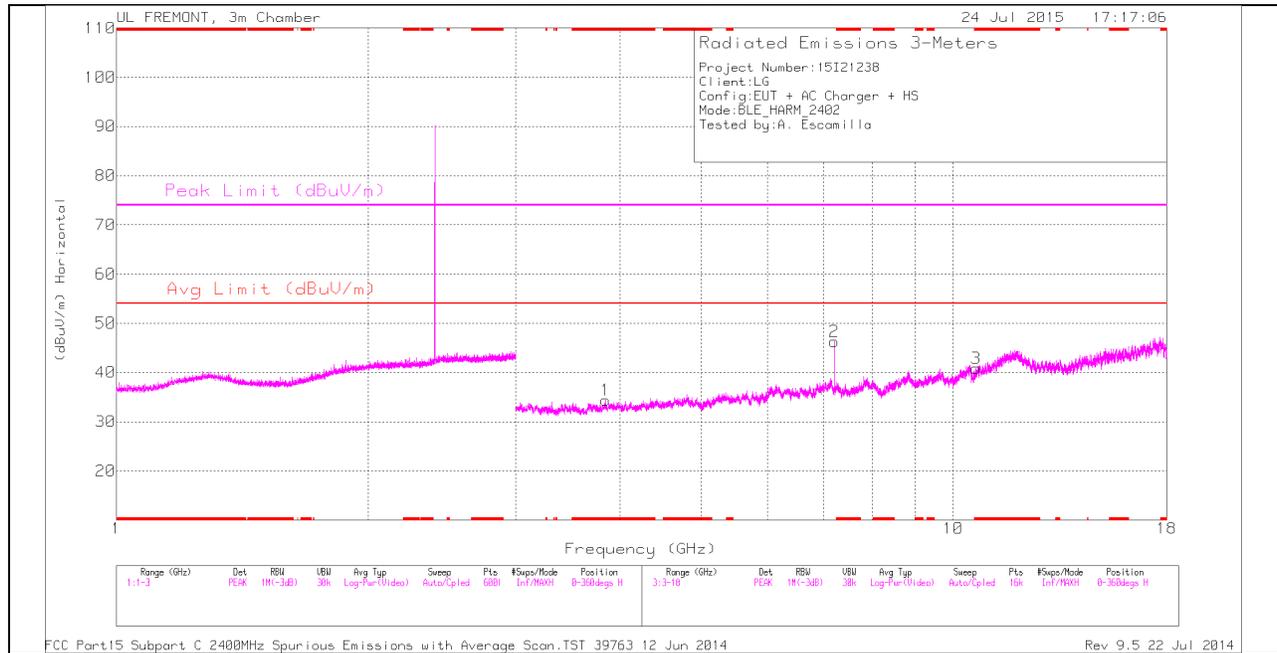


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Fit 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	40.04	PK	32.3	-22.1	0	50.24	-	-	74	-23.76	149	398	V
3	* 2.484	30.1	RMS	32.3	-22.1	2.04	42.34	54	-11.66	-	-	149	398	V
4	2.537	30.95	RMS	32.4	-22	2.04	43.39	54	-10.61	-	-	149	398	V
2	2.555	42.68	PK	32.4	-22	0	53.08	-	-	74	-20.92	149	398	V

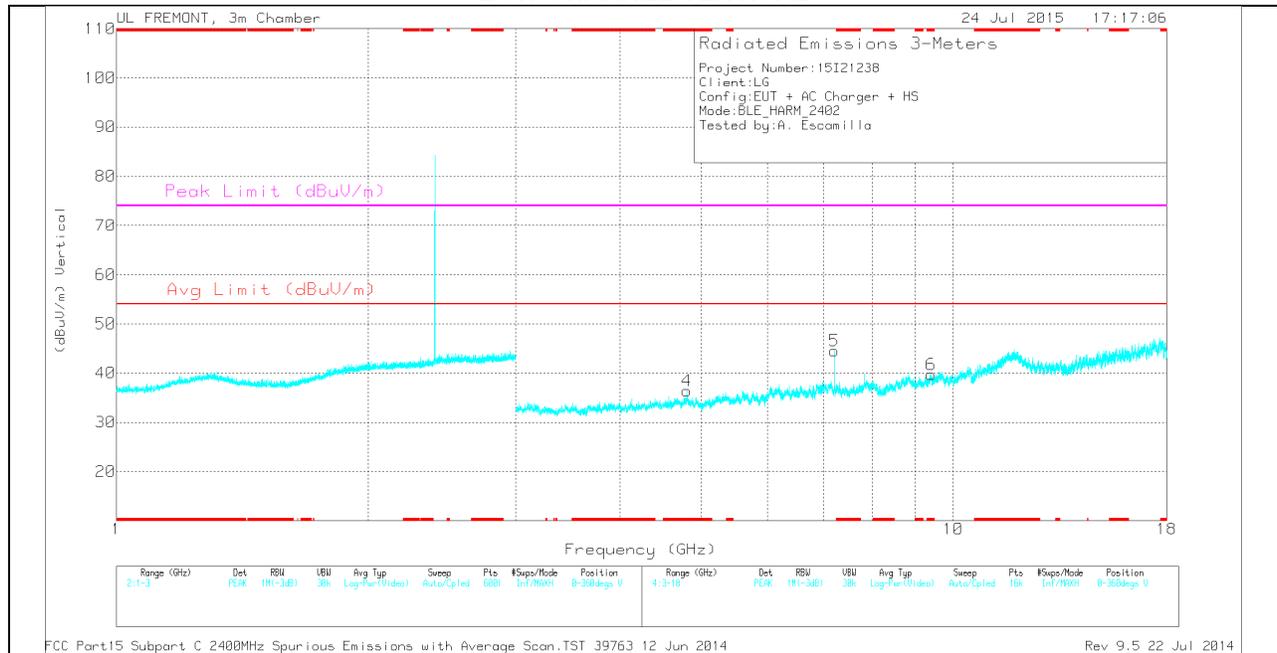
HARMONICS AND SPURIOUS EMISSIONS

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

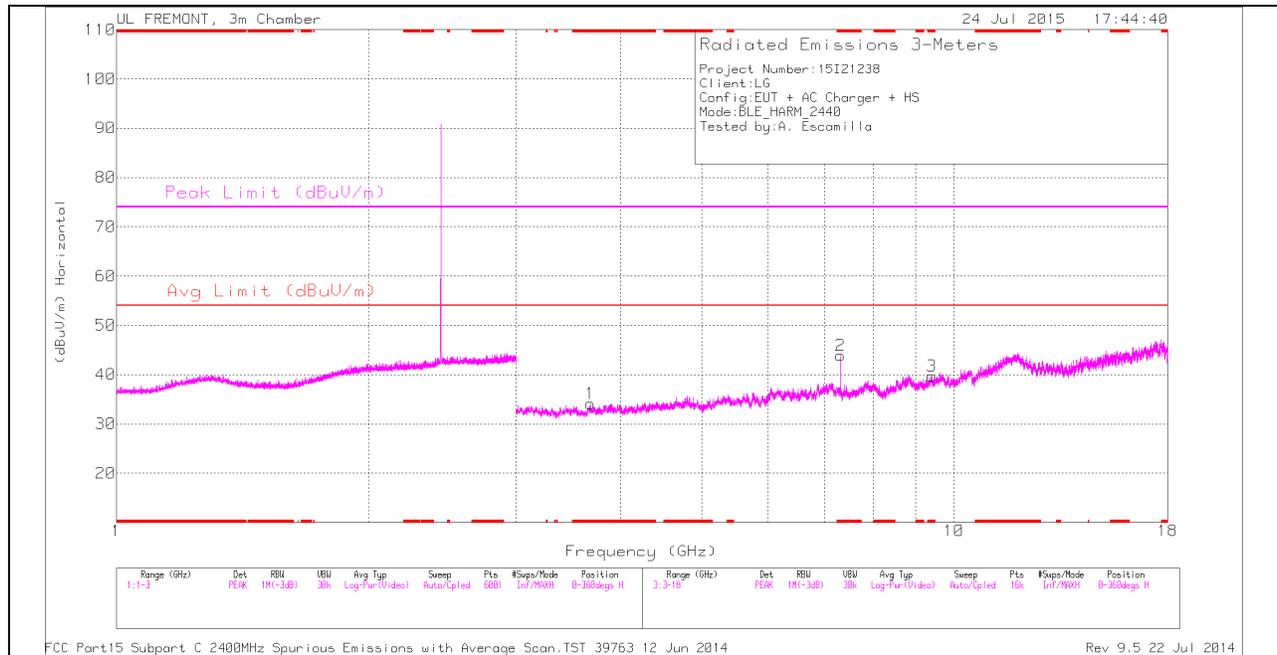
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.845	31.72	PK	33.1	-30.4	0	34.42	-	-	74	-39.58	0-360	100	H
3	* 10.643	26.76	PK	37.7	-23.6	0	40.86	-	-	74	-33.14	0-360	100	H
4	* 4.804	31.87	PK	34	-29.4	0	36.47	-	-	74	-37.53	0-360	100	V
6	* 9.406	27.38	PK	36.4	-24.1	0	39.68	-	-	74	-34.32	0-360	200	V
2	7.205	39.12	PK	35.6	-28.4	0	46.32	-	-	-	-	0-360	100	H
5	7.205	37.3	PK	35.6	-28.4	0	44.5	-	-	-	-	0-360	100	V

PK - Peak detector

RADIATED EMISSIONS

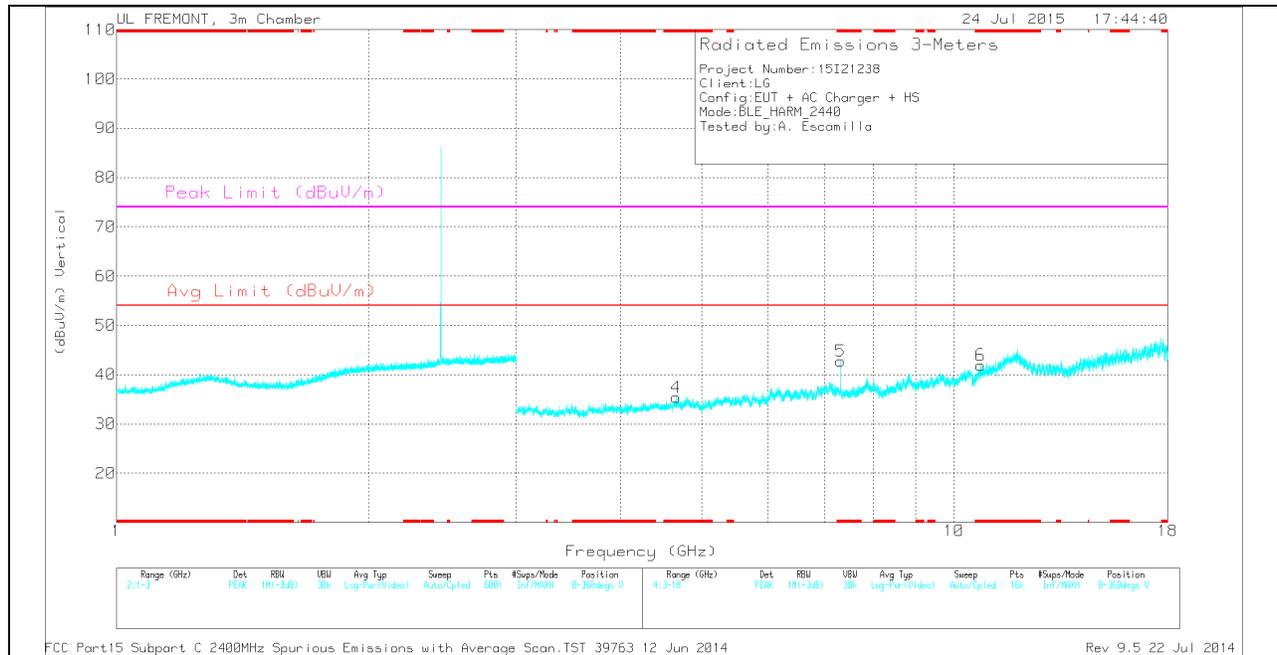
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.846	40.58	PK2	33.1	-30.5	0	43.18	-	-	74	-30.82	14	178	H
* 3.845	29.11	MAV1	33.1	-30.4	2.04	33.85	54	-20.15	-	-	14	178	H
* 10.643	35.86	PK2	37.7	-23.6	0	49.96	-	-	74	-24.04	96	206	H
* 10.645	24.6	MAV1	37.7	-23.6	2.04	40.74	54	-13.26	-	-	96	206	H
* 4.804	40.74	PK2	34	-29.4	0	45.34	-	-	74	-28.66	142	193	V
* 4.804	29.68	MAV1	34	-29.4	2.04	36.32	54	-17.68	-	-	142	193	V
* 9.407	36.47	PK2	36.4	-24.1	0	48.77	-	-	74	-25.23	140	226	V
* 9.405	25.29	MAV1	36.4	-24	2.04	39.73	54	-14.27	-	-	140	226	V
7.205	31.4	MAV1	35.6	-28.4	2.04	40.64	-	-	-	-	110	158	V
7.206	42.02	PK2	35.6	-28.4	0	49.22	-	-	-	-	61	191	H
7.207	32.02	MAV1	35.6	-28.4	2.04	41.26	-	-	-	-	61	191	H
7.207	42.47	PK2	35.6	-28.4	0	49.67	-	-	-	-	110	158	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

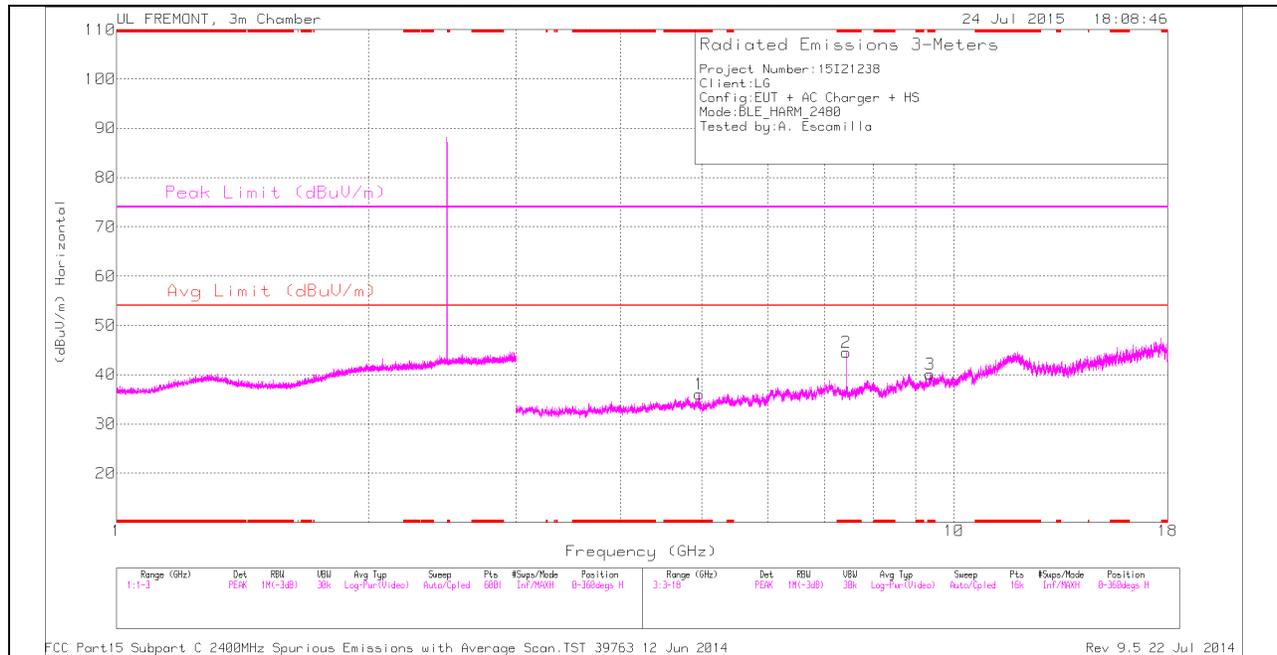
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.682	31.15	PK	33	-30	0	34.15	-	-	74	-39.85	0-360	100	H
2	* 7.32	35.5	PK	35.6	-27.2	0	43.9	-	-	74	-30.1	0-360	100	H
3	* 9.412	27.51	PK	36.4	-24.2	0	39.71	-	-	74	-34.29	0-360	100	H
4	* 4.656	31.39	PK	34	-30	0	35.39	-	-	74	-38.61	0-360	100	V
5	* 7.321	34.3	PK	35.6	-27.1	0	42.8	-	-	74	-31.2	0-360	100	V
6	* 10.767	27.13	PK	37.9	-23.1	0	41.93	-	-	74	-32.07	0-360	100	V

PK - Peak detector

RADIATED EMISSIONS

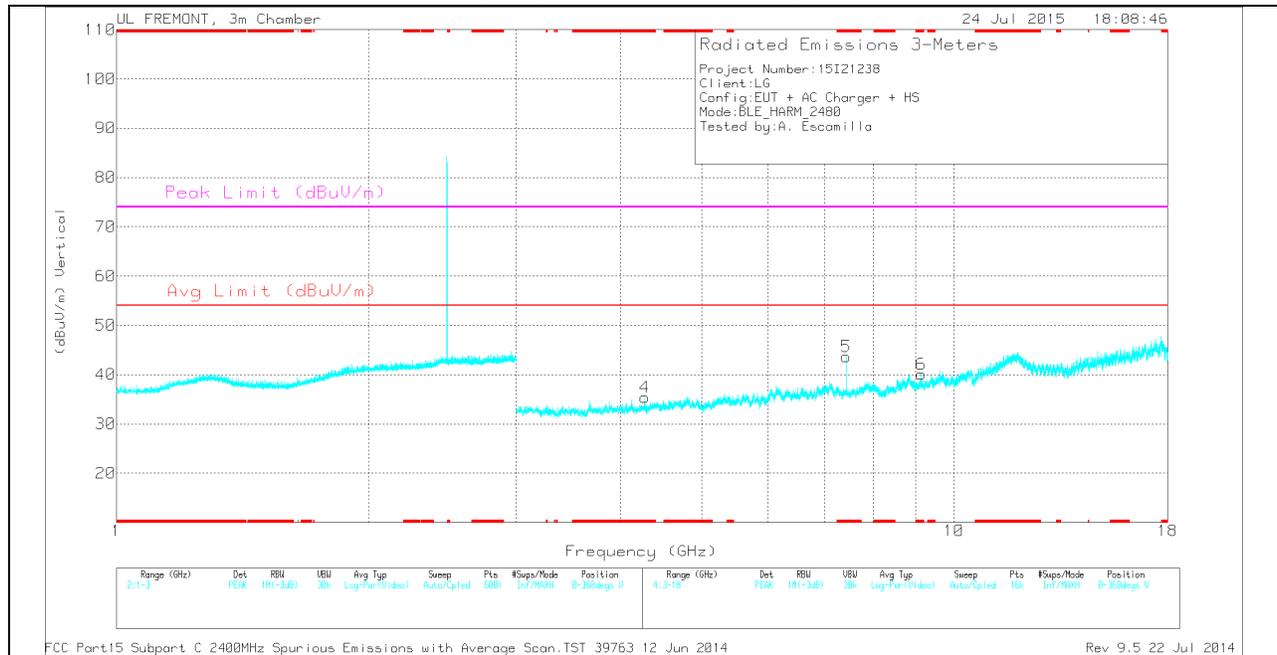
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.683	40.59	PK2	33	-30.1	0	43.49	-	-	74	-30.51	19	181	H
* 3.683	28.91	MAV1	33	-30	2.04	33.95	54	-20.05	-	-	19	181	H
* 7.319	42.56	PK2	35.6	-27.2	0	50.96	-	-	74	-23.04	306	109	H
* 7.319	32.65	MAV1	35.6	-27.2	2.04	43.09	54	-10.91	-	-	306	109	H
* 9.411	37.15	PK2	36.4	-24.2	0	49.35	-	-	74	-24.65	341	194	H
* 9.414	25.21	MAV1	36.4	-24.2	2.04	39.45	54	-14.55	-	-	341	194	H
* 4.655	40.05	PK2	34	-30	0	44.05	-	-	74	-29.95	315	175	V
* 4.654	28.86	MAV1	34	-30	2.04	34.9	54	-19.1	-	-	315	175	V
* 7.32	41.76	PK2	35.6	-27.2	0	50.16	-	-	74	-23.84	234	103	V
* 7.319	31.8	MAV1	35.6	-27.2	2.04	42.24	54	-11.76	-	-	234	103	V
* 10.765	37.29	PK2	37.9	-23.1	0	52.09	-	-	74	-21.91	217	125	V
* 10.769	25.12	MAV1	37.9	-23.1	2.04	41.96	54	-12.04	-	-	217	125	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 T119 (dB/m)	Amp/Cb/Ftr /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	* 4.96	32.37	PK	34	-30.3	0	36.07	-	-	74	-37.93	0-360	100	H
2	* 7.441	36.41	PK	35.7	-27.6	0	44.51	-	-	74	-29.49	0-360	100	H
3	* 9.357	28.11	PK	36.4	-24.4	0	40.11	-	-	74	-33.89	0-360	200	H
4	* 4.271	32.38	PK	33.4	-30.4	0	35.38	-	-	74	-38.62	0-360	200	V
5	* 7.44	35.45	PK	35.7	-27.5	0	43.65	-	-	74	-30.35	0-360	100	V
6	* 9.136	28.46	PK	36.2	-24.6	0	40.06	-	-	74	-33.94	0-360	100	V

PK - Peak detector

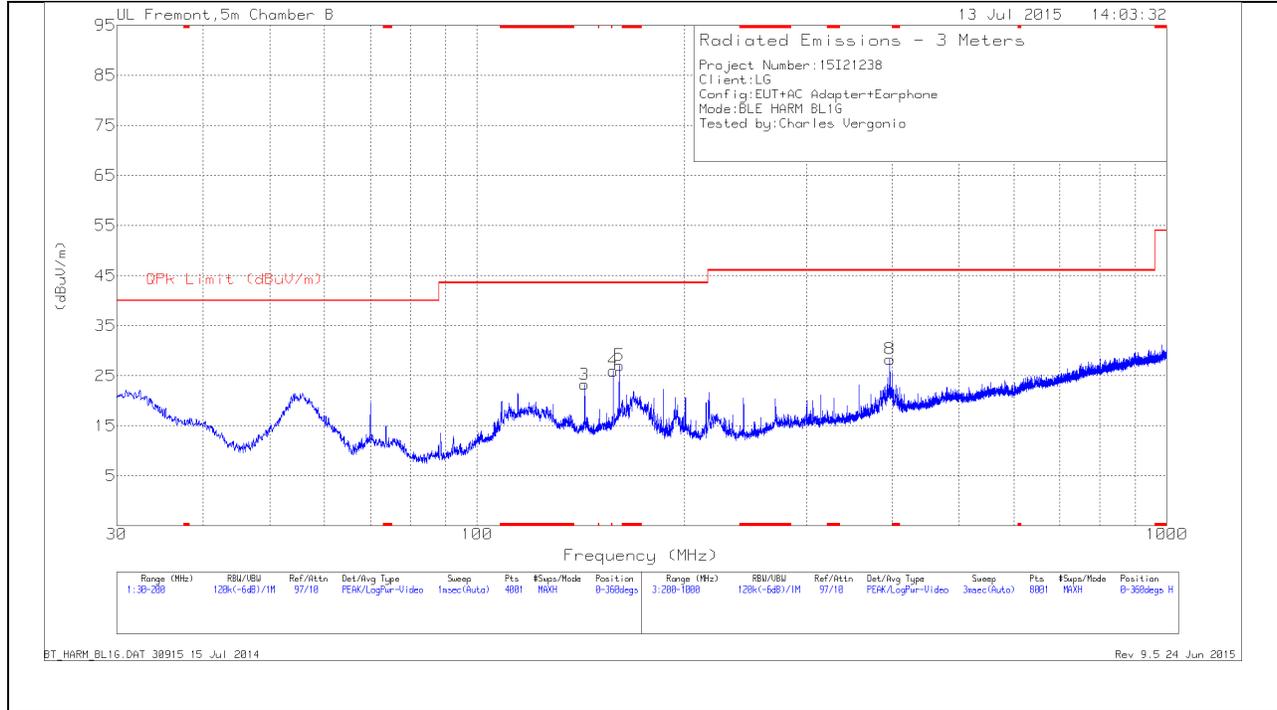
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Ftr /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
* 4.96	40.78	PK2	34	-30.3	0	44.48	-	-	74	-29.52	328	157	H
* 4.96	29.94	MAV1	34	-30.3	2.04	35.68	54	-18.32	-	-	328	157	H
* 7.44	43.52	PK2	35.7	-27.5	0	51.72	-	-	74	-22.28	308	100	H
* 7.439	33.91	MAV1	35.7	-27.5	2.04	44.15	54	-9.85	-	-	308	100	H
* 9.358	36.42	PK2	36.4	-24.4	0	48.42	-	-	74	-25.58	277	161	H
* 9.355	25.06	MAV1	36.4	-24.4	2.04	39.1	54	-14.9	-	-	277	161	H
* 4.272	40.59	PK2	33.5	-30.4	0	43.69	-	-	74	-30.31	235	179	V
* 4.27	29.21	MAV1	33.4	-30.4	2.04	34.25	54	-19.75	-	-	235	179	V
* 7.44	43.12	PK2	35.7	-27.5	0	51.32	-	-	74	-22.68	108	381	V
* 7.439	33.14	MAV1	35.7	-27.5	2.04	43.38	54	-10.62	-	-	108	381	V
* 9.134	37.3	PK2	36.1	-24.6	0	48.8	-	-	74	-25.2	76	349	V
* 9.134	25.81	MAV1	36.1	-24.6	2.04	39.35	54	-14.65	-	-	76	349	V

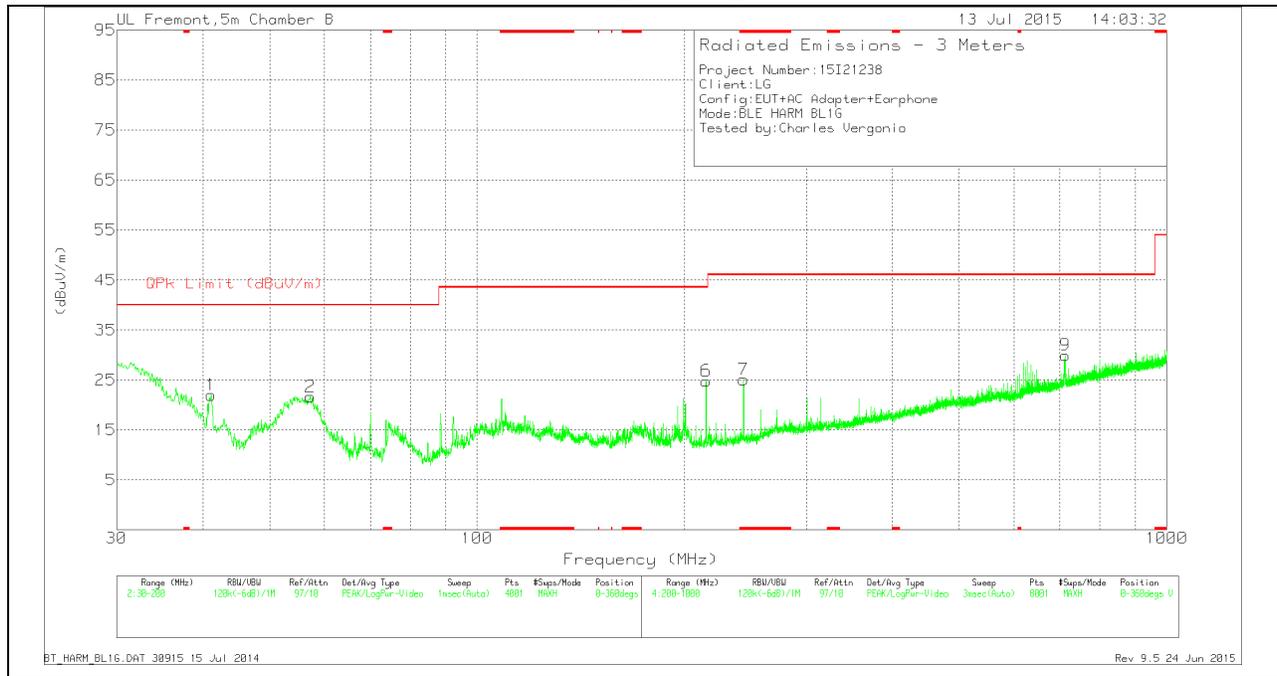
9.3. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



VERTICAL PLOT



BELOW 1 GHz TABLE

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
7	* 243.4	39.91	Pk	11.6	-26.4	25.11	46.02	-20.91	0-360	101	V
1	41.135	37.49	Pk	13.2	-28.7	21.99	40	-18.01	0-360	101	V
2	57.285	42.77	Pk	7.4	-28.5	21.67	40	-18.33	0-360	101	V
3	143.1775	37.89	Pk	12.9	-27.5	23.29	43.52	-20.23	0-360	199	H
4	157.5	40.98	Pk	12.3	-27.3	25.98	43.52	-17.54	0-360	199	H
5	160.73	42.04	Pk	12.2	-27.2	27.04	43.52	-16.48	0-360	299	H
6	214.8	40.92	Pk	10.6	-26.7	24.82	43.52	-18.7	0-360	199	V
8	396.8	38.74	Pk	15.4	-25.8	28.34	46.02	-17.68	0-360	299	H
9	712.8	33.86	Pk	20.4	-24.3	29.96	46.02	-16.06	0-360	299	V

PK - Peak detector

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

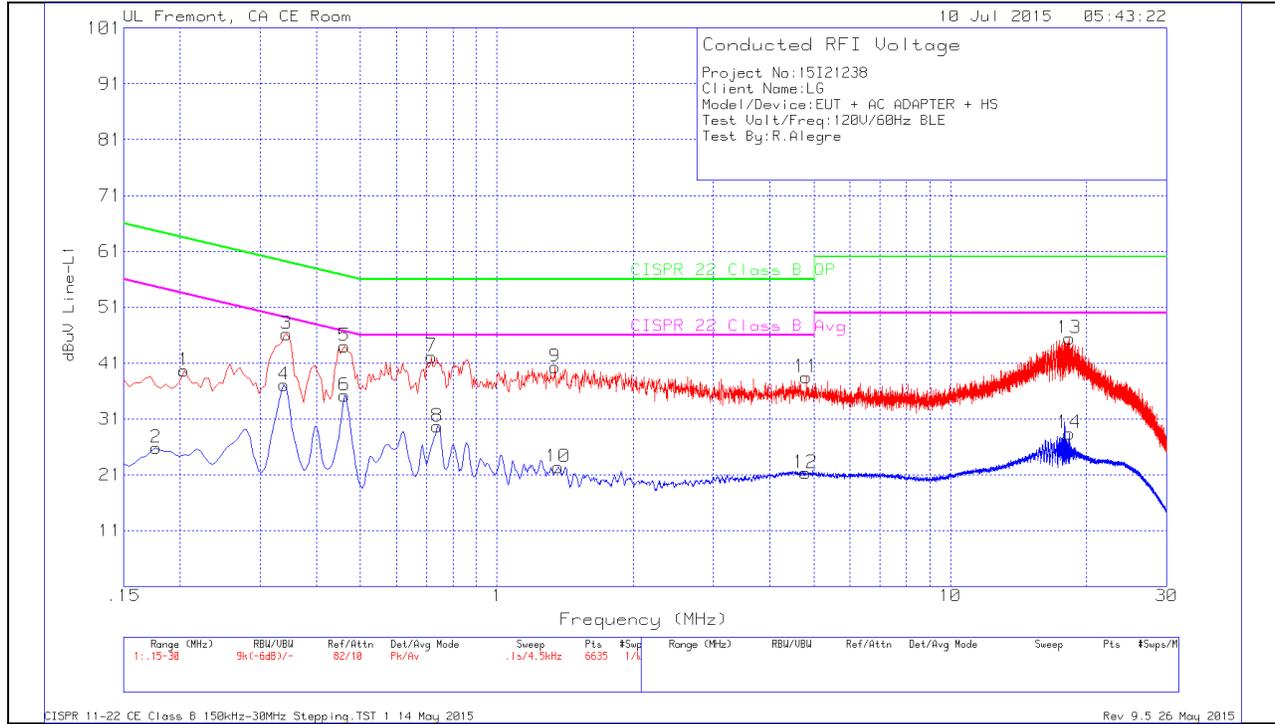
TEST PROCEDURE

ANSI C63.10

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT



LINE 1 RESULTS

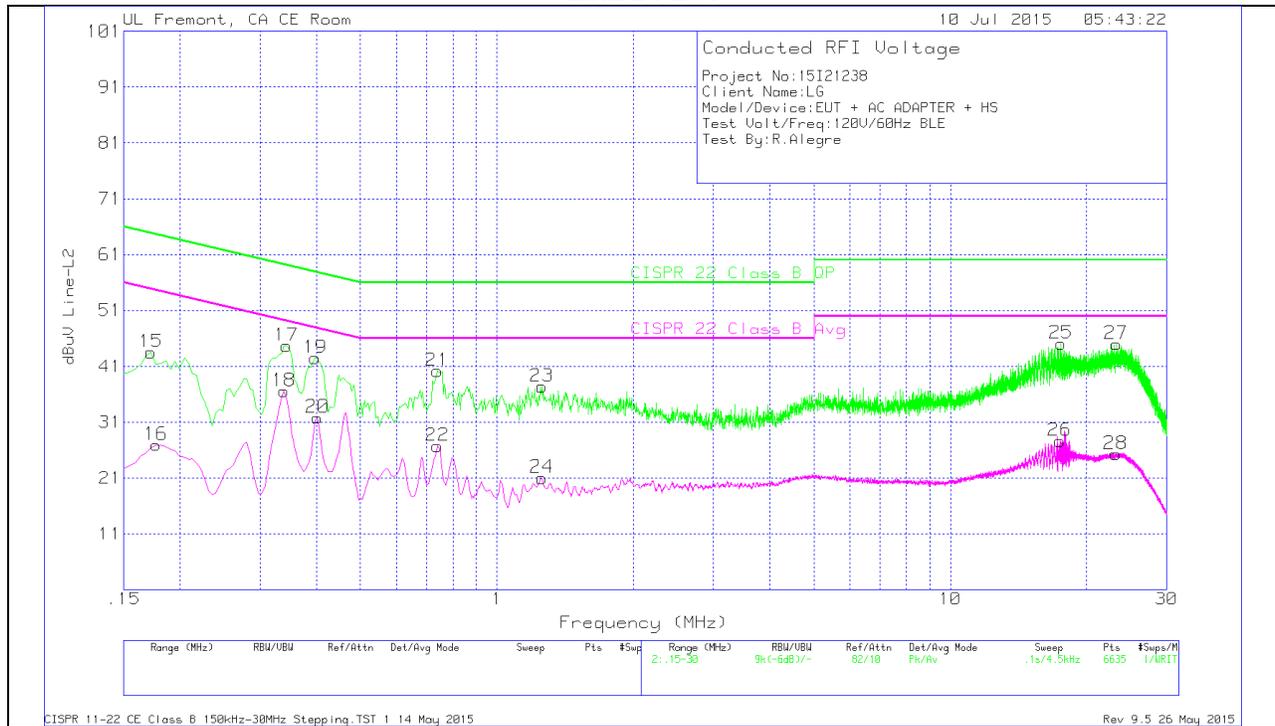
Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
1	.204	38.76	Pk	.9	0	39.66	63.45	-23.79	-	-
2	.177	24.74	Av	1.1	0	25.84	-	-	54.63	-28.79
3	.3435	45.73	Pk	.5	0	46.23	59.12	-12.89	-	-
4	.339	36.6	Av	.5	0	37.1	-	-	49.23	-12.13
5	.4605	43.64	Pk	.4	0	44.04	56.68	-12.64	-	-
6	.4605	34.83	Av	.4	0	35.23	-	-	46.68	-11.45
7	.717	41.86	Pk	.3	0	42.16	56	-13.84	-	-
8	.7395	29.36	Av	.3	0	29.66	-	-	46	-16.34
9	1.3425	40.04	Pk	.2	.1	40.34	56	-15.66	-	-
10	1.365	22.11	Av	.2	.1	22.41	-	-	46	-23.59
11	4.8075	38.18	Pk	.2	.1	38.48	56	-17.52	-	-
12	4.794	21.04	Av	.2	.1	21.34	-	-	46	-24.66
13	18.2985	44.95	Pk	.3	.2	45.45	60	-14.55	-	-
14	18.294	27.95	Av	.3	.2	28.45	-	-	50	-21.55

Pk - Peak detector

Av - Average detection

LINE 2 PLOT



LINE 2 RESULTS

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
15	.1725	42.34	Pk	1.2	0	43.54	64.84	-21.3	-	-
16	.177	25.73	Av	1.2	0	26.93	-	-	54.63	-27.7
17	.3435	44.21	Pk	.5	0	44.71	59.12	-14.41	-	-
18	.339	36.06	Av	.5	0	36.56	-	-	49.23	-12.67
19	.3975	42.09	Pk	.4	0	42.49	57.91	-15.42	-	-
20	.402	31.39	Av	.4	0	31.79	-	-	47.81	-16.02
21	.7395	39.87	Pk	.3	0	40.17	56	-15.83	-	-
22	.7395	26.47	Av	.3	0	26.77	-	-	46	-19.23
23	1.257	37.19	Pk	.2	0	37.39	56	-18.61	-	-
24	1.257	20.82	Av	.2	0	21.02	-	-	46	-24.98
25	17.547	44.59	Pk	.3	.2	45.09	60	-14.91	-	-
26	17.4345	27.16	Av	.3	.2	27.66	-	-	50	-22.34
27	23.235	44.48	Pk	.3	.2	44.98	60	-15.02	-	-
28	23.1675	24.79	Av	.3	.2	25.29	-	-	50	-24.71

Pk - Peak detector

Av - Average detection